Inductive Electronic Components

2005

Radiohm

Radiohm manufactures other Electronic Components: Carbon and Wirewound Presets, Carbon Rotary and Slider Potentiometers, Main Switches, Key Switches, Push-button Switches and Keyboards, Membrane Keyboards.
The complete range is described in:
- the main catalogue **Potentiometers & Switches**
- Internet site **www.radiohm.com**

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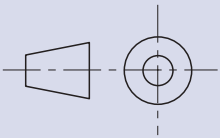
Dimensions
All dimensions are given in millimeters

Decimal points
In the numerical values the decimal point is used

General tolerances
When no dimensional tolerance is specified, the tolerance is intended as follows:
- ± 0.5 mm for linear dimensions and diameters, except hole centre distances on PCB
- ± 0.1 mm for hole diameters on PCB
- ± 5° for angles

Drawings



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The data contained in this catalog is intended only as a description of the products and is not meant to be confirmed or approved specifications in the legal sense. We reserve the right to change the design or specifications, without prior notice.

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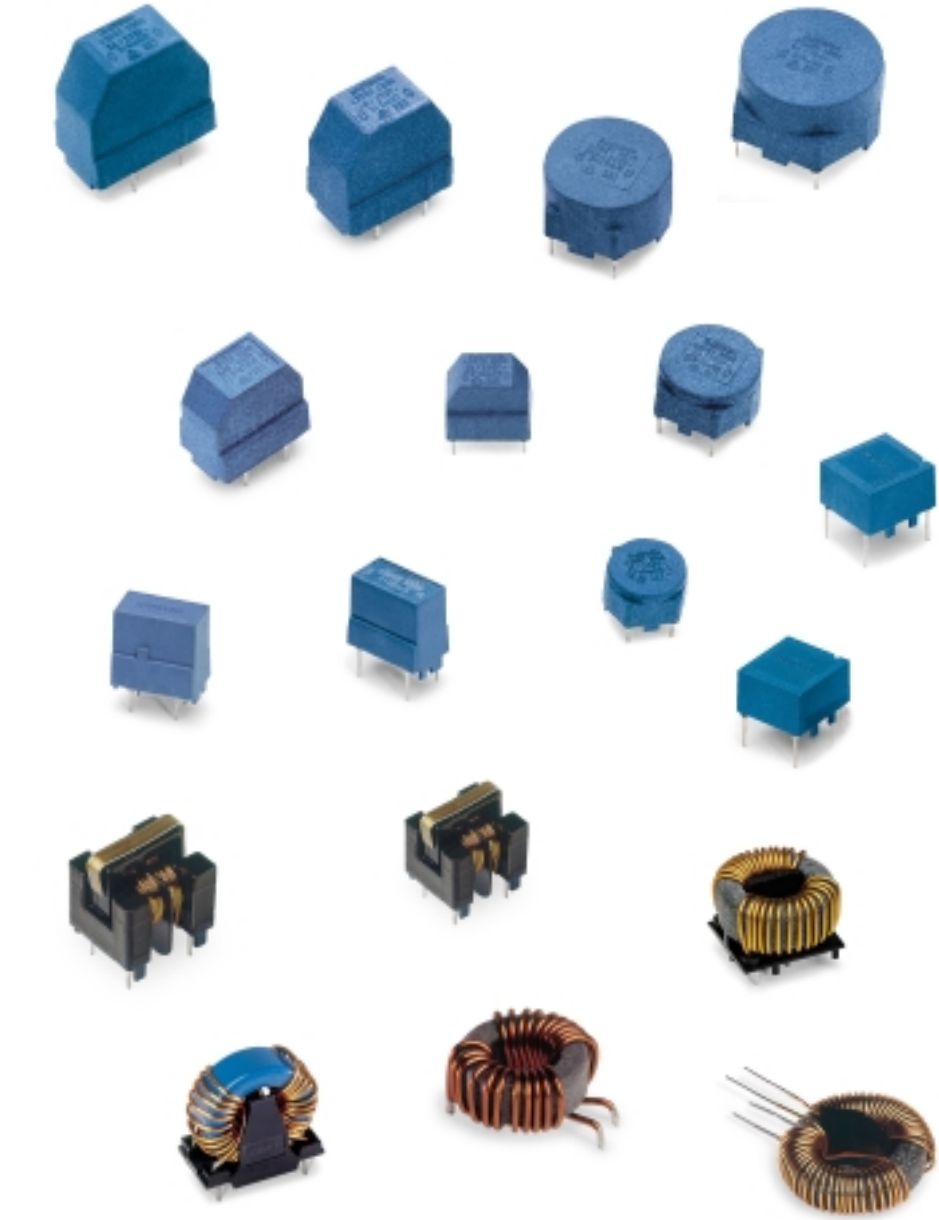
Type	Type	Type	Type	Type
21N22	32V12	42H14	44H27	51V27 SV2P
21N42	32V12 SV1P	42H17	44H32	51V27 SV3P
21N44	32V16	42H22	44H42	51V32
21N45	32V16 SV1P	42H27		
	32V23		44V20	51V32 SV3
31H13	32V23 SV2P	42H32	44V25	51V32 SV3P
31H13R	32V25	42H42	44V30	51V33
31H17	32V25 SV2		44V32	51V33 SV3
31H17D	32V25 SV2P	42U9V2		51V33 SV3P
31H20	32V31		45H17	51V38
31H24	32V31 SV3	42U11V2	45H22	51V38 SV4
31H27	32V31 SV3P	42U11V4	45H27	51V38 SV4P
31H32	32V36	42U13V2	45H32	51V47
31H33	32V36 SV4	42U13V4	45H42	51V47 SV5
31H38	32V36 SV4P	42U15H2		
		42U15V 4A	45V20	52H17
31V13	34H13 R	42U15V 4B	45V25	52H21
31V13R	34H17	42U15V 4C		52H27
31V13R SV1P	34H20	42U15V 4D	45V30	
31V17	34H24	42U15V 4E	45V32	52V13 SV1P
31V17 SV2P	34H33	42U15V 4P		52V17
31V17D	34H33 TA		46H14	52V17 SV1P
31V17D SV2P		42V13	46H17	52V21
31V20	34V13R	42V15	46V15	52V21 SV2
31V20 SV2P	34V17	42V18	46V18	52V21 SV2P
31V24	34V20	42V20		52V27
31V24 SV2P	34V24	42V25	47H14	52V27 SV3
31V27		42V30	47V15	
31V27 SV3P	35H13R	42V32		56H14
31V32	35H17		51H13	56H17
31V32 SV3	35H20	43E13H	51H17	56H22
31V32 SV3P	35H24	43E16H	51H20	56H27
31V33	35H33	43E20H	51H24	56H32
31V33 SV3		43E25H	51H27	56H42
31V33 SVP3P	35V13R		51H32	56H42A
31V38	35V17	43E13V	51H33	
31V38 SV4	35V20	43E16V	51H38	56V15
	35V24	43E20V	51H47	56V20
31H12		43E25V		56V25
31H16	38H31 SM		51V13	56V30
32H23	38H36 SM	43H17	51V13 SV1P	56V32
32H25		43H22	51V17	56V35
32H25 SK	42E13H2	43H27		
32H25 SKP	42E16H2	43H32	51V17 SV1P	57H14
32H25 TA	42E20H2	43H42	51V17 SV2P	57H17
32H31	42E25H2		51V20	57H22
	42E30H2	43V20	51V20 SV2P	57H27
32H31 SL		43V25	51V24	
32H31 TA	42E13V2	43V30	51V24 SV2	57V15
32H36	42E16V2			57V20
32H36 SL	42E20V2	44H17	51V24 SV2P	
		44H22	51V27	

Type	Type
57V25	68H14 21 2
57V30	68H14 31 1
	68H14 31 2
61H14	
61V15	68H14 51 1
62H10	
62H12	68H20 21 2
62H14	68H20 31 2
62H15	
62H16	68V15 31 1
	68V15 51 1
63V19 21 0	68V15 71 1
63V19 21 3	
63V19 31 0	69E13H
63V19 31 1	69E13V
63V19 41 0	69E16H
	69E16HG
64H20 21 2	69EFD20
64H20 21 3	69E20H
64H27	69EFD25
64U13V2	69E25H
	69E251H
65A19	69E30H
65B17	
65B24	69H14 21 2
65B29	69H20 21 2
65D33	69H20 31 2
65E10	69H21
65F13A	69H27 21 2
65F13B	69H27 31 2
65F13C	69V21
65F13D	69V25
67E13H	69V25T
67E13V	69V30
67E16H	
67E16V	70E13H
67EFD20	70E16H
67E20H	70E20H
67E20V	70E25H
67EFD25	70E251H
67E25H	70E30H
67E25V	
67E251H	
67EFD 30	
67E30H	
67H14	
67U13V2	
67V15	



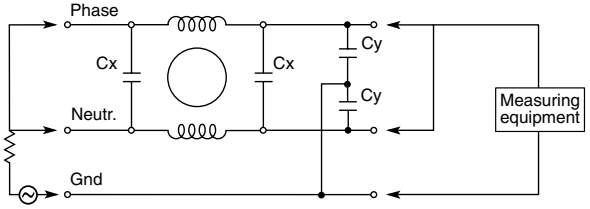
A distinct category of filters, especially designed to supress the “common mode” or asymmetrical interferences, which appear between both the power line cords and the ground, is realized with the so called “current-compensated” chokes.

These chokes are fitted with a ferrite core and a special winding arrangement, made of two symmetrical windings where the same current flows in such a way as to produce two identical but opposite magnetic flux, so ensuring that the high permeability core is not saturated.

Of course, to reduce practically to zero the resultant flux, the two windings must be electrically identical and the stray inductance much lower than the nominal windings inductance, which is easily obtained with the toroidal cores.

Under these conditions, the filtering effect takes place because the currents due to the asymmetrical disturbances flow along the two windings in such a way that the corresponding flux are added, thus allowing the full winding inductance to appear.

While the filter is very affective against the asymmetrical interferences, it shows a very low effect against the symmetrical interferences, as they produce a current compensation in the windings, and this causes the choke inductance to disappear.



Of course, a current-compensated filter provides a double attenuation, i e it not only prevents the interferences internally generated in the equipment from disturbing the other equipment, but it also protects sensitive circuits inside the equipment like microprocessors or logical equipment from the external interferences.

The current-compensated chokes are normally used in power supply filtering in combination with capacitors; in the diagram a typical filter is shown with the Cy capacitors, which strongly improve the asymmetrical interferences suppression, and the Cx capacitors which are effective against the symmetrical interferences.

In practice, these filters can be used on a frequency range from a few kHz to a few Mhz; their interferences attenuation is in principle proportional to the inductance value and to the frequency, but it also depends on the Cy capacitors and on the stray capacitance, which unfortunately limits the useful filtering band.

The current-compensated choke actually shows in its lower frequency range an increasing attenuation with frequency, then a generally rounded maximum which corresponds to the resonance frequency, and finally a decreasing attenuation with frequency.

The higher usefull filtering frequency does not generally exceed the resonance frequency, which depends on the inductance value as well as the stray capacitance; this in turn can vary according to the coil size, the coil design and winding method, but this occurrence cannot be eliminated in principle.

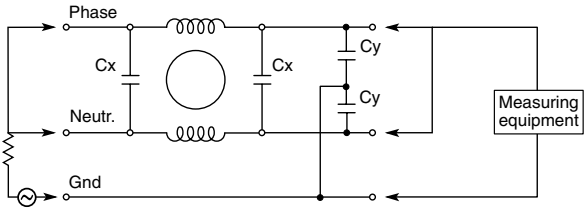
Il existe une catégorie distincte de filtre, spécialment prévu pour supprimer "le mode commun" ou autrement appelé "les interférences asymétriques", qui apparaissent conjointement entre les cables d'alimentation et la terre; ce filtrage est réalisé avec des selfs à compensation de courant.

Ces selfs sont réalisées à partir de tore ferrite et d'un bobinage spécial, constitué de deux bobinages symétriques de manière à ce que le flux de courant crée deux flux magnétiques identiques et opposés, permettant d'éviter la saturation du tore.

Bien entendu, afin de réduire pratiquement à zéro le flux magnétique résultant, les deux bobinages doivent être électriquement identiques et l'inductance de fuite nettement inférieure à l'inductance nominale de chaque bobinage, ce qui est facilement obtenu sur des noyaux toriques.

Dans ces conditions, le dispositif a un effet filtrant parce que les courants créés par les perturbations asymétriques se propagent le long des deux bobinages de facon à ce que les flux résultants s'additionnent, permettant donc l'apparition de la totalité de la valeur inductive de bobinage.

Alors que le dispositif est très efficace contre les interférences asymétriques, il l'est peu contre les interfèrences symétriques, étant donné qu'elles créent une compensation du courant dans les bobinages, entrainant une disparition de la valeur d'inductance.



Une self à courant compensé produit une atténuation symétrique des interférences électromagnétiques de deux cotés, c`est à dire en empêcheant les interférences produites par l'appareil de déranger le fonctionnement d'autres équipements, et en protégeant les parties sensibles de l'appareil (tels que les microprocesseurs ou les circuits logiques) des perturbations externes.

Ces selfs sont normalement utilisées dans le filtrage des alimentations à découpage combinées à des condensateurs; le graphique montre un filtre typique avec les condensateurs Cy, qui ont une grande importance sur la suppression des perturbations asymétriques, et les condensateurs Cx qui ont effet sur les interférences symétriques .

Ces filtres sont pratiquement utilisés sur une bande de fréquence allant de quelques kHz à quelques Mhz; leur atténuation des interférences est en principe proportionelle à la valeur d'inductance et à la fréquence, mais dépende aussi des capacités adjointes Cy et des capacités de fuite, qui malheureusement limitent la bande de filtrage utilisable.

En effet, la seule self à compensation de courant montre une atténuation des interférences qui s'accroit, en gros, proportionnellement à la fréquence jusqu'à la fréquence de résonance, à laquelle on trouve un maximum d'atténuation; aux fréquences plus élevées l'atténuation décroit sensiblement.

La fréquence maximale à laquélle le filtrage est efficace ne dépasse pas beaucoup, d'abitude, la fréquence de résonance; celle ci dépend soit de la valeur d'inductance soit de la capacité de dispersion, qui peut varier en fonction de la géométrie de la self et de la technologie de bobinage; ce phénomène ne peut en principe pas être éliminé.

Current-compensated Noise Suppression Chokes

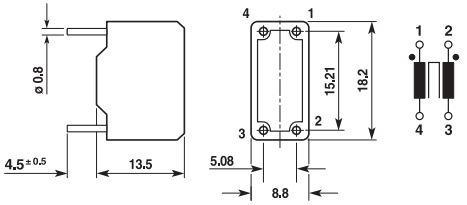
TYPES
42V13
42V18

Voltage **250 Vac**
Current **0.3 to 2 A - 0.25 to 0.7 A**

CASE VERSION

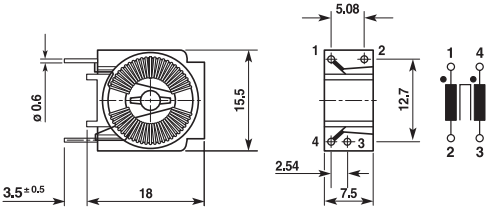
These chokes are fitted with high-permeability toroid core (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.

Dimensions in mm
Pins are tinned



42V13

o Pins
• Start of winding



42V18

o Pins
• Start of winding

TYPES

Code	Rated current per winding A	Rated inductance per winding mH	DC resistance per winding (typical) mΩ	Code	Rated current per winding A	Rated inductance per winding mH	DC resistance per winding (typical) mΩ
42V13 03 01	0.3	1	180	42V18 02 50	0.25	47	2400
42V13 03 02	0.3	2.2	300	42V18 03 00	0.3	30	2200
42V13 03 03	0.3	4.7	400	42V18 03 50	0.35	22	1900
42V13 03 04	0.3	12	650	42V18 04 00	0.4	15	1350
42V13 05 01	0.5	1	100	42V18 05 00	0.5	10	1000
42V13 05 02	0.5	2.2	140	42V18 06 00	0.6	6.8	630
42V13 06 00	0.6	4.4	220	42V18 07 00	0.7	4.7	440
42V13 10 01	1	1	60				
42V13 10 02	1	3	150				
42V13 15 00	1.5	1.6	100				
42V13 20 00	2	1.1	70				

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	1500 V -50 Hz, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C
Approx. weight:	42V13 4 g 42V18 6 g

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

Current-compensated Noise Suppression Chokes

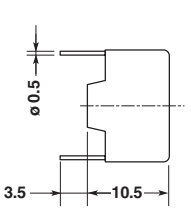
TYPES
42H14

Voltage **250 Vac**
Current **0.3 to 2 A**

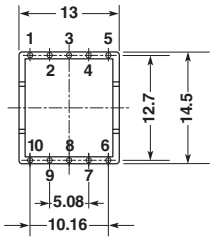
CASE VERSION

These chokes are fitted with high-permeability toroid core (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.

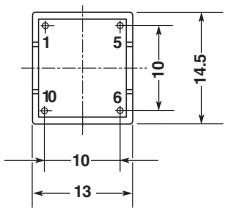
Dimensions in mm
Pins are tinned



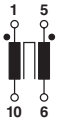
42H14
Horizontal mounting



Standard



Optional
K type



o Pins
• Start of winding

TYPES

Standard	Optional	Rated current per winding	Rated inductance per winding	DC resistance per winding (typical)
Code	Code	A	mH	m Ω
42H14 03 01	42H14 03 T1	0.3	1	180
42H14 03 02	42H14 03 T2	0.3	2.2	300
42H14 03 03	42H14 03 T3	0.3	4.7	400
42H14 03 04	42H14 03 T4	0.3	12	650
42H14 05 01	42H14 05 T1	0.5	1	100
42H14 05 02	42H14 05 T2	0.5	2.2	140
42H14 06 00	42H14 06 T0	0.6	4.4	220
42H14 10 00	42H14 10 T0	1	0.1	30
42H14 10 01	42H14 10 T1	1	1	60
42H14 10 02	42H14 10 T2	1	3	150
42H14 20 00	42H14 20 T0	2	1.1	70

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	1500 V -50 Hz, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C
Approx. weight:	3 g

The chokes are designed and tested in accordance with EN 138100; EN 60938
The cases are of flame-retardant plastic material in accordance with UL 94V-0

Current-compensated Noise Suppression Chokes

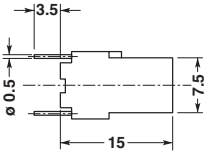
TYPES
42V15

Voltage **250 Vac**
Current **0.3 to 2 A**

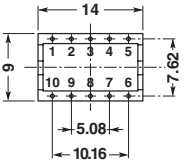
CASE VERSION

These chokes are fitted with high-permeability toroid core (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.

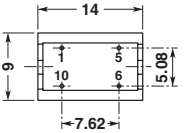
Dimensions in mm
Pins are tinned



42V15
Vertical mounting



Standard



Optional
K type

o Pins
• Start of winding

TYPES

Standard	Optional	Rated current per winding	Rated inductance per winding	DC resistance per winding (typical)
Code	Code	A	mH	m Ω
42V15 03 01	42V15 03 T1	0.3	1	180
42V15 03 02	42V15 03 T2	0.3	2.2	300
42V15 03 03	42V15 03 T3	0.3	4.7	400
42V15 03 04	42V15 03 T4	0.3	12	650
42V15 05 01	42V15 05 T1	0.5	1	100
42V15 05 02	42V15 05 T2	0.5	2.2	140
42V15 06 00	42V15 06 T0	0.6	4.4	220
42V15 10 00	42V15 10 T0	1	0.1	30
42V15 10 01	42V15 10 T1	1	1	60
42V15 10 02	42V15 10 T2	1	3	150
42V15 20 00	42V15 20 T0	2	1.1	70

Technical Data

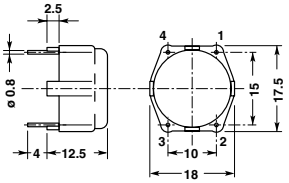
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	1500 V -50 Hz, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C
Approx. weight:	3 g
Approval:	VDE

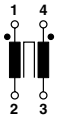
The chokes are designed and tested in accordance with EN 138100; EN 60938
The cases are of flame-retardant plastic material in accordance with UL 94V-0

Voltage 250 Vac
Current 0.4 to 3.6 A

CASE VERSION

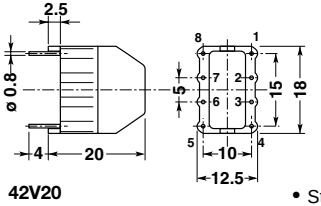
These chokes are fitted with high-permeability toroid core (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.





42H17
Horizontal mounting

o Pins
• Start of winding



42V20
Vertical mounting

o Pins
• Start of winding

Dimensions in mm
Pins are tinned

Optional pins: 2-7/3-6

TYPES

Horizontal	Vertical	Rated current per winding	Rated inductance per winding	DC resistance per winding (typical)
Code	Code	A	mH	m Ω
42H17 04 00	42V20 04 00	0.4	39	2600
42H17 04 01	42V20 04 01	0.4	27	1000
42H17 05 00	42V20 05 00	0.5	18	940
42H17 07 00	42V20 07 00	0.7	10	360
42H17 10 00	42V20 10 00	1	6.8	400
42H17 12 00	42V20 12 00	1.2	6.8	330
42H17 15 00	42V20 15 00	1.5	3.3	100
42H17 20 02	42V20 20 02	2	1	40
42H17 26 00	42V20 26 00	2.6	0.4	60
42H17 30 00	42V20 30 00	3	1	50
42H17 36 00	42V20 36 00	3.6	0.4	15

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature.
Inductance tolerance:	+50 -30%
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Overtemperature of windings:	< 55°C
Approx. weight:	10 g
Approval:	VDE

More technical data see p. 14

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

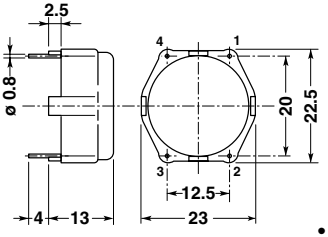
Current-compensated Noise Suppression Chokes

TYPES
42H22
42V25

CASE VERSION

Voltage **250 Vac**
Current **0.3 to 3 A**

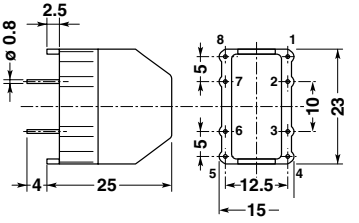
These chokes are fitted with high-permeability toroid core (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.



o Pins
• Start of winding

42H22
Horizontal mounting

Dimensions in mm
Pins are tinned



o Pins
• Start of winding

42V25
Vertical mounting

Optional pins: 1-8/4-5

TYPES

Horizontal	Vertical	Rated current per winding	Rated inductance per winding	DC resistance per winding (typical)
Code	Code	A	mH	m Ω
42H22 03 00	42V25 03 00	0.3	47	1400
42H22 05 00	42V25 05 00	0.5	27	900
	42V25 05 01	0.5	39	1100
	42V25 05 02	0.5	47	1200
	42V25 06 00	0.6	18	480
	42V25 08 00	0.8	15	360
	42V25 08 01	0.8	27	500
	42V25 08 02	0.8	18	400
42H22 10 00	42V25 10 00	1	10	450
	42V25 10 01	1	15	540
	42V25 10 02	1	5	300
	42V25 12 00	1.2	10	400
	42V25 15 00	1.5	6.8	260
42H22 20 00	42V25 20 00	2	2.2	70
	42V25 25 00	2.5	3.3	120
42H22 30 00	42V25 30 00	3	1.2	70

Technical Data

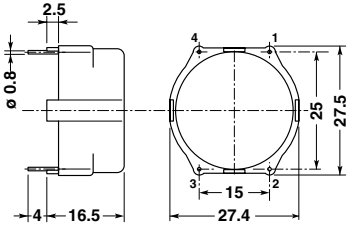
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature.
Inductance tolerance:	+50 -30%
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Overtemperature of windings:	< 55°C
Approx. weight:	12 g
Approval:	VDE

More technical data see p. 17

CASE VERSION

Voltage **250 Vac**
Current **0.5 to 4 A**

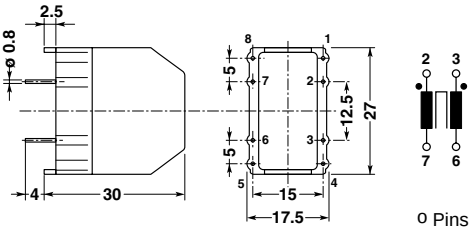
These chokes are fitted with high-permeability toroid core (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.



o Pins
• Start of winding

42H27
Horizontal mounting

Dimensions in mm
Pins are tinned



o Pins
• Start of winding

42V30
Vertical mounting

Optional pins: 1-8/4-5

TYPES

Horizontal	Vertical	Rated current per winding	Rated inductance per winding	DC resistance per winding (typical)
Code	Code	A	mH	m Ω
42H27 05 00	42V30 05 00	0.5	56	2000
42H27 06 00		0.6	47	1150
42H27 10 00	42V30 10 00	1	27	600
42H27 20 00	42V30 20 00	2	5.6	170
42H27 40 00	42V30 40 00	4	2.7	45

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	1500 V -50 Hz, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C
Approx. weight:	16 g
Approval:	VDE

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

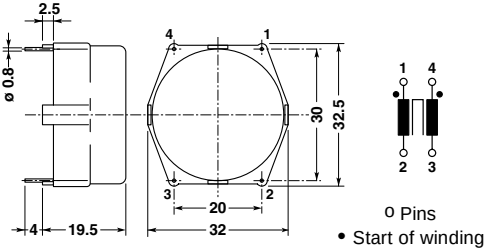
Current-compensated Noise Suppression Chokes

TYPES
42H32
42V32

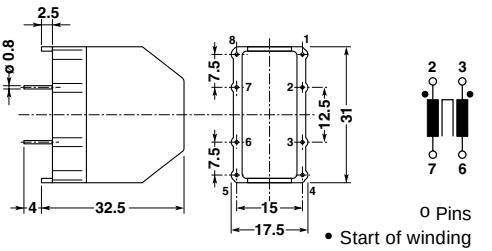
CASE VERSION

Voltage **250 Vac**
Current **0.5 to 6 A**

These chokes are fitted with high-permeability toroid core (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.



42H32
Horizontal mounting



42V32
Vertical mounting

Dimensions in mm
Pins are tinned

Optional pins: 1-8/4-5

TYPES

Horizontal	Vertical	Rated current per winding	Rated inductance per winding	DC resistance per winding (typical)
Code	Code	A	mH	m Ω
42H32 05 01	42V32 05 01	0.5	82	1500
42H32 05 00	42V32 05 00	0.5	100	1500
42H32 10 01	42V32 10 01	1.0	33	630
42H32 10 00	42V32 10 00	1.0	47	750
42H32 15 01	42V32 15 01	1.5	27	490
42H32 15 00	42V32 15 00	1.5	22	330
42H32 20 00	42V32 20 00	2.0	6.8	139
42H32 20 01	42V32 20 01	2.0	10	230
42H32 40 03	42V32 40 03	4.0	3.3	68
42H32 40 01		4.0	3.9	61
	42V32 40 01	4.0	3.9	80
42H32 60 00		6.0	1.8	25
	42V32 60 00	6.0	1.8	38

Technical Data

Rated current: referred to 250 V-50 Hz and +60°C ambient temperature
Inductance tolerance: +50 -30%
Climatic category: DIN GKC (-40 to +125°C; humidity cat. C)
Overtemperature of windings: < 55°C
Approx. weight: 28 g

More technical date see p. 19

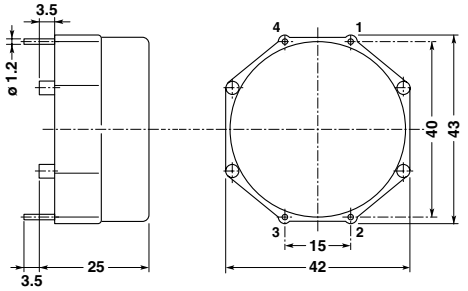
Approval: VDE

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

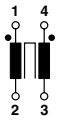
Voltage **250 Vac**
Current **1 to 10 A**

CASE VERSION

These chokes are fitted with high-permeability toroid core (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.



Dimensions in mm
Pins are tinned



o Pins
• Start of winding

42H42
Horizontal mounting

TYPES

Code	Rated current per winding A	Rated inductance per winding mH	DC resistance per winding (typical) m Ω
42H42 10 00	1	68	1000
42H42 20 00	2	18	230
42H42 40 00	4	6.8	60
42H42 60 00	6	3.9	38
42H42 80 00	8	2.7	22
42H42 A0 00	10	1.8	14

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	1500 V -50 Hz, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C
Approx. weight:	63 g
Approval:	VDE

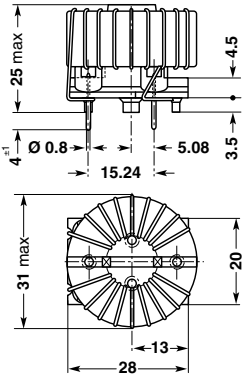
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

SOCKET VERSION
Horizontal mounting

Voltage **250 Vac**
Current **0.5 to 4 A**

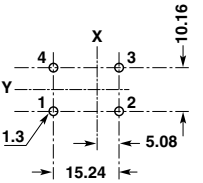
These chokes are fitted with high-permeability toroid core (ferrite). They are mainly used as power line filter in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.

Dimensions in mm
Pins are tinned

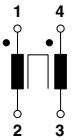


viewed on component side

XY = core axes



32H25 SKP
Horizontal mounting



o Pins
• Start of winding

TYPES

Code	Rated current per winding A	Rated inductance per winding mH	DC resistance per winding (typical) m Ω
32H25 05 00 SKP	0.5	100	1400
32H25 10 00 SKP	1	47	660
32H25 15 00 SKP	1.5	22	250
32H25 20 00 SKP	2	6.8	120
32H25 40 00 SKP	4	3.3	40

Table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	1500 V -50 Hz, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Ambient temperature:	+60°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C
Approx. weight:	24 g
Approval:	VDE

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The socket is of flame-retardant plastic material in accordance with UL 94V-0

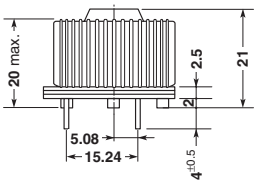
Current-compensated Noise Suppression Chokes

SOCKET VERSION
Horizontal Mounting

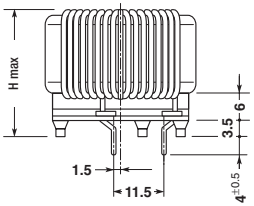
Voltage 250 Vac
Current 10 to 16 A

These chokes are fitted with high-permeability toroid core (ferrite). They are mainly used as power line filter in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.

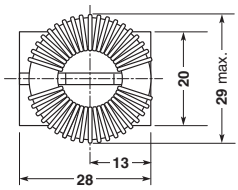
Dimensions in mm
Pins are tinned

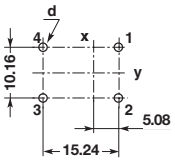


o Pins
• Start of winding



o Pins
• Start of winding

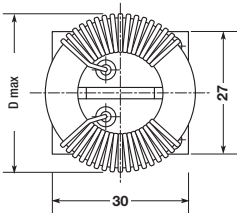


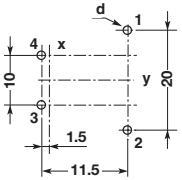


XY: core axes

32H25 SK
Horizontal mounting

viewed on component side





XY: core axes

32H31 SL 32H36 SL
Horizontal mounting

viewed on component side

TYPES

Code	Rated current per winding A	Rated inductance per winding mH	DC resistance per winding (typical) m Ω	H mm	D mm	d mm	Approx. weight g
32H25 A0 00 SK	10	1.5	10	28	37	1.6	24
32H31 A0 00 SL	10	3.9	18	28	37	1.6	46
32H25 A6 00 SK	16	0.68	4	28	37	1.7	29
32H31 A6 01 SL	16	1.2	9	28	37	2	48
32H36 A0 00 SL	10	1.8	14	30	43	1.5	57
32H36 A6 00 SL	16	2.7	15	30	43	2	62

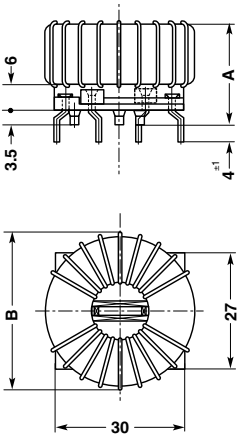
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The socket is of flame-retardant plastic material in accordance with UL 94V-0

See technical data p. 20

SOCKET VERSION
Horizontal mounting

Voltage **250 Vac**
Current **6 to 20 A**

These chokes are fitted with high-permeability toroid core (ferrite). They are mainly used as power line filter in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.

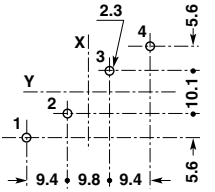


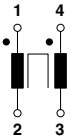
32H25 TA
32H31 TA
Horizontal mounting

Dimensions in mm
Pins are tinned

viewed on
component side

XY = core axes





o Pins
• Start of winding

TYPES

Code	Rated current per winding A	Rated inductance per winding mH	DC resistance per winding typical m Ω	Dimensions - mm		Approx. weight g	Approval
				A max.	B max.		
32H25 60 00 TA	6	1.8	20	21	31	20	VDE
32H25 A0 00 TA	10	1.5	10			24	
32H25 A6 00 TA	16	0.68	4			29	
32H31 60 01 TA	6	3.9	80	28	38	44	
32H31 80 01 TA	8	2.7	21			44	
32H31 A0 01 TA	10	1.8	12			44	
32H31 A6 01 TA	16	1.2	9			50	

Table shows the standard types. Other types can be supplied according to customer's specifications.

VDE Approval VDE

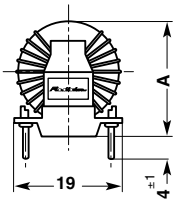
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The socket is of flame-retardant plastic material in accordance with UL 94V-0

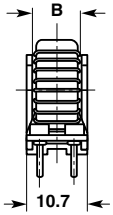
See technical data p. 23

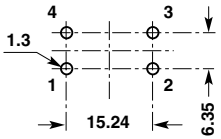
SOCKET VERSION
Vertical mounting

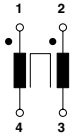
Voltage 250 Vac
Current 0.3 to 3 A

These chokes are fitted with high-permeability toroid core (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.









32V12 SV1P
32V16 SV1P
Vertical mounting

Dimensions in mm
Pins are tinned

viewed on component side

o Pins
• Start of winding

TYPES

Code	Rated current per winding A	Rated inductance per winding mH	DC resistance per winding typical m Ω	Dimensions mm A max.	Dimensions mm B max.	Overall dimensions on PCB max.	Approx. weight g	Approval
32V12 05 00 SV1P	0.5	18	940	21	7.5	20 x 11	8	
32V12 10 00 SV1P	1	6.8	400	21	7.5	20 x 11	8	VDE
32V12 20 00 SV1P	2	3.9	160					
32V12 25 00 SV1P	2.5	2.7	100					
32V12 30 00 SV1P	3	1	50					
32V16 03 00 SV1P	0.3	47	1400	23	9	22 x 11	10	VDE
32V16 05 00 SV1P	0.5	27	1200					
32V16 10 00 SV1P	1	10	450					
32V16 20 00 SV1P	2	2.2	70					

Table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	1500 V -50 Hz, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C

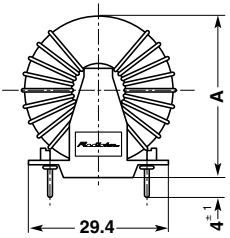
VDE Approval VDE

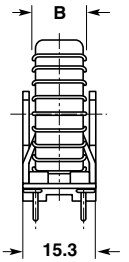
The chokes are designed and tested in accordance with EN 138100, EN 60938-1
The socket is of flame-retardant plastic material in accordance with UL 94V-0

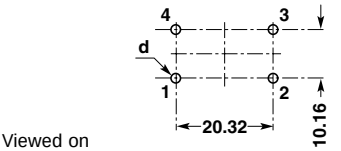
SOCKET VERSION
Vertical mounting

Voltage 250 Vac
Current 0.5 to 16 A

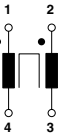
These chokes are fitted with high-permeability toroid core (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.







Viewed on component side



o Pins
• Start of winding

32V SV2P
32V SV2
Vertical mounting

Dimensions in mm
Pins are tinned

TYPES

Code	Rated current per winding A	Rated inductance per winding mH	DC resistance per winding typical m Ω	Dimensions mm			Overall dimensions on PCB max.	Approx. weight g	Approval
				A max.	B max.	d			
32V23 10 00 SV2P	1	27	600	29	9.6	1.3	28 x 16	14	VDE
32V23 20 00 SV2P	2	5.6	170						
32V23 40 00 SV2P	4	2.7	45						
32V25 05 00 SV2P	0.5	100	1400	32	12.5	1.3	31 x 16	22	VDE
32V25 10 00 SV2P	1	47	660						
32V25 15 00 SV2P	1.5	22	250						
32V25 20 00 SV2P	2	6.8	120						
32V25 40 00 SV2P	4	3.3	40						
32V25 60 00 SV2	6	1.8	20						
32V25 A0 00 SV2	10	1.5	10	32	15.5	1.5	31 x 16	24	
32V25 A6 00 SV2	16	0.68	4	34	15.5	2	33 x 16	29	

Table shows the standard types. Other types can be supplied according to customer's specifications.

VDE Approval VDE

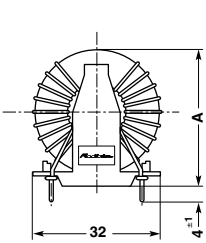
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The socket is of flame-retardant plastic material in accordance with UL 94V-0

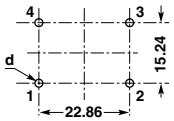
See technical data p. 23.

SOCKET VERSION
Vertical mounting

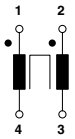
Voltage 250 Vac
Current 1 to 16 A

These chokes are fitted with high-permeability toroid core (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.





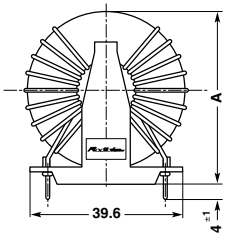
32V SV3P
32V SV3
Vertical mounting

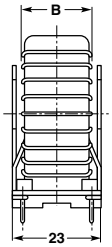


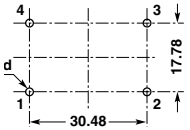
o Pins
• Start of winding

Viewed on component side

Pins are tinned
Dimensions in mm







32V SV4P
32V SV4
Vertical mounting

TYPES

Code	Rated current per winding A	Rated inductance per winding mH	DC resistance per winding typical m Ω	Dimensions mm			Overall dimensions on PCB max.	Approx. weight g	Approval
				A max.	B max.	d			
32V31 10 01 SV3P	1	68	1000	40	17	1.3	39 x 21	45	
32V31 20 01 SV3P	2	18	230						
32V31 40 01 SV3P	4	6.8	60						
32V31 60 01 SV3	6	3.9	38						
32V31 80 01 SV3	8	2.7	21						
32V31 A0 01 SV3	10	1.8	12	40	17	1.5	39 x 21	45	
32V31 A6 01 SV3	16	1.2	9	40	17	2	38 x 28	47	
32V36 10 00 SV4P	1	68	1150	43	18	1.3	42 x 23	57	VDE
32V36 20 00 SV4P	2	18	300						
32V36 40 00 SV4P	4	6.8	87						
32V36 60 00 SV4	6	3.9	41						
32V36 80 00 SV4	8	2.7	22						
32V36 A0 00 SV4	10	1.8	14	43	18	1.5	42 x 23	57	VDE
32V36 A6 00 SV4	16	2.7	15	43	23	2	42 x 23	62	

Table shows the standard types. Other types can be supplied according to customer's specifications.

VDE Approval VDE

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The sockets are of flame-retardant plastic material in accordance with UL 94V-0

See technical data p. 23.

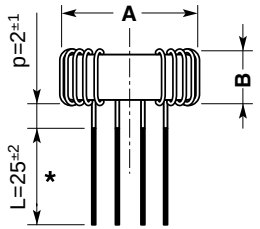
Voltage 250 Vac
Current 0.3 to 20 A

OPEN VERSION

These chokes are fitted with high-permeability toroid core (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.

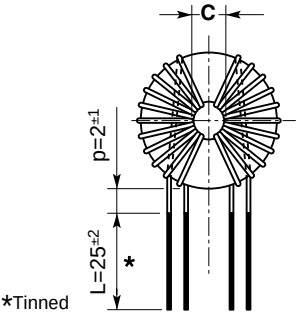
Dimensions in mm

Other terminal lengths on request



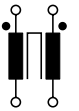
*Tinned

32H
Horizontal mounting



*Tinned

32V
Vertical mounting



• Start of winding

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1mA.
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	1500 V -50 Hz, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C

Approval VDE

The chokes are designed and tested in accordance with EN 138100; EN 60938-1

See types p. 27

OPEN VERSION

Voltage 250 Vac
Current 0.3 to 10 A

TYPES

Horizontal	Vertical	Rated current per winding A	Rated inductance per winding mH	DCR typical per winding m Ω	Dimensions - mm			Approx. weight	Approval
Code	Code				A max.	B max.	C min.	g	
32H12 10 00	32V12 10 00	1	6.8	400	17	7.5	5	5	
32H12 20 00	32V12 20 00	2	3.9	160					
32H12 25 00	32V12 25 00	2.5	2.7	100					
32H12 30 00	32V12 30 00	3	1	50					
32H16 03 00	32V16 03 00	0.3	47	1400	18.5	9	6	7	
32H16 05 00	32V16 05 00	0.5	27	1200					
32H16 10 00	32V16 10 00	1	10	450					
32H16 20 00	32V16 20 00	2	2.2	70					
32H16 30 00	32V16 30 00	3	1.2	70					
32H23 05 00	32V23 05 00	0.5	56	2000	24.6	9.6	10.8	10	
32H23 10 00	32V23 10 00	1	27	600					
32H23 20 00	32V23 20 00	2	5.6	170					
32H23 40 00	32V23 40 00	4	2.7	45					
32H25 05 00	32V25 05 00	0.5	100	1400	30	12.5	11.5	18	
32H25 10 00	32V25 10 00	1	47	660					
32H25 15 00	32V25 15 00	1.5	22	250					
32H25 20 00	32V25 20 00	2	6.8	120					
32H25 40 00	32V25 40 00	4	3.3	40					
32H25 60 00	32V25 60 00	6	1.8	20					
32H31 10 01	32V31 10 01	1	68	1000	37	17	14	40	
32H31 20 01	32V31 20 01	2	18	230					
32H31 40 01	32V31 40 01	4	6.8	60					
32H31 60 01	32V31 60 01	6	3.9	38					
32H31 80 01	32V31 80 01	8	2.7	21					
32H31 A0 01	32V31 A0 01	10	1.8	12					
32H31 A6 01	32V31 A6 01	16	1.2	8					
32H31 B0 01	32V31 B0 01	20	0.9	6	42	19	17	50	
32H36 10 00	32V36 10 00	1	68	1150	39	18	20	50	
32H36 20 00	32V36 20 00	2	18	300					
32H36 40 00	32V36 40 00	4	6.8	87					
32H36 60 00	32V36 60 00	6	3.9	41					
32H36 80 00	32V36 80 00	8	2.7	22					
32H36 A0 00	32V36 A0 00	10	1.8	14					
32H36 A6 00	32V36 A6 00	16	2.7	14	43	22	14	54	
32H36 B0 00	32V36 B0 00	20	1.5	8	44	23	11	57	

The table shows the standard types. Other types can be supplied according to customer's specifications.
See technical data p. 26

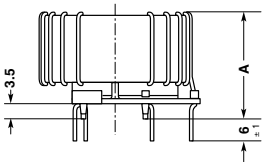
Current-compensated Three-phased Noise Suppression Chokes

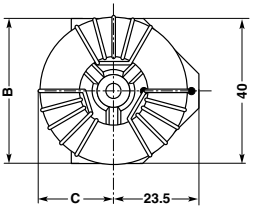
SOCKET VERSION
Horizontal mounting

Voltage 380 Vac
Current 6 to 16A

These chokes are fitted with high-permeability toroid core (ferrite). They are mainly used as power line filter in three-phase networks to prevent both the spread of parasitic noise from the electrical equipment, and the effects of line noise on the equipment itself.

Dimensions in mm
Pins are tinned

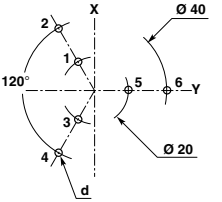


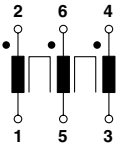


38H31 SM
38H36 SM
Horizontal mounting

viewed on component side

XY = core axes





o Pins
• Start of winding

TYPES

Code	Rated current per winding A	Rated inductance per winding mH	DC resistance per winding (typical) m Ω	Dimensions mm				Approx. weight g
				A max.	B max.	C max.	d	
38H31 60 00 SM	6	3	40	28	40	20	1.3	45
38H31 A0 00 SM	10	2	25				1.5	
38H31 A6 00 SM	16	1	15				2	
38H36 60 00 SM	6	5	55	30	44	22	1.3	57
38H36 A0 00 SM	10	3	35				1.5	
38H36 A6 00 SM	16	1.5	15				2	

Table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	1500 V -50 Hz, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The socket is of flame-retardant plastic material in accordance with UL 94V-0

Current-compensated Noise Suppression Chokes

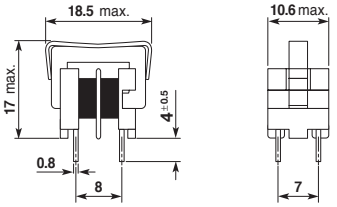
TYPES
42U9V2

Voltage 250 Vac
Current 0.18 to 1.1 A

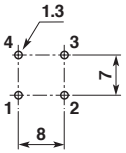
LINEAR VERSION

These chokes are fitted with two high-permeability U9 cores (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.

Dimensions in mm
Pins are tinned



42U9V2



viewed on
component side

o Pins
• Start of winding

TYPES

Code	Rated current A	Rated inductance mH	DC resistance (typical) Ω	Code	Rated current A	Rated inductance mH	DC resistance (typical) Ω
42U9V2 01 80	0.18	47	7	42U9V2 05 00	0.5	6.8	0.95
42U9V2 02 60	0.26	27	3.5	42U9V2 08 00	0.8	2.7	0.4
42U9V2 03 50	0.35	15	2	42U9V2 11 00	1.1	1.5	0.21

Values per winding

Technical Data

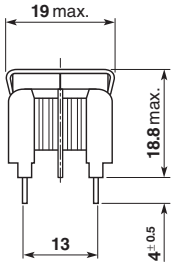
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 1 kHz, 1 Vac
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	1500 V -50 Hz, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C
Approx. weight:	10 g
Pending Approval:	VDE

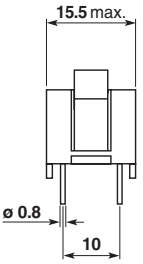
The chokes are designed and tested in accordance with EN 138100; EN 60938
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

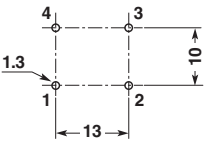
Voltage **250 Vac**
Current **0.3 to 2 A**

LINEAR VERSION

These chokes are fitted with two high-permeability U11 cores (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.







viewed on
component side

Dimensions in mm
Pins are tinned

o Pins
• Start of winding

42U11V2
Vertical mounting

TYPES

Code	Rated current A	Rated inductance mH	DC resistance (typical) Ω	Code	Rated current A	Rated inductance mH	DC resistance (typical) Ω
42U11V2 03 00	0.3	56	4.0	42U11V2 10 00	1.0	6.8	0.46
42U11V2 04 00	0.4	39	2.7	42U11V2 12 00	1.2	4.7	0.32
42U11V2 05 00	0.5	27	1.8	42U11V2 13 00	1.3	3.9	0.26
42U11V2 06 00	0.6	15	1.2	42U11V2 15 00	1.5	2.7	0.22
42U11V2 07 00	0.7	12	0.86	42U11V2 17 00	1.7	2.2	0.18
42U11V2 08 00	0.8	10	0.64	42U11V2 20 00	2.0	1.8	0.15

Values per winding

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 1 kHz, 1 Vac
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	1500 V -50 Hz, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C
Approx. weight:	13 g
Approval:	VDE

The chokes are designed and tested in accordance with EN 138100; EN 60938
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

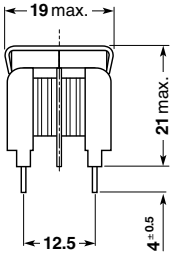
Voltage **250 Vac**
Current **0.3 to 2 A**

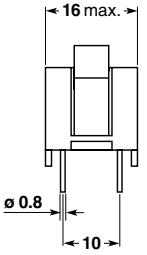
LINEAR VERSION

These chokes are fitted with two high-permeability U11 cores (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.

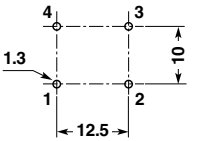
Dimensions in mm
Pins are tinned

NEW

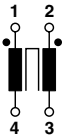




42U13V2



viewed on component side



∘ Pins
• Start of winding

TYPES

Code	Rated current A	Rated inductance mH	DC resistance (typical) Ω	Code	Rated current A	Rated inductance mH	DC resistance (typical) Ω
42U13V2 03 00	0.3	56	4.0	42U13V2 10 00	1.0	6.8	0.46
42U13V2 04 00	0.4	39	2.7	42U13V2 12 00	1.2	4.7	0.32
42U13V2 05 00	0.5	27	1.8	42U13V2 13 00	1.3	3.9	0.26
42U13V2 06 00	0.6	15	1.2	42U13V2 15 00	1.5	2.7	0.22
42U13V2 07 00	0.7	12	0.86	42U13V2 17 00	1.7	2.2	0.18
42U13V2 08 00	0.8	10	0.64	42U13V2 20 00	2.0	1.8	0.15

Values per winding

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 1 kHz, 1 Vac
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	1500 V -50 Hz, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C
Approx. weight:	13 g
Pending Approval:	VDE

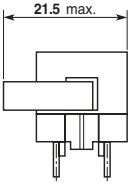
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

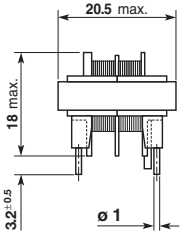
Voltage 250 Vac
Current 0.4 to 1.9 A

LINEAR VERSION

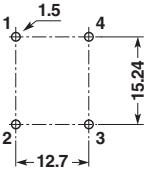
These chokes are fitted with two high-permeability U15 cores (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.

Dimensions in mm
Pins are tinned





42U15H2



viewed on
component side

o Pins
• Start of winding

TYPES

Code	Rated current A	Rated inductance mH	DC resistance (typical) Ω	Code	Rated current A	Rated inductance mH	DC resistance (typical) Ω
42U15H2 04 00	0.4	15	1.92	42U15H2 08 50	0.85	20	0.45
42U15H2 05 50	0.55	1	1.04	42U15H2 10 50	1.05	3	0.29
42U15H2 06 00	0.6	27	0.8	42U15H2 13 00	1.3	1.5	0.18
42U15H2 07 00	0.7	19	0.62	42U15H2 19 00	1.9	0.3	0.09
42U15H2 07 50	0.75	17	0.58				

Values per winding

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Inductance tolerance:	+50 -30%
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Overtemperature of windings:	< 55°C
Approx. weight:	17 g
Pending Approval:	VDE-EN 138100

More technical data see p. 30-1.
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

Current-compensated Noise Suppression Chokes

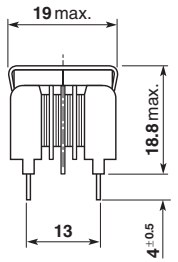
TYPES
42U11V4

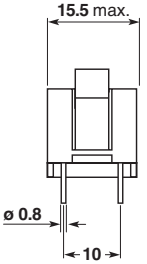
Voltage 250 Vac
Current 0.3 to 2 A

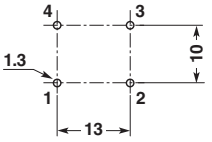
LINEAR VERSION

These chokes are fitted with two high-permeability U11 cores (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.

Dimensions in mm
Pins are tinned







viewed on component side

o Pins
• Start of winding

42U11V4

TYPES

Code	Rated current A	Rated inductance mH	DC resistance (typical) Ω	Code	Rated current A	Rated inductance mH	DC resistance (typical) Ω
42U11V4 03 01	0.3	47	4.5	42U11V4 13 01	1.3	2.7	0.25
42U11V4 04 01	0.4	27	2.7	42U11V4 15 01	1.5	2.2	0.21
42U11V4 05 01	0.5	18	1.6	42U11V4 17 01	1.7	1.7	0.16
42U11V4 07 01	0.7	10	0.95	42U11V4 20 01	2	1.2	0.12
42U11V4 10 01	1	4.7	0.44				

Values per winding

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 1 kHz, 1 Vac
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	1500 V -50 Hz, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C
Approx. weight:	13 g
Pending Approval:	VDE

The chokes are designed and tested in accordance with EN 138100; EN 60938
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

Current-compensated Noise Suppression Chokes

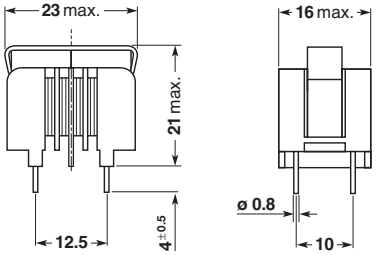
TYPES
42U13V4

Voltage 250 Vac
Current 0.3 to 2 A

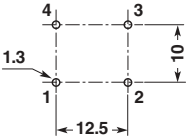
LINEAR VERSION

These chokes are fitted with two high-permeability U11 cores (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.

Dimensions in mm
Pins are tinned



42U13V4



viewed on
component side

o Pins
• Start of winding

TYPES

Code	Rated current A	Rated inductance mH	DC resistance (typical) Ω	Code	Rated current A	Rated inductance mH	DC resistance (typical) Ω
42U13V4 03 01	0.3	47	4.5	42U13V4 13 01	1.3	2.7	0.25
42U13V4 04 01	0.4	27	2.7	42U13V4 15 01	1.5	2.2	0.21
42U13V4 05 01	0.5	18	1.6	42U13V4 17 01	1.7	1.7	0.16
42U13V4 07 01	0.7	10	0.95	42U13V4 20 01	2	1.2	0.12
42U13V4 10 01	1	4.7	0.44				

Values per winding

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 1 kHz, 1 Vac
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	1500 V -50 Hz, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C
Approx. weight:	13 g
Pending Approval:	VDE

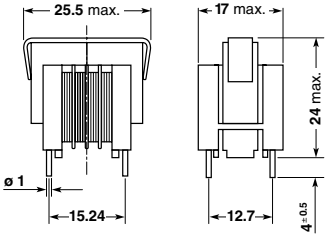
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

LINEAR VERSION

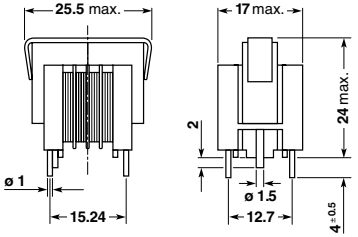
Voltage **250 Vac**
Current **0.35 to 1.45 A**

These chokes are fitted with two high-permeability cores (ferrite) U15 type. Each winding is split in two sections to reduce the winding capacitance. They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.

NEW

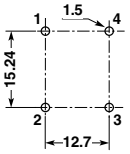


∘ Pins
• Start of winding



∘ Pins
• Start of winding

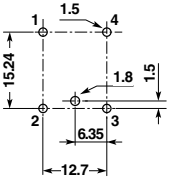
42U15V 4A



viewed on component side

Dimensions in mm
Pins are tinned

42U15V 4B



TYPES

42U15V 4A	42U15V 4B	Rated current	Rated inductance	DC resistance (typical)
Code	Code	A	mH	Ω
42U15V 4A 03 00	42U15V 4B 03 00	0.35	30	4.30
42U15V 4A 04 00	42U15V 4B 04 00	0.45	68	2.40
42U15V 4A 06 00	42U15V 4B 06 00	0.65	47	1.30
42U15V 4A 08 00	42U15V 4B 08 00	0.80	27	0.80
42U15V 4A 09 00	42U15V 4B 09 00	0.95	23	0.60
42U15V 4A 10 00	42U15V 4B 10 00	1.05	15	0.45
42U15V 4A 15 00	42U15V 4B 15 00	1.45	5	0.25

Values per winding

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Inductance tolerance:	+50 -30%
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Overtemperature of windings:	< 55°C
Approx. weight:	17 g
Pending Approval:	VDE

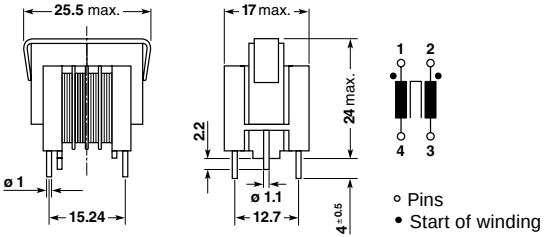
More technical data see p. 30.
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

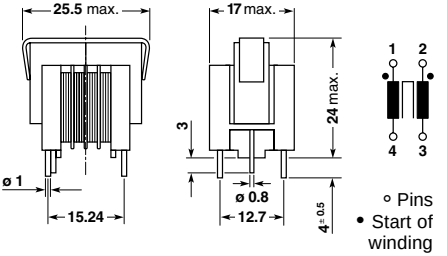
Voltage 250 Vac
Current 0.35 to 1.45 A

LINEAR VERSION

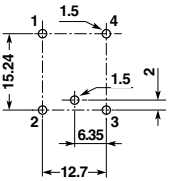
These chokes are fitted with two high-permeability cores (ferrite) U15 type. Each winding is split in two sections to reduce the winding capacitance. They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.

NEW





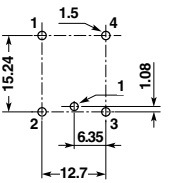
42U15V 4C



viewed on component side

Dimensions in mm
Pins are tinned

42U15V 4D



TYPES

42U15V 4C	42U15V 4D	Rated current	Rated inductance	DC resistance (typical)
Code	Code	A	mH	Ω
42U15V 4C 03 00	42U15V 4D 03 00	0.35	30	4.30
42U15V 4C 04 00	42U15V 4D 04 00	0.45	68	2.40
42U15V 4C 06 00	42U15V 4D 06 00	0.65	47	1.30
42U15V 4C 08 00	42U15V 4D 08 00	0.80	27	0.80
42U15V 4C 09 00	42U15V 4D 09 00	0.95	23	0.60
42U15V 4C 19 00	42U15V 4D 10 00	1.05	15	0.45
42U15V 4C 15 00	42U15V 4D 15 00	1.45	5	0.25

Values per winding

Technical Data

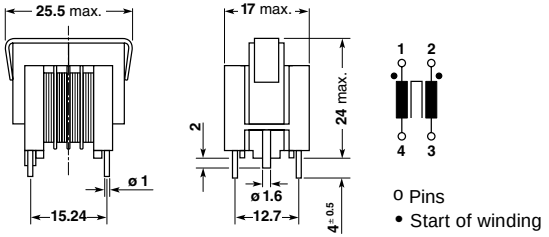
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Inductance tolerance:	+50 -30%
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Overtemperature of windings:	< 55°C
Approx. weight:	17 g
Pending Approval:	VDE

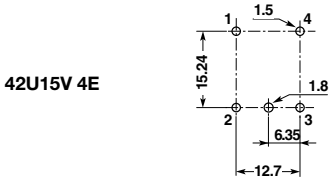
More technical data see p. 30.
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

Voltage 250 Vac
Current 0.35 to 1.45 A

LINEAR VERSION

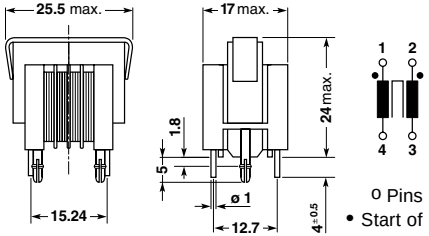
These chokes are fitted with two high-permeability cores (ferrite). Each winding is split in two sections to reduce the winding capacitance. They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.



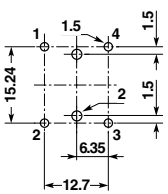


42U15V 4E

Dimensions in mm
Pins are tinned



NEW



42U15V 4P

TYPES

42U15V 4E	42U15V 4P	Rated current	Rated inductance	DC resistance (typical)
Code	Code	A	mH	Ω
42U15V 4E 03 00	42U15V 4P 03 00	0.35	30	4.30
42U15V 4E 04 00	42U15V 4P 04 00	0.45	68	2.40
42U15V 4E 06 00	42U15V 4P 06 00	0.65	47	1.30
42U15V 4E 08 00	42U15V 4P 08 00	0.80	27	0.80
42U15V 4E 09 00	42U15V 4P 09 00	0.95	23	0.60
42U15V 4E 10 00	42U15V 4P 10 00	1.05	15	0.45
42U15V 4E 15 00	42U15V 4P 15 00	1.45	5	0.25

Values per winding

Technical Data

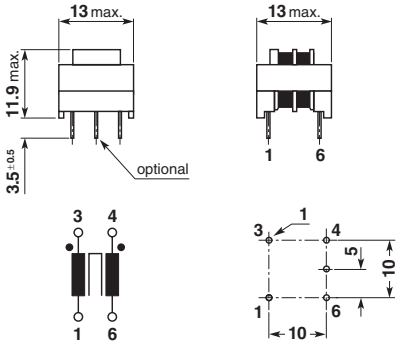
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Inductance tolerance:	+50 -30%
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Overtemperature of windings:	< 55°C
Approx. weight:	17 g
Pending Approval:	VDE

More technical data see p. 30.
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

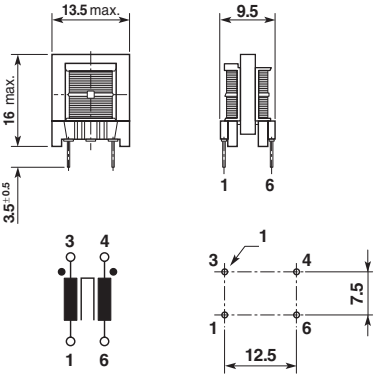
Voltage 250 Vac
Current 0.15 to 0.35 A

LINEAR VERSION

These chokes are fitted with two high-permeability E13 cores (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.



Dimensions in mm
Pins are tinned



42E13H2 **42E13V2**

TYPES

Horizontal mounting	Vertical mounting	Rated current A	Rated inductance mH	DC resistance (typical) Ω
42E13H2 01 00	42E13V2 01 00	0.15	39	4.4
42E13H2 02 00	42E13V2 02 00	0.2	27	2.2
42E13H2 02 01	42E13V2 02 01	0.25	18	1.45
42E13H2 03 01	42E13V2 03 01	0.35	10	0.73

Values per winding

Technical Data

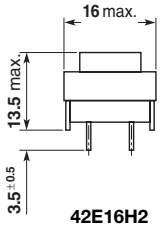
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 1 kHz, 1 Vac
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	1500 V -50 Hz, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C
Approx. weight:	13 g

The chokes are designed and tested in accordance with EN 138100; EN 60938
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

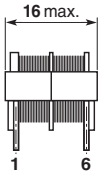
Voltage **250 Vac**
Current **0.25 to 0.6 A**

LINEAR VERSION

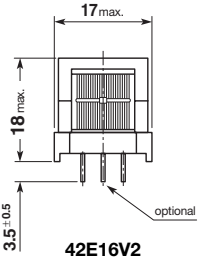
These chokes are fitted with two high-permeability E16 cores (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.



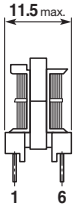
42E16H2

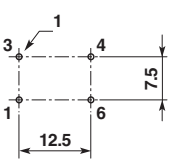


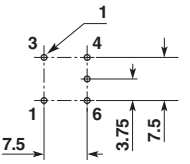
Dimensions in mm
Pins are tinned



42E16V2







TYPES

Horizontal mounting	Vertical mounting	Rated current A	Rated inductance mH	DC resistance (typical) Ω
42E16H2 02 01	42E16V2 02 01	0.25	39	2.5
42E16H2 03 01	42E16V2 03 01	0.35	27	1.5
42E16H2 04 00	42E16V2 04 00	0.4	18	1.1
42E16H2 06 00	42E16V2 06 00	0.6	10	0.7

Values per winding

Technical Data

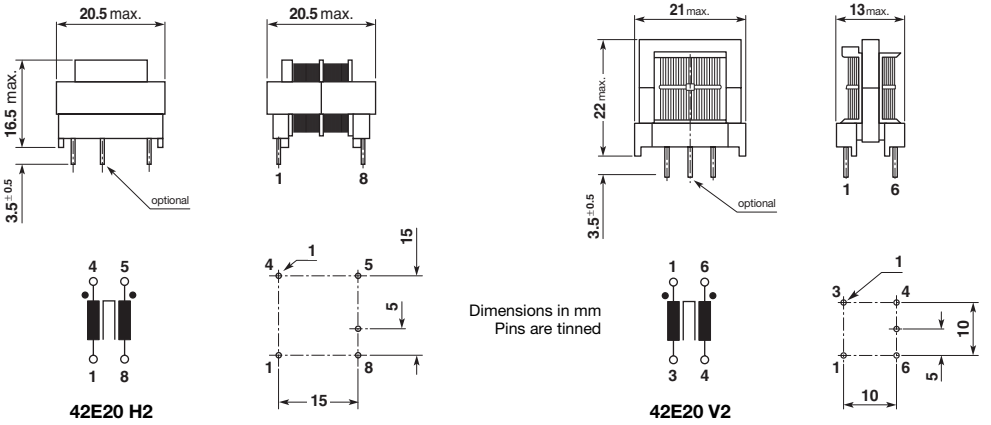
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 1 kHz, 1 Vac
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	1500 V -50 Hz, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C
Approx. weight:	13 g
Pending Approval:	VDE

The chokes are designed and tested in accordance with EN 138100; EN 60938
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

Voltage **250 Vac**
Current **0.2 to 1 A**

LINEAR VERSION

These chokes are fitted with two high-permeability E20 cores (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.



42E20 H2 **42E20 V2**

TYPES

Horizontal mounting	Vertical mounting	Rated current A	Rated inductance mH	DC resistance (typical) Ω
42E20H2 02 00	42E20V2 02 00	0.2	47	5.3
42E20H2 04 00	42E20V2 04 00	0.4	39	1.6
42E20H2 08 00	42E20V2 08 00	0.8	18	0.72
42E20H2 10 00	42E20V2 10 00	1	10	0.53

Values per winding

Technical Data

Rated current: referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance: at +20°C and 1 kHz, 1 Vac
Inductance tolerance: +50 -30%
Inductance loss: < 10% at DC initial loading with I^R

Testing voltage: 1500 V -50 Hz, 2 sec, winding to winding
Climatic category: DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance: at +20°C
Derating operating current: at +120°C ambient temperature I=0

Overtemperature of windings: < 55°C
Max. permissible temperature of windings: 115 °C
Approx. weight: 13 g

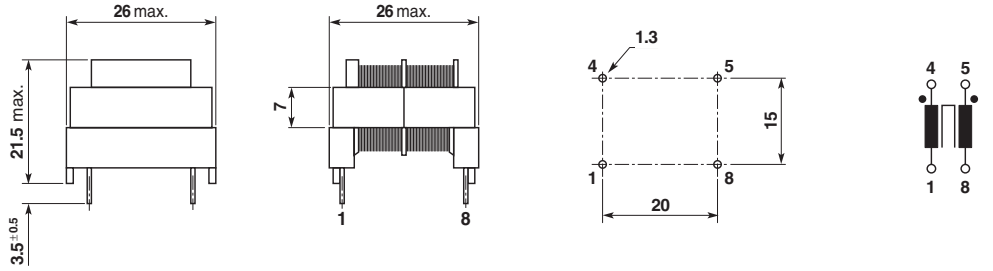
Pending Approval: VDE

The chokes are designed and tested in accordance with EN 138100; EN 60938
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

Voltage **250 Vac**
Current **0.4 to 1.5 A**

LINEAR VERSION

These chokes are fitted with two high-permeability E25 cores (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.



43E25 H2

Dimensions in mm
Pins are tinned

TYPES

Horizontal mounting	Rated current A	Rated inductance mH	DC resistance (typical) Ω
42E25H2 04 00	0.4	47	1.76
42E25H2 07 00	0.7	39	1.1
42E25H2 12 00	1.2	27	0.647
42E25H2 15 00	1.5	18	0.45

Values per winding

Technical Data

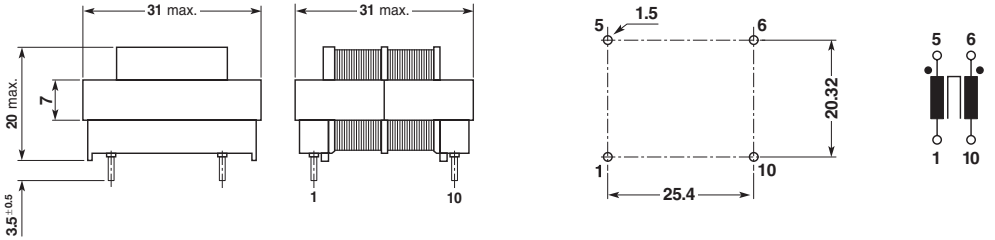
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 1 kHz, 1 Vac
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	1500 V -50 Hz, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C
Approx. weight:	13 g
Pending Approval:	VDE

The chokes are designed and tested in accordance with EN 138100; EN 60938
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

Voltage **250 Vac**
Current **1.5 to 1.8 A**

LINEAR VERSION

These chokes are fitted with two high-permeability E30 cores (ferrite). They are mainly used in devices equipped with switched-mode power supplies, and in filters designed to prevent both the spread of parasitic noise within the device, and the effects of line noise on the device itself.



42E30 H2

Dimensions in mm
Pins are tinned

TYPES

Horizontal mounting	Rated current A	Rated inductance mH	DC resistance (typical) Ω
42E30H2 15 00	1.5	33	0.56
42E30H2 18 00	1.8	27	0.4

Values per winding

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 1 kHz, 1 Vac
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	1500 V -50 Hz, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C
Approx. weight:	13 g
Pending Approval:	VDE

The chokes are designed and tested in accordance with EN 138100; EN 60938
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

These chokes are made of a single winding over a high permeability toroid core (ferrite) and show a high inductance at zero or low current, but a low inductance at the nominal current, because of the core saturation.

Such chokes are mainly used as line filters and noise suppression chokes in appliances where an inductive load is driven by a phase controlled device such as triacs, thyristors etc (e g motors).
When this device swítches on, the current aims to rise quickly with a verv steep front, so generating a high number of harmonics and thus a strong electrical interference of symmetncal type, i e appearing between phase and neutral.

The high choke inductance at the start of the current flow limits the current pulse steepness and so the harmonics, while as the core saturation occurs, its effect on the circuit becomes negligible: the inductive load itself contributes to reduce the disturbances.

The filtering effect is more effective if the choke is placed close to the interference source and it is also enhanced by adding a shunt capacitor.

Ces selfs sont réalisées à partir d'un bobinage unique sur un noyau à haute perméabilité (ferrite).
Ils presentent une forte valeur d'inductance au courant nul (mise sous tension), alors que l'inductance est faible sous courant nominal, par la suite de la saturation du noyau.

Ce type de self est surtout utilisé comme filtre de ligne et pour le déparasitage dans les applications où une charge inductive est commandée par un dispositif de contrôle de phase à triacs, thyristors, etc (par ex. moteurs). Lorsque le dispositif est déclanché, le courant tend à augmenter très rapidement, ce qui génère un grand nombre d'harmoniques et donc des fortes interférences électriques de type symétrique, c'est à dire apparaissant entre la phase et le neutre.

Lorsque le courant commence s`écouler, la forte valeur d'inductance limite les phénomènes oscillatoires et donc la création d'harmoniques; lorsque le courant monte, la self se sature et son effet sur le circuit devient négligeable.

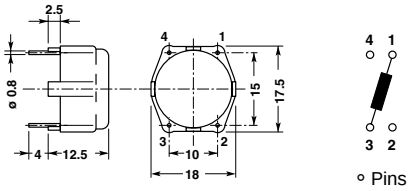
L'efficacité de filtrage est améliorée lorsque la self est proche de la source de perturbation, ainsi que par l'addition d'un condensateur; même la charge inductive contribue directement à réduire les interférences.

CASE VERSION

Voltage **250 Vac**
Current **0.5 to 1 A**

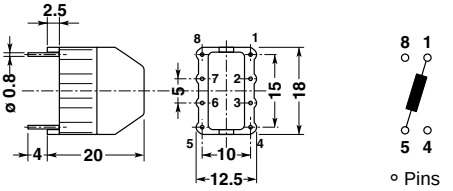
These chokes are fitted with high-permeability toroid core (ferrite). They are used as suppressor noises (line filter) in appliances where an inductive load is fed through thyristors or triacs (e g motors).

Dimensions in mm
Pins are tinned



43H17
Horizontal mounting

Optional: Pins out 1 - 2
Blind pins 4 - 3



43V20
Vertical mounting

Optional: Pins out 2 - 6
Blind pins 3 - 7

TYPES

Horizontal	Vertical	Rated current	Rated inductance	DC resistance (typical)
Code	Code	A	mH	m Ω
43H17 05 00	43V20 05 00	0.5	15	840
43H17 10 00	43V20 10 00	1	20	280

Other types can be supplied according to customer's specifications. They can also be made without case: the first five code characters change to 33H12 for horizontal types; 33V12 for vertical types.

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	+50 -30%
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Approx. weight:	10 g

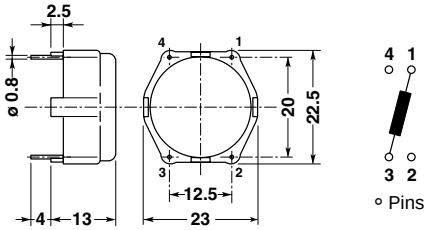
The chokes are designed and tested in accordance with EN 138100; EN 60938-1.
The cases are of flame-retardant plastic material in accordance with UL 94V-0

CASE VERSION

Voltage **250 Vac**
Current **1.5 to 3 A**

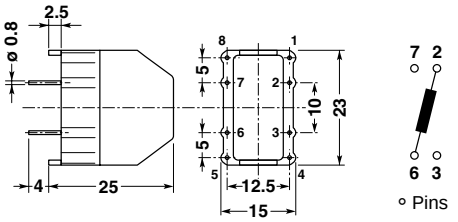
These chokes are fitted with high-permeability toroid core (ferrite). They are used as suppressor noises (line filters) in appliances where an inductive load is fed through thyristors or triacs (e g motors).

Dimensions in mm
Pins are tinned



43H22
Horizontal mounting

Optional: Pins out 1 - 2
Blind pins 4 - 3



43V25
Vertical mounting

Optional: Pins out 1 - 5
Blind pins 8 - 4

TYPES

Horizontal	Vertical	Rated current	Rated inductance	DC resistance (typical)
Code	Code	A	mH	m Ω
43H22 15 00	43V25 15 00	1.5	15	220
43H22 30 00	43V25 30 00	3	4.7	650

Other types can be supplied according to customer's specifications. They can also be made without case: the first five code characters change to 33H16 for horizontal types; to 33V16 for vertical types.

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	+50 -30%
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Approx. weight:	12 g

The chokes are designed and tested in accordance with EN 138100; EN 60938-1.
The cases are of flame-retardant plastic material in accordance with UL 94V-0

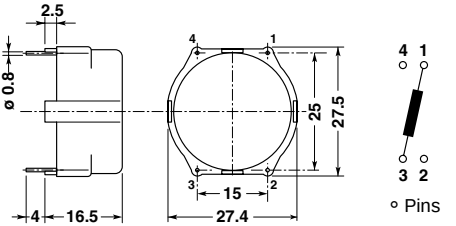
Saturable Noise Suppression Chokes

Voltage **250 Vac**
Current **2.5 to 4 A**

CASE VERSION

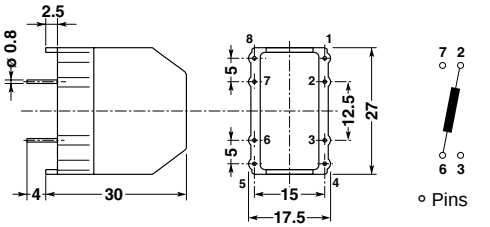
These chokes are fitted with high-permeability toroid core (ferrite). They are used as suppressor noises (line filters) in appliances where an inductive load is fed through thyristors or triacs (e g motors).

Dimensions in mm
Pins are tinned



43H27
Horizontal mounting

Optional: Pins out 1 - 2
Blind pins 4 - 3



43V30
Vertical mounting

Optional: Pins out 1 - 5
Blind pins 8 - 4

TYPES

Horizontal	Vertical	Rated current	Rated inductance	DC resistance (typical)
Code	Code	A	mH	m Ω
43H27 25 00	43V30 25 00	2.5	10	150
43H27 40 00	43V30 40 00	4	4.7	65

Other types can be supplied according to customer's specifications. They can also be made without case: the first five code characters change to 33H23 for horizontal types; to 33V23 for vertical types.

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	+50 -30%
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Approx. weight:	16 g

The chokes are designed and tested in accordance with EN 138100; EN 60938-1.
The cases are of flame-retardant plastic material in accordance with UL 94V-0

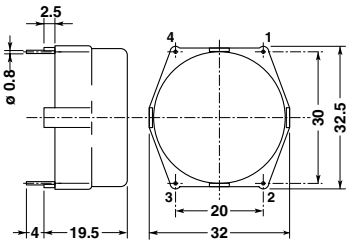
Saturable Noise Suppression Chokes

Voltage **250 Vac**
Current **4 to 10 A**

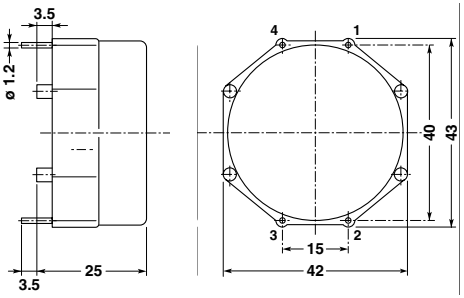
CASE VERSION

These chokes are fitted with high-permeability toroid core (ferrite). They are used as suppressor noises (line filters) in appliances where an inductive load is fed through thyristors or triacs (e g motors).

Dimensions in mm
Pins are tinned



43H32
Horizontal mounting



43H42
Horizontal mounting

Optional: Pins out 1 - 2
Blind pins 4 - 3

TYPES

Code	Rated current A	Rated inductance mH	DC resistance (typical) m Ω	Approx. weight g
43H32 40 00	4	10	80	34
43H32 80 00	8	2.2	16	34
43H42 80 00	8	4.7	20	63
43H42 A0 00	10	2.2	23	63

Other types can be supplied according to customer's specifications. They can also be made without case: the first five code characters change as follow: 33H25 instead of 43H32; 33H31 instead of 43H42.

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	+50 -30%
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)

The chokes are designed and tested in accordance with EN 138100; EN 60938-1.
The cases are of flame-retardant plastic material in accordance with UL 94V-0

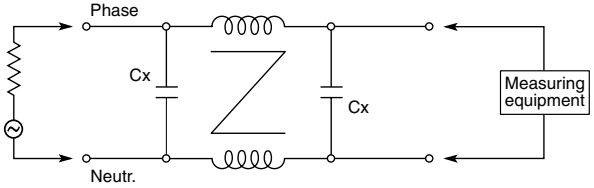
Iron powder toroidal core chokes with single or double winding are primarily used in the applications where a significant attenuation of the symmetrical or differential interferences is required, i e between phase and neutral, together with a large independence of the inductance value from the current.

The interferences mentioned are typically produced by phase controlled electronic devices like triacs, thyristors, etc.
In the diagram, a typical power supply filter is shown, with a double winding IP core choke and the Cx capacitors:

The symmetrical interference suppression is granted if the two windings are connected in series, i e in such a way that the corresponding flux are added; thus also the symmetrical interferences generate a flux on both the windings which is added, and the full inductance is operative. In this case the inductance value is approx four times the single winding value.

In practice, the most communly used IP core chokes are realized with only one winding, with one or two capacitors, but the attenuation is clearly lower.
These filters are effective in spite of the strong magnetic field because the choke magnetisation, and so the inductance, is slightly dependent on the coil current.

If an effective filtering of symmetrical and asymmetrical interferences is required, both current-compensated and IP chokes can be used.



Ces selfs à noyau poudre de fer avec simple ou double bobinage, sont généralement utilisées dans les applications où l'on demande un atténuation significative des interférences symétriques ou différentielles, c'est a dire entre la phase et le neutre, ainsi qu'une grande indépendance de la valeur d'inductance par rapport au courant.

Les interférences précédemment citées sont typiquement produites par les contrôleurs électroniques de phase tels que les triacs, thyristors, etc.
Le schéma montre un filtre typiquement utilisé sur les modules d'alimentation, avec un double bobinage sur un noyau poudre de fer associé à des condensateurs Cx:

La suppression des interférences symétriques est assurée si les deux bobinages sont connectés en séries, c'est a dire de façon à ce que les flux correspondants s'additionnent; alors, les interférences symétriques mêmes génèrent un flux sur les deux bobinages, qui s'additionne, permettant d'obtenir la pleine valeur d'inductance. Dans ce cas là, la valeur d'inductance est près de 4 fois la valeur d'un bobinage.
En pratique, la self à noyau poudre de fer avec un seul bobinage, associée à un ou deux condensateurs, est la plus utilisée, mais les valeurs d'atténuation des interférences sont clairement inférieures.
Ces filtres fonctionnent en dépit du fort champ magnétique, car la magnétisation de la self ainsi que l'inductance ne sont que faiblement dépendantes du courant du bobinage.

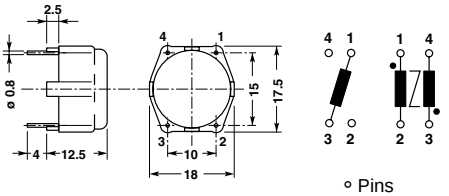
Si un filtrage efficace des perturbations symétriques et asymétriques est demandé, on peut utiliser une self à courant compensé associée à une self noyau poudre de fer.

CASE VERSION

Voltage 250 Vac
Current 0.3 to 1.5 A

These chokes are fitted with toroid core in iron powder. They have large independence of inductance value from current. They are mainly used as line filters and noise suppressors in switched-mode power supplies, and as storage chokes; double chokes can also be used as transformer.

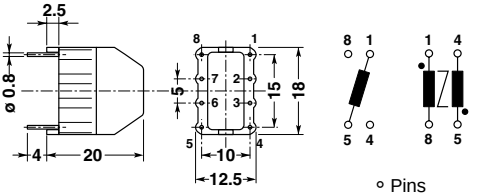
Dimensions in mm
Pins are tinned



∘ Pins
• Start of winding

45H17 Single choke
44H17 Double chokes
Horizontal mounting

Optional: Pins out 1 - 2
Blind pins 4 - 3



∘ Pins
• Start of winding

45V20 Single choke
44V20 Double chokes
Vertical mounting

Optional: Pins out 2 - 6
Blind pins 3 - 7

TYPES

Horizontal Code	Vertical Code	Choke	Rated current per winding A	Rated inductance per winding µH	DC resistance per winding (typical) m Ω
45H17 03 00	45V20 03 00	single	0.3	300	1080
45H17 05 00	45V20 05 00	single	0.5	160	410
45H17 10 00	45V20 10 00	single	1	100	200
45H17 15 00	45V20 15 00	single	1.5	70	110
44H17 03 00	44V20 03 00	double	0.3	78	550
44H17 05 00	44V20 05 00	double	0.5	44	215
44H17 10 00	44V20 10 00	double	1	30	110
44H17 15 00	44V20 15 00	double	1.5	24	65

Other types can be supplied according to customer's specifications. They can also be made without case: the first five code characters change to 35H13R (horizontal) and 35V13R (vertical) for single choke types; to 34H13R (horizontal) and 34V13R (vertical) for double choke types.

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C - 10 kHz, 0.1 mA
Inductance tolerance:	± 20%
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Approx. weight:	7 g

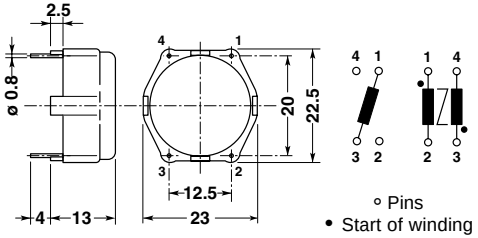
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

CASE VERSION

Voltage **250 Vac**
Current **0.3 to 2 A**

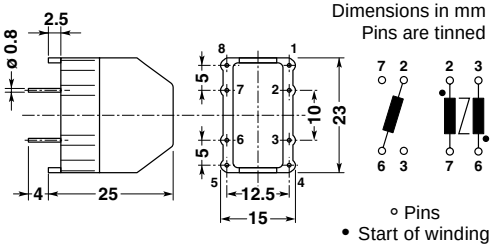
These chokes are fitted with toroid core in iron powder. They have large independence of inductance value from current. They are mainly used as line filters and noise suppressors in switched-mode power supplies, and as storage chokes; double chokes can also be used as transformer.

Dimensions in mm
Pins are tinned



45H22 Single choke
44H22 Double chokes
Horizontal mounting

Optional: Pins out 1 - 2
Blind pins 4 - 3



45V25 Single choke
44V25 Double chokes
Vertical mounting

Optional: Pins out 1 - 5
Blind pins 8 - 4

TYPES

Horizontal Code	Vertical Code	Choke	Rated current per winding A	Rated inductance per winding µH	DC resistance per winding (typical) m Ω
45H22 03 00	45V25 03 00	single	0.3	1100	2300
45H22 05 00	45V25 05 00	single	0.5	750	1000
45H22 10 00	45V25 10 00	single	1	250	360
45H22 20 00	45V25 20 00	single	2	80	100
44H22 03 00	44V25 03 00	double	0.3	300	1200
44H22 05 00	44V25 05 00	double	0.5	240	560
44H22 10 00	44V25 10 00	double	1	73	200
44H22 20 00	44V25 20 00	double	2	28	60

Other types can be supplied according to customer's specifications. They can also be made without case: the first five code characters change to 35H17 (horizontal) and 35V17 (vertical) for single choke types; to 34H17 (horizontal) and 34V17 (vertical) for double choke types.

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C - 10 kHz, 0.1 mA
DC resistance:	at +20°C
Inductance tolerance:	± 20%
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Approx weight:	12 g

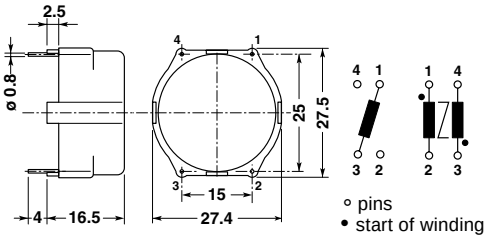
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

Voltage **250 Vac**
Current **0.5 to 3 A**

CASE VERSION

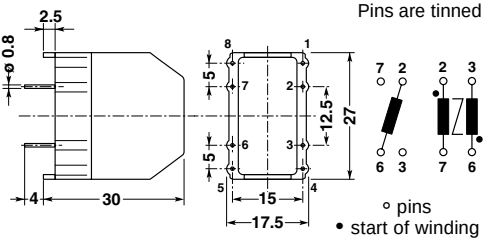
These chokes are fitted with toroid core in iron powder. They have large independence of inductance value from current. They are mainly used as line filters and noise suppressors in switched-mode power supplies, and as storage chokes; double chokes can also be used as transformer.

Dimensions in mm
Pins are tinned



45H27 Single choke
44H27 Double chokes
Horizontal mounting

Optional: Pins out 1 - 2
Blind pins 4 - 3



45V30 Single choke
44V30 Double chokes
Vertical mounting

Optional: Pins out 1 - 5
Blind pins 8 - 4

TYPES

Horizontal Code	Vertical Code	Choke	Rated current per winding A	Rated inductance per winding µH	DC resistance per winding (typical) m Ω
45H27 05 00	45V30 05 00	single	0.5	2400	2000
45H27 10 00	45V30 10 00	single	1	750	700
45H27 20 00	45V30 20 00	single	2	200	180
45H27 30 00	45V30 30 00	single	3	80	72
44H27 05 00	44V30 05 00	double	0.5	870	1200
44H27 10 00	44V30 10 00	double	1	260	410
44H27 20 00	44V30 20 00	double	2	60	100
44H27 30 00	44V30 30 00	double	3	30	45

Other types can be supplied according to customer's specifications. They can also be made without case: the first five code characters change to 35H20 (horizontal) and 35V20 (vertical) for single choke types; to 34H20 (horizontal) and 34V20 (vertical) for double choke types.

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C - 10 kHz, 0.1 mA
Inductance tolerance:	± 20%
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Approx weight:	20 g

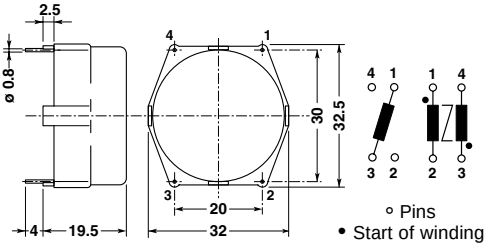
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

Voltage **250 Vac**
Current **1 to 6 A**

CASE VERSION

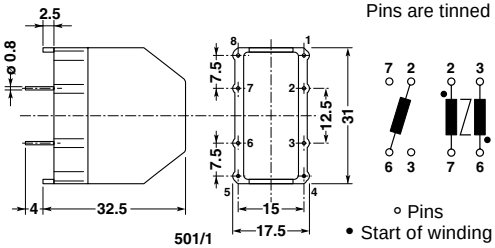
These chokes are fitted with toroid core in iron powder. They have large independence of inductance value from current. They are mainly used as line filters and noise suppressors in switched-mode power supplies, and as storage chokes; double chokes can also be used as transformer.

Dimensions in mm
Pins are tinned



45H32 Single choke
44H32 Double chokes
Horizontal mounting

Optional: Pins out 1 - 2
Blind pins 4 - 3



501/1

45V32 Single choke
44V32 Double chokes
Vertical mounting

Optional: Pins out 1 - 5
Blind pins 8 - 4

TYPES

Horizontal	Vertical	Choke	Rated current per winding	Rated inductance per winding	DC resistance per winding (typical)
Code	Code		A	µH	m Ω
45H32 10 00	45V32 10 00	single	1	1000	850
45H32 20 00	45V32 20 00	single	2	300	230
45H32 40 00	45V32 40 00	single	4	100	70
45H32 60 00	45V32 60 00	single	6	60	35
44H32 10 00	44V32 10 00	double	1	340	500
44H32 20 00	44V32 20 00	double	2	88	130
44H32 40 00	44V32 40 00	double	4	44	45
44H32 60 00	44V32 60 00	double	6	23	20

Other types can be supplied according to customer's specifications. They can also be made without case: the first five code characters change to 35H24 (horizontal) and 35V24 (vertical) for single choke types; to 34H24 (horizontal) and 34V24 (vertical) for double choke types.

Technical Data

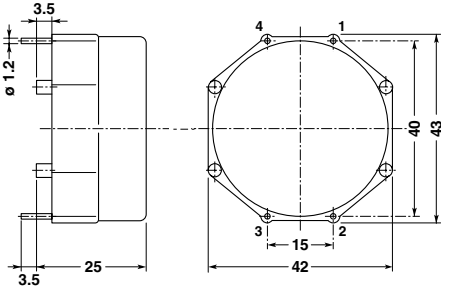
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C -10 kHz, 0.1 mA
Inductance tolerance:	± 20%
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Approx. weight:	34 g

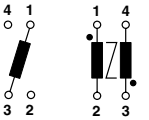
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

CASE VERSION

Voltage **250 Vac**
Current **1 to 10 A**

These chokes are fitted with toroid core in iron powder. They have large independence of inductance value from current. They are mainly used as line filters and noise suppressors in switched-mode power supplies, and as storage chokes; double chokes can also be used as transformer.





∘ Pins
• Start of winding

45H42 Single choke
44H42 Double chokes
Horizontal mounting

Dimensions in mm
Pins are tinned

Optional: Pins out 1 - 2
Blind pins 4 - 3

TYPES

Code	Choke	Rated current per winding A	Rated inductance per winding µH	DC resistance per winding (typical) m Ω
45H42 10 00	single	1	2800	1650
45H42 20 00	single	2	1200	550
45H42 40 00	single	4	400	160
45H42 60 00	single	6	190	70
45H42 A0 00	single	10	100	28
44H42 10 00	double	1	880	910
44H42 20 00	double	2	450	320
44H42 40 00	double	4	150	95
44H42 60 00	double	6	70	40
44H42 A0 00	double	10	40	18

Other types can be supplied according to customer's specifications. They can also be made without case: the first five code characters change to 35H33 for single choke types; 34H33 for double choke types.

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C - 10 kHz, 0.1 mA
Inductance tolerance:	± 20%
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Approx weight:	63 g

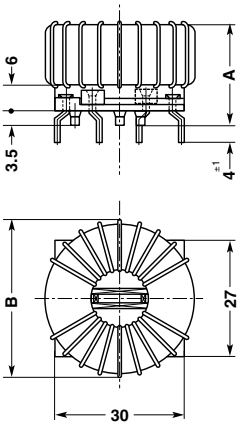
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

Voltage **250 Vac**
Current **4 to 10 A**

SOCKET VERSION
Horizontal mounting

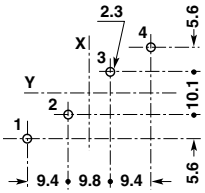
These chokes are fitted with toroid core in iron powder (IP). They have large independence of inductance value from current. They are mainly used as line filters and noise suppressors in switched-mode power supplies and can also be used as transformer.

Dimensions in mm
Pins are tinned

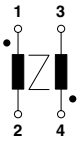


34H33 TA
Horizontal mounting

XY = core axes



viewed on
component side



◦ Pins
• Start of winding

TYPES

Code	Rated current per winding A	Rated inductance per winding µH	DC resistance per winding (typical) m Ω	Dimensions - mm	
				A max.	B max.
34H33 40 00 TA	4	150	95	28	40
34H33 60 00 TA	6	70	40		
34H33 A0 00 TA	10	40	18		

Table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

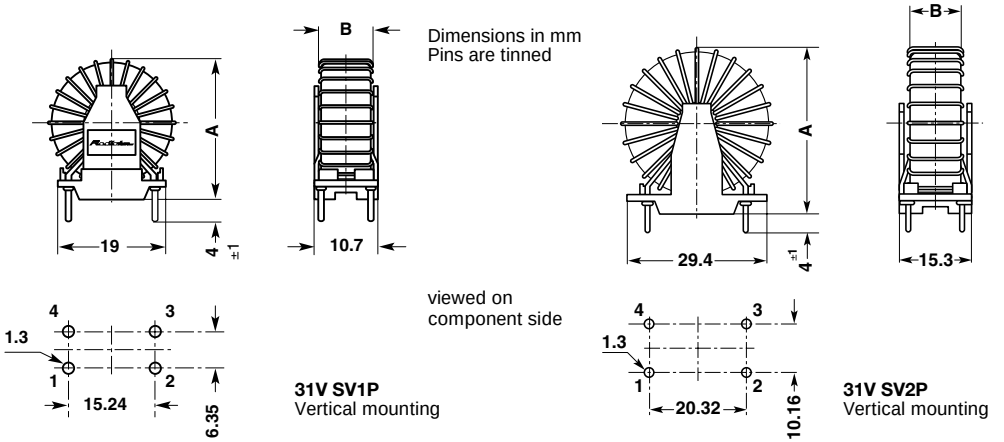
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C - 10 kHz, 0.1 mA
Inductance tolerance:	± 20%
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to + 125°C; humidity cat. C)
Approx weight:	60 g

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The socket is of flame-retardant plastic material in accordance with UL 94V-0

SOCKET VERSION
Vertical mounting

Voltage 250 Vac
Current 0.5 to 2.3 A

These single winding chokes are fitted with core in iron powder (IP). They are suitable for a large number of applications: power factor correction circuits on SMPS, power supplies such as full or half bridge, forward converters, regulators etc., differential mode inductor in EMI filters, noise suppression chokes in light dimmers, power control of small motor in domestic appliances.



TYPES

Code	Rated current A	Rated inductance mH	DC resistance (typical) m Ω	Dimensions - mm A max.	Dimensions - mm B max.	Overall dimensions on PCB max.	Pins out	Blind Pins	Approx. weight g	Approval
31V13R 05 00 SV1P	0.5	1.7	1300	20	8	19x11	1 - 3	2 - 4	7	
31V17 09 00 SV2P	0.9	2.1	820	24	9.5	29.5x16	1 - 3	2 - 4	14	
31V17D 14 00 SV2P	1.4	1.5	450	24	12	29.5x16	1 - 3	2 - 4	17	
31V20 15 00 SV2P	1.5	1.8	550	27	12	29.5x16	1 - 3	2 - 4	24	VDE
31V24 14 00 SV2P	1.4	2.1	330	33	13	33x16	1 - 3	2 - 4	34	VDE
31V24 23 00 SV2P	2.3	1.3	230	33	12.5	33x16	1 - 3	2 - 4	34	

Table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	± 20%
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)

VDE Approval VDE

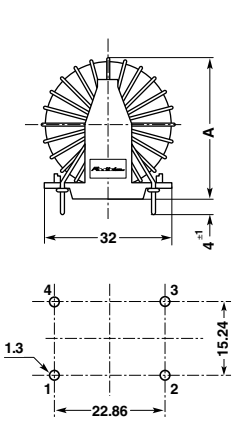
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The sockets are of flame-retardant plastic material in accordance with UL 94V-0

SOCKET VERSION
Vertical mounting

Voltage 250 Vac
Current 2.3 to 4.5 A

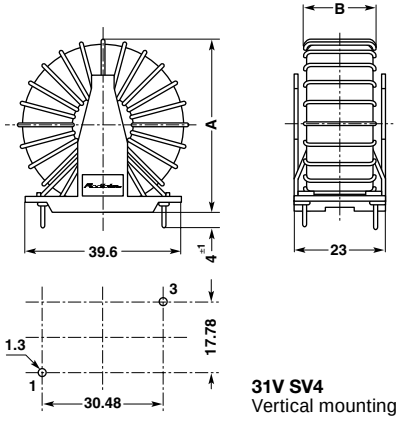
These single winding chokes are fitted with core in iron powder (IP). They are suitable for a large number of applications: power factor correction circuits on SMPS, power supplies such as full or half bridge, forward converters, regulators etc., differential mode inductor in EMI filters, noise suppression chokes in light dimmers, power control of small motor in domestic appliances.

Dimensions in mm
Pins are tinned



31V SV3
31V SV3P
Vertical mounting

viewed on
component side



31V SV4
Vertical mounting

TYPES

Code	Rated current A	Rated inductance mH	DC resistance (typical) m Ω	Dimensions - mm A max.	Dimensions - mm B max.	Overall dimensions on PCB max.	Pins out	Blind Pins	Approx. weight g	Approval
31V27 23 00 SV3P	2.3	1.3	210	36	12.5	36 X 21	1 - 3	2 - 4	45	
31V32 23 00 SV3P	2.3	2.2	280	42	12	42 X 21	1 - 3	2 - 4	54	VDE
31V33 23 00 SV3P	2.3	2.2	280	42	11.5	42 X 21	1 - 3	2 - 4	50	
31V32 32 00 SV3	3.2	1.5	185	41	14	41 X 21	1 - 3	Not	55	
31V33 32 00 SV3	3.2	2.0	215	43	16	43 X 21	1 - 3	Not	75	VDE
31V38 45 00 SV4	4.5	1.3	140	48	18	48 X 23	1 - 3	Not	103	VDE

Table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

Rated inductance: at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance: ± 20%
Rated current: referred to 250 V-50 Hz and +60°C ambient temperature
DC resistance: at +20°C
Climatic category: DIN GKC (-40 to +125°C; humidity cat. C)

VDE Approval VDE

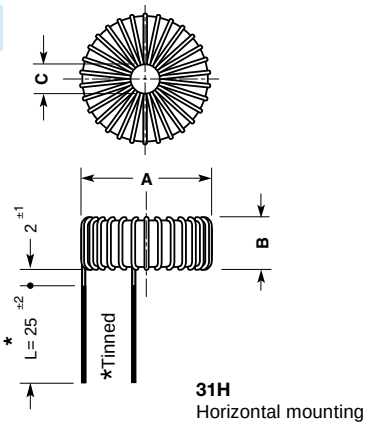
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The sockets are of flame-retardant plastic material in accordance with UL 94V-0

OPEN VERSION

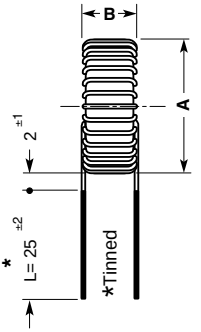
Voltage 250 Vac
Power 100 to 4000 W

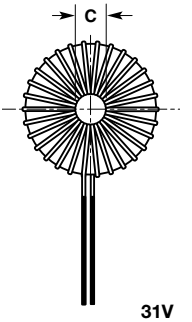
These chokes are fitted with toroid core in iron powder having the permeability and magnetic saturation caracteristic required for noise suppression in light intensity control of electric bulbs and in power control of small motors in domestic appliances. Such control devices are usually called dimmers.
A capacitor value for each inductance is suggested as reference for use in standard dimmer circuits.

Dimensions in mm



31H
Horizontal mounting





31V
Vertical mounting

Dimensions in mm

Other terminal lengths on request

Other terminal lengths on request

Technical Data

Power range:	the values give power limits for connectable electrical bulb
Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	Standard ± 20% - optional ± 10%
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)

The chokes are designed and tested in accordance with EN 138100; EN 60938-1

See types p. 51

Voltage 250 Vac
Power 100 to 4000 W

OPEN VERSION

TYPES

Horizontal Code	Vertical Code	Power range W	Rated inductance mH	Rated current A	Suppression capacitor nF	DC resistance (typical) m Ω	Dimensions - mm A max.	B max.	C min.	Approx. weight g	Approv.
31H13R 05 00	31V13R 05 00	30-100	1.7	0.5	33	1340	16	8	4.5	4	
31H13 07 00	31V13 07 00	30-150	1.9	0.7	33	980	16	13	4.5	8	VDE
31H17 09 00	31V17 09 00	30-200	2.1	0.9	33	820	20	9.5	5	10	
31H17D14 00	31V17D 14 00	30-300	1.5	1.4	68	450	20	12	5	13	
31H20 15 00	31V20 15 00	30-300	1.8	1.5	68	550	23	12	9	20	VDE
31H24 14 00	31V24 14 00	30-300	2.1	1.4	68	330	29	13	8	30	VDE
31H33 18 00	31V33 18 00	30-400	2.3	1.8	100	380	37	12	12	42	VDE
31H24 23 00	31V24 23 00	60-500	1.3	2.3	100	230	28.5	12.5	8	30	
31H27 23 00	31V27 23 00	60-500	1.3	2.3	100	210	32	12.5	7	40	
31H32 23 00	31V32 23 00	60-500	2.2	2.3	100	280	38	12	11	49	VDE
31H33 23 00	31V33 23 00	60-500	2.2	2.3	100	280	38	11.5	13	45	
31H32 32 00	31V32 32 00	150-700	1.5	3.2	150	185	37	14	11	50	
31H33 32 00	31V33 32 00	150-700	2.0	3.2	150	215	39	16	11	70	VDE
31H38 45 00	31V38 45 00	200-1000	1.3	4.5	220	140	44	18	15	96	VDE
31H38 A8 00	31V38 A8 00	350-4000	0.4	18	470	30	47	30	9	200	

VDE Approval VDE

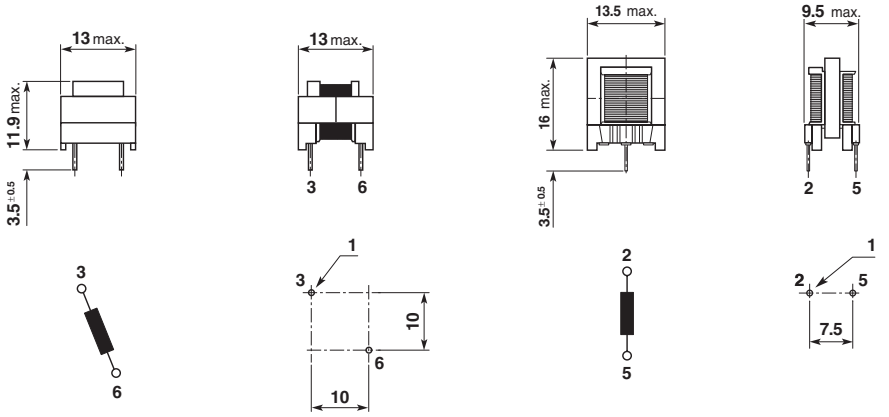
The table shows the standard types. Other types can be supplied according to customer's specifications.

See technical data p. 50

Voltage 250 Vac
Current 0.15 to 0.6 A

LINEAR VERSION

These single winding chokes are made with gapped ferrite core E13 size. They are suitable for a large number of applications: power factor correction circuits, noise suppression chokes and resonant colils.



43E13 H **43E13 V**

Dimensions in mm
Pins are tinned

TYPES

Horizontal mounting	Vertical mounting	Rated current A	Rated inductance mH	DC resistance (typical) Ω
43E13H 01 01	43E13V 01 01	0.15	15	19
43E13H 02 00	43E13V 02 00	0.2	6.8	7.2
43E13H 03 01	43E13V 03 01	0.35	2.7	3.1
43E13H 06 00	43E13V 06 00	0.6	1	1.3

Table shows the standard types. Other types can be supplied according to customer's specifications.
Drawings show the standard pins; other pins arrangements can be supplied.
See types 67E13H (p. 97-a); 67E13V (p. 97-1).

Technical Data

Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	± 20%
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)

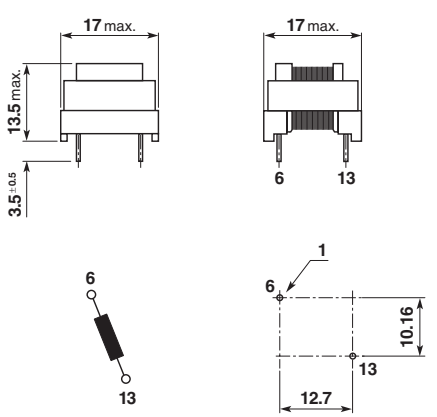
The chokes are designed and tested in accordance with EN 138100; EN 60938
The sockets are of flame-retardant plastic material in accordance with UL 94V-0

Voltage 250 Vac
Current 0.5 to 1.5 A

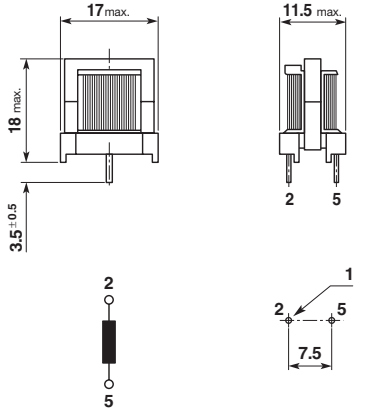
LINEAR VERSION

These single winding chokes are made with gapped ferrite core E16 size. They are suitable for a large number of applications: power factor correction circuits, noise suppression chokes and resonant colils.

Dimensions in mm
Pins are tinned



43E16 H



43E16 V

TYPES

Horizontal mounting	Vertical mounting	Rated current A	Rated inductance mH	DC resistance (typical) Ω
43E16H 05 00	43E16V 05 00	0.5	4.7	2.4
43E16H 06 00	43E16V 06 00	0.6	3.3	1.56
43E16H 10 00	43E16V 10 00	1	1	0.7
43E16H 15 00	43E16V 15 00	1.5	0.39	0.26

Table shows the standard types. Other types can be supplied according to customer's specifications.
Drawings show the standard pins; other pins arrangements can be supplied.
See types 67E16H (p. 98-1); 67E16V (p. 98-b).

Technical Data

Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	± 20%
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)

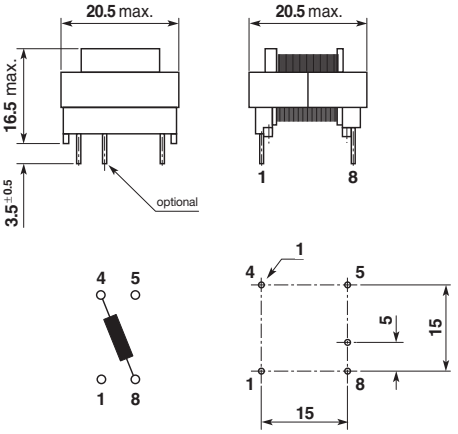
The chokes are designed and tested in accordance with EN 138100; EN 60938
The sockets are of flame-retardant plastic material in accordance with UL 94V-0

Voltage 250 Vac
Current 0.4 to 1.5 A

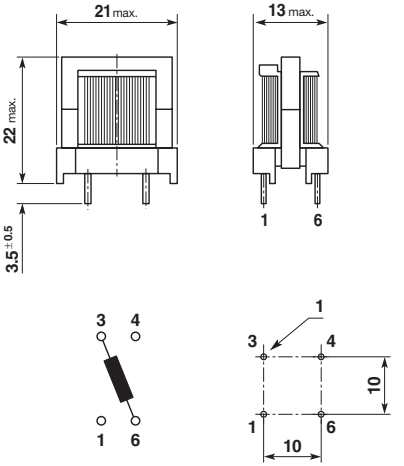
LINEAR VERSION

These single winding chokes are made with gapped ferrite core E20 size. They are suitable for a large number of applications: power factor correction circuits, noise suppression chokes and resonant colils.

Dimensions in mm
Pins are tinned



43E20 H



43E20 V

TYPES

Horizontal mounting	Vertical mounting	Rated current A	Rated inductance mH	DC resistance (typical) Ω
43E20H 04 00	43E20V 04 00	0.4	10	3.95
43E20H 05 00	43E20V 05 00	0.5	4.7	1.9
43E20H 10 00	43E20V 10 00	1	2.2	1.02
43E20H 15 00	43E20V 15 00	1.5	1	0.42

Table shows the standard types. Other types can be supplied according to customer's specifications.
Drawings show the standard pins; other pins arrangements can be supplied.
See types 67E20H (p. 99-c); 67E20V (p. 99-3).

Technical Data

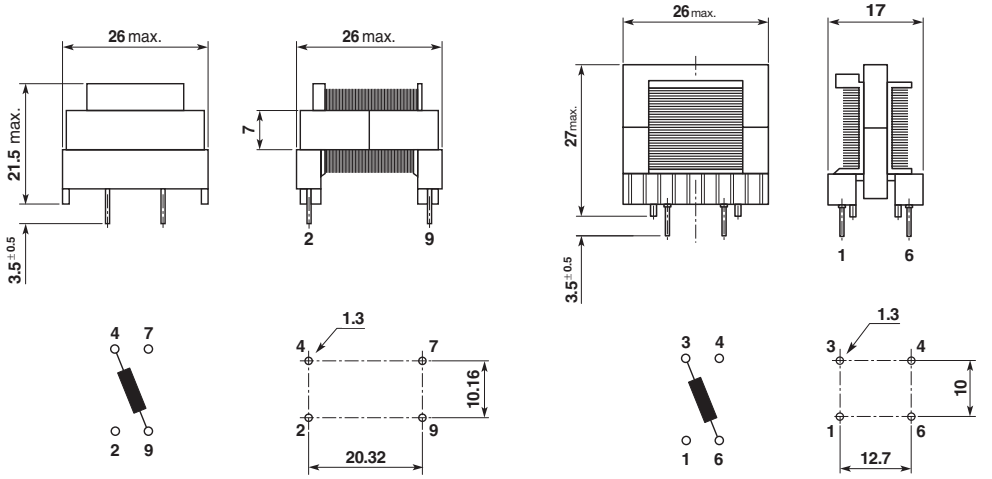
Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	± 20%
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)

The chokes are designed and tested in accordance with EN 138100; EN 60938
The sockets are of flame-retardant plastic material in accordance with UL 94V-0

Voltage 250 Vac
Current 0.6 to 1.5 A

LINEAR VERSION

These single winding chokes are made with gapped ferrite core E25 size. They are suitable for a large number of applications: power factor correction circuits, noise suppression chokes and resonant colils.



43E25 H **43E25 V**

Dimensions in mm
Pins are tinned

TYPES

Horizontal mounting	Vertical mounting	Rated current A	Rated inductance mH	DC resistance (typical) Ω
43E25H 06 00	43E25V 06 00	0.6	18	3.18
43E25H 08 00	43E25V 08 00	0.8	10	1.9
43E25H 12 00	43E25V 12 00	1.2	4.7	1
43E25H 15 00	43E25V 15 00	1.5	1.8	0.48

Table shows the standard types. Other types can be supplied according to customer's specifications.
Drawings show the standard pins; other pins arrangements can be supplied.
See type 67E25H.

Technical Data

Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	± 20%
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Approx. weight:	26 g

The chokes are designed and tested in accordance with EN 138100; EN 60938
The sockets are of flame-retardant plastic material in accordance with UL 94V-0

Electrical equipment often originates asymmetrical interferences, appearing between power supply cords and ground, wich flow to the ground through the earth conductor of the equipment.

For interference suppression, the use of capacitors is often insufficient, and the current-compensated chokes which could be alternatively used are too big and heavy, as the electrical consumption of the appliances can be up to 1kW.

Thus an earth line choke can effectively be used, inserted along the ground line of the equipment.

EN 138100 safety norms require the windings of these coils to have a copper section not less than the section of the earth line. They also dictate that, with a load greater than 4 times the nominal current, voltage drop must not exceed 4V. To prevent errors and misapplication, only 4 nominal current values have been approved, with their relative wire sections: 16 A for 1 sq mm - 20 A for 1.5 sq mm - 27 A for 2.5 sq mm - 36 A for 4 sq mm.

During nominal operation the earth line choke only takes the dispersion current (<3.5 mA) and low magnetization therefore allows high permeability (ferrite), small-sized cores to be used.

Les équipements électriques génèrent souvent des interférences asymétriques qui apparaissent entre les lignes d'alimentation et la terre, qui s'ecoulent vers la terre à travers le conducteur de l'appareil.

Pour la suppression des interférences, l'utilisation de condensateurs est souvent insuffisante et les selfs à courant compensé qui pourraient être alternativement utilisées seraient trop grosses et lourdes, étant donné que la consommation électrique peut excéder 1 kW.

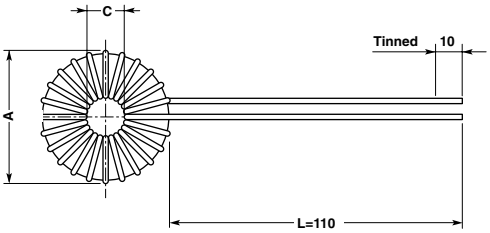
Ainsi une selfs de terre peut efficacement être utilisée, insérée le long la ligne de terre de l'appareil.

La norme de sécurité (EN 138100) prescrit que la section du fil de cuivre de bobinage ne doit pas être inférieure à celle de la ligne de terre; elle prescrit en outre que sous une charge de 4 fois le courant nominal, la chute de tension ne doit pas excéder 4V. Afin d'éviter toute confusion et des applications incorrects, seulement quatre valeurs de courant et leur section correspondante sont homologuées: 16 A pour 1 mm^2 - 20 A pour 1,5 mm^2 - 27 A pour 2,5 mm^2 - 36 A pour 4 mm^2.

Dans des conditions normales d'utilisation, la self de terre est uniquement traversée par le courant de dispersion (<3,5 mA); la basse magnétisation résultante permet donc l'utilisation de noyau à haute perméabilité (ferrite) et de taille réduite.

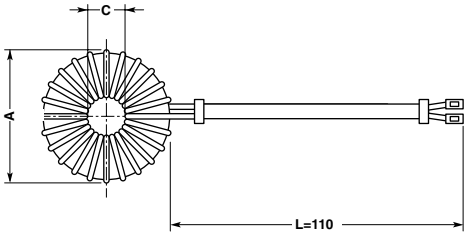
OPEN VERSION **Current 16 to 36 A**

These chokes are made with high-permeability toroid core (ferrite) and insulated copper wire. They are inserted along the protective earth line in order to eliminate the interference currents proceeding from electrical appliances.



Dimensions in mm

Standard type



Special type:
plastic protective covering
and solder terminals

TYPES

Standard type	Special type	Rated current	Rated inductance	Wire cross section	Dimensions - mm			Approx. weight
Code	Code	A	mH	mm	A max.	B max.	C min.	g
21N22 A6 00	21N22T A6 00	16	1.2	1	22	18	5	20
21N42 B0 00	21N42T B0 00	20	2.2	1.5	44	22	14	70
21N45 B7 00	21N45T B7 00	27	1.2	2.5	46	24	11	75
21N44 C6 00	21N44T C6 00	36	1.6	4	44	20	10	75

Technical Data

Rated current: according to EN 138100; EN 60938-1
Rated inductance: at +20°C and 10 kHz, 0.1 mA.

Inductance tolerance: +50% -30%
Climatic category: DIN GKF (-40° to +125°C; humidity class F)

The chokes are designed and tested in accordance with EN 138100; EN 60938-1

Electrical equipment often originates asymmetrical interferences, appearing between power supply cords and ground, wich flow to the ground through the earth conductor of the equipment.

For interference suppression, the use of capacitors is often insufficient, and the current-compensated chokes which could be alternatively used are too big and heavy, as the electrical consumption of the appliances can be up to 1kW.

Thus an earth line choke can effectively be used, inserted along the ground line of the equipment.

EN 138100 safety norms require the windings of these coils to have a copper section not less than the section of the earth line. They also dictate that, with a load greater than 4 times the nominal current, voltage drop must not exceed 4V. To prevent errors and misapplication, only 4 nominal current values have been approved, with their relative wire sections: 16 A for 1 sq mm - 20 A for 1.5 sq mm - 27 A for 2.5 sq mm - 36 A for 4 sq mm.

During nominal operation the earth line choke only takes the dispersion current (<3.5 mA) and low magnetization therefore allows high permeability (ferrite), small-sized cores to be used.

Les équipements électriques génèrent souvent des interférences asymétriques qui apparaissent entre les lignes d'alimentation et la terre, qui s'ecoulent vers la terre à travers le conducteur de l'appareil.

Pour la suppression des interférences, l'utilisation de condensateurs est souvent insuffisante et les selfs à courant compensé qui pourraient être alternativement utilisées seraient trop grosses et lourdes, étant donné que la consommation électrique peut excéder 1 kW.

Ainsi une selfs de terre peut efficacement être utilisée, insérée le long la ligne de terre de l'appareil.

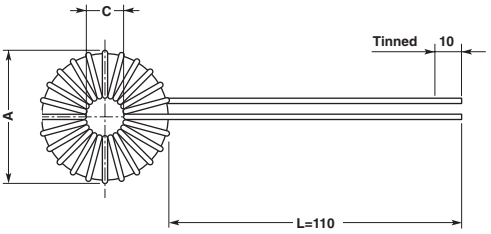
La norme de sécurité (EN 138100) prescrit que la section du fil de cuivre de bobinage ne doit pas être inférieure à celle de la ligne de terre; elle prescrit en outre que sous une charge de 4 fois le courant nominal, la chute de tension ne doit pas excéder 4V. Afin d'éviter toute confusion et des applications incorrects, seulement quatre valeurs de courant et leur section correspondante sont homologuées: 16 A pour 1 mm^2 - 20 A pour 1,5 mm^2 - 27 A pour 2,5 mm^2 - 36 A pour 4 mm^2.

Dans des conditions normales d'utilisation, la self de terre est uniquement traversée par le courant de dispersion (<3,5 mA); la basse magnétisation résultante permet donc l'utilisation de noyau à haute perméabilité (ferrite) et de taille réduite.

Earth Line Chokes

OPEN VERSION **Current 16 to 36 A**

These chokes are made with high-permeability toroid core (ferrite) and insulated copper wire. They are inserted along the protective earth line in order to eliminate the interference currents proceeding from electrical appliances.



Dimensions in mm

TYPES

Code	Rated current A	Rated inductance mH	Wire cross section mm	Dimensions - mm			Approx. weight g
				A max.	B max.	C min.	
21N22 A6 00	16	1.2	1	22	18	5	20
21N42 B0 00	20	2.2	1.5	44	22	14	70
21N45 B7 00	27	1.2	2.5	46	24	11	75
21N44 C6 00	36	1.6	4	44	20	10	75

Technical Data

Rated current: according to EN 138100; EN 60938-1
Rated inductance: at +20°C and 10 kHz, 0.1 mA.

Inductance tolerance: +50% -30%
Climatic category: DIN GKF (-40° to +125°C; humidity class F)

The chokes are designed and tested in accordance with EN 138100; EN 60938

A storage inductor is generally located in a switched-mode power supply (SMPS) between the switching device and the load; during the active phase it stores energy, then released during the passive phase.

The energy stored in an inductor is proportional to the inductance and to the square of the current, so it is important mainly to maximize the current, but the core must not saturate, which would bring the inductance practically to zero; thus the iron powder (IP) cores are the most suitable.

Molypermalloy powder (MPP) cores are also used due to their very good magnetic properties, in spite of the moderately higher price.

In principle, a storage inductor is not different from an IP core suppression choke, but the usual inductance values are rather different.

Une self de stockage est en général placée dans une alimentation à découpage (SMPS) entre le dispositif de découpage et la charge; durant la phase active elle stocke de l'énergie, qui est libérée durant la phase passive.

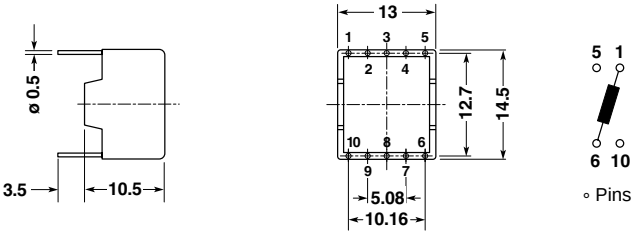
L'énergie stockée dans une self est proportionnelle à la valeur d'inductance et au carré du courant: il est donc important de maximiser sourtout le courant, mais le noyau ne doit pas saturer, ce qui annulerait la valeur d'inductance; pour cette raison le noyau torique poudre de fer (IP) est le plus utilisé.

Dans les alimentations haute-performances le noyau poudre molypermalloy (MPP), en fonction de ses excellentes qualités magnétiques, est aussi utilisé, malgré son prix relativement élevé.

En principe, une self de stockage n'est pas fondamentalement différente d'une self de déparasitage à noyau IP, mais les valeurs d'inductance utilisées sont sensiblement différentes.

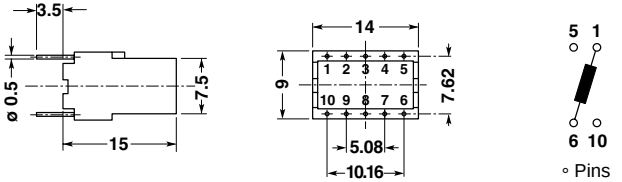
CASE VERSION **Current 0.4 to 0.63 A**

These chokes are made with a toroid core in iron powder (IP).
They are mainly used in switched-mode power supplies; they can also be used as RFI suppressors.



56H14
Horizontal mounting

Dimensions in mm
Pins are tinned



56V15
Vertical mounting

TYPES

Horizontal	Vertical	Rated current per winding	Rated inductance per winding	DC resistance per winding (typical)
Code	Code	A	µH	m Ω
56H14 04 00	56V15 04 00	0.4	100	220
56H14 06 00	56V15 06 00	0.63	70	150

Table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

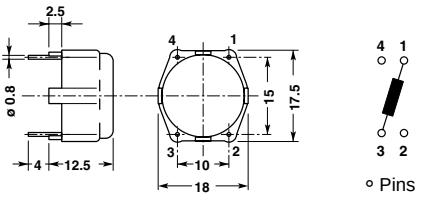
Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	± 20%
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Approx. weight:	3 g

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

CASE VERSION **Current 0.4 to 0.63 A**

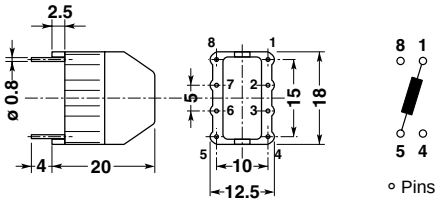
These chokes are made with a toroid core in iron powder (IP).
They are mainly used in switched-mode power supplies; they can also be used as RFI suppressors.

Dimensions in mm
Pins are tinned



56H17
Horizontal mounting

Optional: Pins out 1 - 2
Blind pins 4 - 3



56V20
Vertical mounting

Optional: Pins out 2 - 6
Blind pins 7 - 3

TYPES

Horizontal Code	Vertical Code	Rated current A	Rated inductance µH	DC resistance (typical) m Ω
56H17 04 00	56V20 04 00	0.40	300	560
56H17 06 00	56V20 06 00	0.63	150	230

The table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

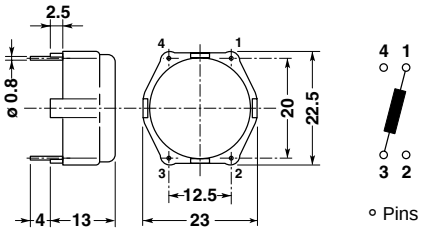
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA
Inductance tolerance:	± 20%
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Approx. weight:	10 g

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

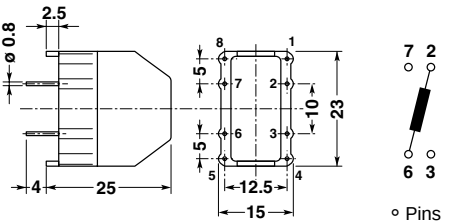
CASE VERSION **Current 0.63 to 2 A**

These chokes are made with a toroid core in iron powder (IP).
They are mainly used in switched-mode power supplies; they can also be used as RFI suppressors.

Dimensions in mm
Pins are tinned



56H22
Horizontal mounting



56V25
Vertical mounting

Optional: Pins out 1 - 2
Blind pins 4 - 3

Optional: Pins out 1 - 5
Blind pins 8 - 4

TYPES

Horizontal	Vertical	Rated current	Rated inductance	DC resistance (typical)
Code	Code	A	µH	m Ω
56H22 06 00	56V25 06 00	0.63	470	500
56H22 10 00	56V25 10 00	1	270	210
56H22 20 00	56V25 20 00	2	150	100

The table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

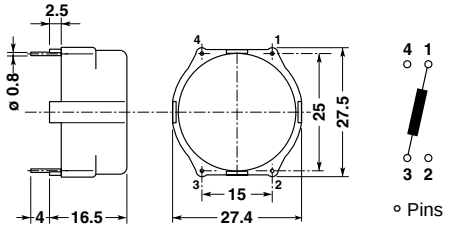
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA
Inductance tolerance:	± 20%
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Approx. weight:	12 g

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

CASE VERSION **Current 0.63 to 2.5 A**

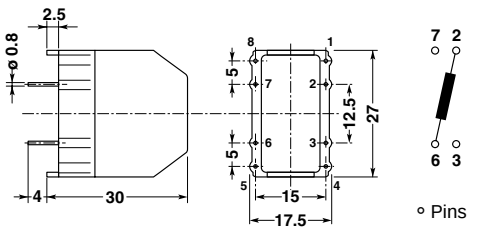
These chokes are made with a toroid core in iron powder (IP).
They are mainly used in switched-mode power supplies; they can also be used as RFI suppressors.

Dimensions in mm
Pins are tinned



56H27
Horizontal mounting

Optional: Pins out 1 - 2
Blind pins 4 - 3



56V30
Vertical mounting

Optional: Pins out 1 - 5
Blind pins 8 - 4

TYPES

Horizontal Code	Vertical Code	Rated current A	Rated inductance µH	DC resistance (typical) m Ω
56H27 06 00	56V30 06 00	0.63	680	600
56H27 10 00	56V30 10 00	1	560	360
56H27 16 00	56V30 16 00	1.6	330	180
56H27 25 00	56V30 25 00	2.5	260	100

The table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

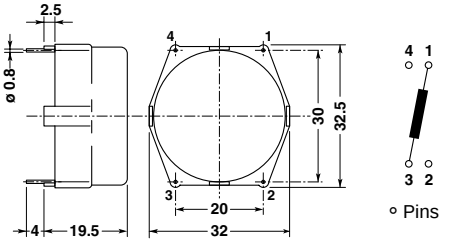
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA
Inductance tolerance:	± 20%
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Approx. weight:	16 g

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

CASE VERSION **Current 1 to 4 A**

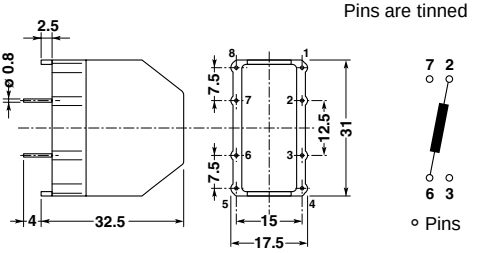
These chokes are made with a toroid core in iron powder (IP).
They are mainly used in switched-mode power supplies; they can also be used as RFI suppressors.

Dimensions in mm
Pins are tinned



56H32
Horizontal mounting

Optional: Pins out 1 - 2
Blind pins 4 - 3



56V32
Vertical mounting

Optional: Pins out 1 - 5
Blind pins 8 - 4

TYPES

Horizontal Code	Vertical Code	Rated current A	Rated inductance µH	DC resistance (typical) m Ω	Approval
56H32 10 00	56V32 10 00	1	1500	690	
56H32 16 00	56V32 16 00	1.6	1000	400	
56H32 20 00	56V32 20 00	2	150	90	VDE
56H32 20 01	56V32 20 01	2	390	160	
56H32 31 00	56V32 31 00	3.15	180	75	
56H32 40 00	56V32 40 00	4	150	75	VDE
56H32 60 00		6	150	52	VDE
56H32 80 00		8	100	34	VDE
56H32 A0 00		10	80	20	VDE

Technical Data

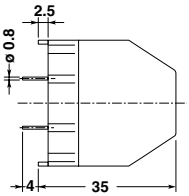
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C - 10 kHz, 0.1 mA
Inductance tolerance:	± 20%
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Approx. weight:	26 g

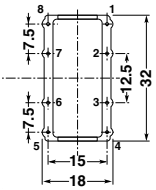
VDE Approval VDE

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

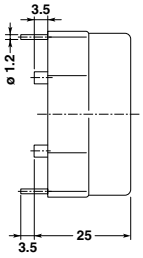
CASE VERSION **Current 1 to 10 A**

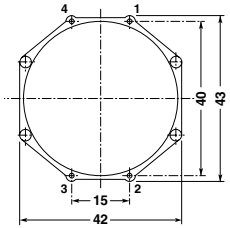
These chokes are made with a toroid core in iron powder (IP).
They are mainly used in switched-mode power supplies; they can also be used as RFI suppressors.





Dimensions in mm
Pins are tinned





56V35
Vertical mounting

Optional: Pins out 1 - 5
Blind pins 8 - 4

∘ pins

56H42
Horizontal mounting

Optional: Pins out 1 - 2
Blind pins 4 - 3

∘ pins

TYPES

Vertical Code	Horizontal Code	Rated current A	Rated inductance µH	DC resistance (typical value) m Ω	Approx. weight g	Approval
56V35 10 00		1	1800	780	36	
	56H42 16 00	1.6	1600	650	38	
56V35 20 00		2	470	210	36	
56V35 20 01		2	1100	400	36	
56V35 25 00		2.5	680	210	36	
	56H42 31 00	3.15	820	200	38	
56V35 50 00		5	120	45	40	
	56H42A 50 00	5	330	80	40	
	56H42 60 00	6	150	45	40	VDE
	56H42A 63 00	6.3	330	70	40	
	56H42 80 00	8	100	30	44	VDE
	56H42A 80 00	8	180	40	44	
	56H42 A0 00	10	80	20	48	VDE
	56H42A A0 00	10	120	20	50	

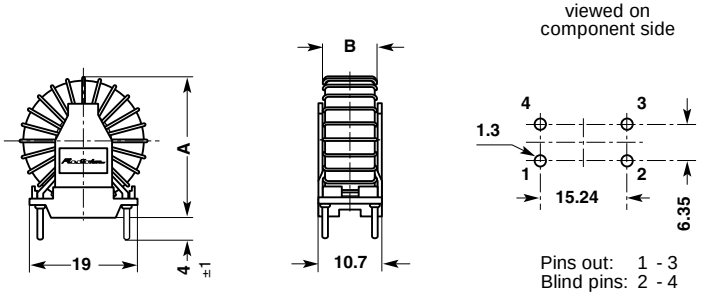
VDE Approval VDE

See technical data and notes p. 62

SOCKET VERSION
Vertical mounting **Current 0.63 A**

These chokes are made with a toroid core in iron powder (IP).
They are mainly used in switched-mode power supplies; they can also be used as RFI suppressors.

Dimensions in mm
Pins are tinned



51V13 SV1P
51V17 SV1P
Vertical mounting

TYPES

Code	Rated current A	Rated inductance µH	DC resistance (typical) m Ω	Dimensions - mm A max.	Dimensions - mm B max.	Overall dimensions on PCB max.	Approx. weight g
51V13 06 00 SV1P	0.63	150	230	18	6.5	19 x 11	7
51V17 06 00 SV1P	0.63	330	380	23	7.5	22 x 11	12

Table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

Rated inductance:	at +20°C - 10 kHz, 0.1 mA
Inductance tolerance:	± 20%
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)

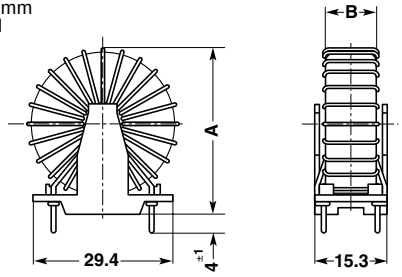
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The sockets are of flame-retardant plastic material in accordance with UL 94V-0

SOCKET VERSION
Vertical mounting

Current 0.63 to 4 A

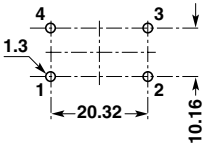
These chokes are made with a toroid core in iron powder (IP).
They are mainly used in switched-mode power supplies; they can also be used as RFI suppressors.

Dimensions in mm
Pins are tinned



51V SV2
51V SV2P
Vertical mounting

viewed on
component side



Pins out: 1-3
Blind pins: 2-4

51V24 40 00 SV2 only
Pins out: 1-3
Blind pins: Not

TYPES

Code	Rated current A	Rated inductance µH	DC resistance (typical) m Ω	Dimensions mm A max.	Dimensions mm B max.	Overall dimensions on PCB - max	Approx. weight g	Approval
51V20 06 00 SV2P	0.63	680	600	25	10.5	30 x 16	19	
51V17 10 00 SV2P	1	270	210	23	9	30 x 16	18	
51V20 10 00 SV2P	1	560	360	26	12	30 x 16	23	
51V24 10 00 SV2P	1	1500	690	31	10.5	30 x 16	31	
51V27 10 00 SV2P	1	1800	780	34	11	33 x 16	37	
51V20 16 00 SV2P	1.6	330	180	26	11	30 x 16	21	
51V24 16 00 SV2P	1.6	1000	400	31	10.5	30 x 16	28	
51V17 20 00 SV2P	2	150	100	24	9	30 x 16	18	
51V24 20 00 SV2P	2	150	90	30	10	30 x 16	23	VDE
51V24 20 01 SV2P	2	390	160	31	10.5	30 x 16	25	
51V27 20 00 SV2P	2	470	210	34	10.5	33 x 16	30	
51V20 25 00 SV2P	2.5	200	100	27	12	30 x 16	23	
51V24 31 00 SV2P	3.15	180	75	31	10.5	30 x 16	27	
51V24 40 00 SV2P	4	150	55	31	10	30 x 16	25	VDE

Table shows the standard types. Other types can be supplied according to customer's specifications.

VDE Approval VDE

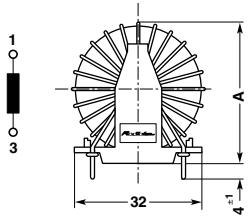
See technical data and notes p. 64

SOCKET VERSION
Vertical mounting

Current 1.6 to 20 A

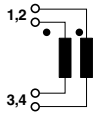
These chokes are made with a toroid core in iron powder (IP).
They are mainly used in switched-mode power supplies; they can also be used as RFI suppressors.

Dimensions in mm
Pins are tinned

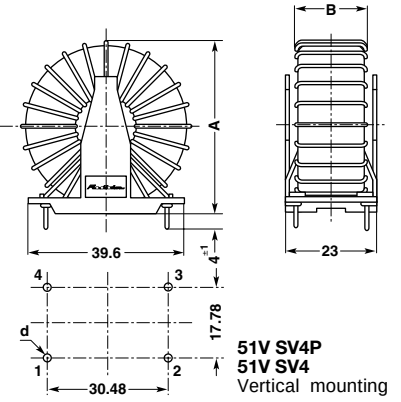


51V SV3P
51V SV3
Vertical mounting

51V38 B0 00 SV4 only



Viewed on component side



51V SV4P
51V SV4
Vertical mounting

TYPES

Code	Rated current A	Rated inductance µH	DC resistance (typical) m Ω	Dimensions mm A max.	B max.	d	Overall dimensions on PCB max.	Pins out	Blind Pins	Approx. weight g	Approval
51V32 16 00 SV3P	1.6	1600	650	38	10	1.3	37 x 21	1 - 3	2 - 4	40	
51V27 25 00 SV3P	2.5	680	220	35	9.5	1.3	34 x 21	1 - 3	2 - 4	38	
51V38 25 00 SV4P	2.5	1500	500	46	12.5	1.3	45 x 23	1 - 3	2 - 4	78	
51V33 31 00 SV3P	3.15	820	200	42	7.5	1.3	41 x 21	1 - 3	2 - 4	67	
51V27 50 00 SV3P	5	120	45	35	11.5	1.3	34 x 21	1 - 3	2 - 4	36	
51V33 50 00 SV3P	5	330	80	43	16	1.3	42 x 21	1 - 3	2 - 4	70	
51V32 60 00 SV3	6	150	45	39	9.5	1.3	38 x 21	1 - 3	Not	39	VDE
51V33 63 00 SV3	6.3	330	70	43	16	1.3	42 x 21	1 - 3	Not	73	
51V32 80 00 SV3	8	100	30	40	10	1.3	39 x 21	1 - 3	Not	40	VDE
51V33 80 00 SV3	8	180	40	42	14	1.3	41 x 21	1 - 3	Not	62	
51V32 A0 00 SV3	10	80	20	41	12	1.5	40 x 21	1 - 3	Not	42	VDE
51V38 A0 00 SV4	10	150	26	48	18	1.5	47 x 23	1 - 3	Not	87	
51V33 A6 00 SV3	16	100	15	45	17	2	44 x 21	see schem.		82	
51V38 B0 00 SV4	20	100	10	50	15.5	1.8	49 x 23	see schem.		102	

Table shows the standard types. Other types can be supplied according to customer's specifications.

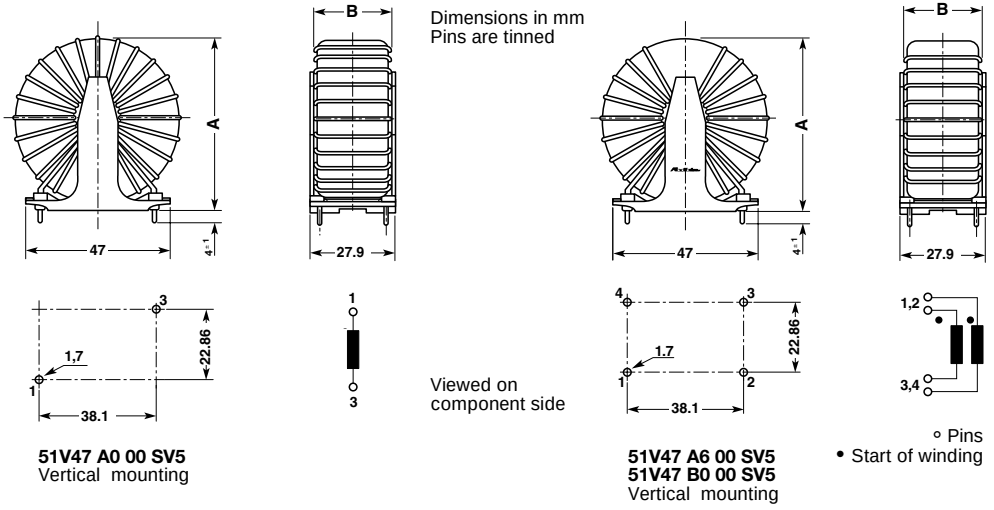
VDE Approval VDE

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The sockets are of flame-retardant plastic material in accordance with UL 94V-0

See technical data and notes p. 67

SOCKET VERSION **Current 10 to 20 A**
Vertical mounting

These chokes are made with a toroid core in iron powder (IP).
They are manly used as power factor correction circuits in switched-mode power supplies; they can also be used as RFI suppressors.



51V47 A0 00 SV5
Vertical mounting

51V47 A6 00 SV5
51V47 B0 00 SV5
Vertical mounting

TYPES

Code	Rated current A	Rated inductance µH	DC resistance (typical) m Ω	Dimensions - mm A max.	Dimensions - mm B max.	Overall dimensions on PCB max.
51V47 A0 00 SV5	10	400	67	55	23	55 x 28
51V47 A6 00 SV5	16	250	40	56	25	56 x 28
51V47 B0 00 SV5	20	150	18	57	26	57 x 28

Values per winding.
Table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

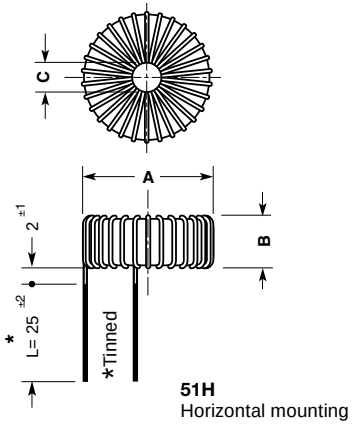
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA
Inductance tolerance:	± 20%
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Approx. weight:	200 g

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

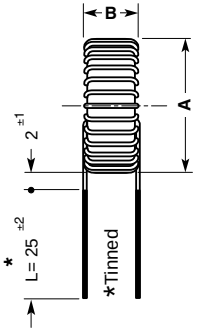
OPEN VERSION **Current 0.63 to 20 A**

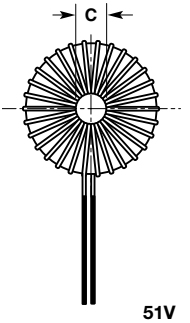
These chokes are made with a toroid core in iron powder (IP).
They are mainly used in switched-mode power supplies; they can also be used as RFI suppressors.

Dimensions in mm



51H
Horizontal mounting





51V
Vertical mounting

Dimensions in mm

Other terminal lengths on request

Other terminal lengths on request

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C - 10 kHz and 0.1 mA
Inductance tolerance:	± 20%
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)

Approval VDE

The chokes are designed and tested in accordance with EN 138100; EN 60938-1

See types p. 69

OPEN VERSION **Current 0.63 to 20 A**

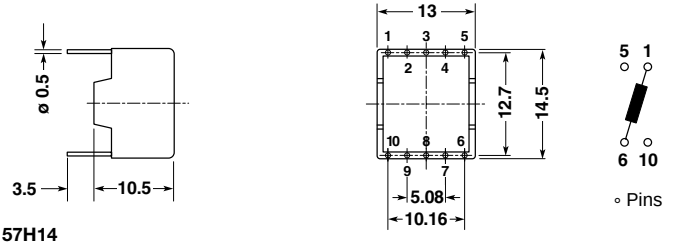
TYPES

Horizontal Code	Vertical Code	Rated current A	Rated inductance µH	DC resistance (typical) m Ω	Dimensions - mm A max.	B max.	C min.	Approx. weight g	Approv.
51H13 06 00	51V13 06 00	0.63	150	230	14	6.5	5.5	4	
51H17 06 00	51V17 06 00	0.63	330	380	18.5	7.5	8	9	
51H20 06 00	51V20 06 00	0.63	680	600	21	10.5	10.5	15	
51H17 10 00	51V17 10 00	1	270	210	19.5	9	5	14	
51H20 10 00	51V20 10 00	1	560	360	22	12	8	19	
51H24 10 00	51V24 10 00	1	1500	690	26.5	10.5	9	27	
51H27 10 00	51V27 10 00	1	1800	780	30	11	9	33	
51H20 16 00	51V20 16 00	1.6	330	180	21.5	11	10	17	
51H24 16 00	51V24 16 00	1.6	1000	400	26.5	10.5	10.5	24	
51H32 16 00	51V32 16 00	1.6	1600	650	34	10	14	34	
51H17 20 00	51V17 20 00	2	150	100	20	9	6.5	12	
51H24 20 00	51V24 20 00	2	150	90	26	10	11	19	VDE
51H24 20 01	51V24 20 01	2	390	160	26.5	10.5	10.5	21	
51H27 20 00	51V27 20 00	2	470	210	29	10.5	10.5	26	
51H27 20 01	51V27 20 01	2	1100	400	30	11.5	9.5	30	
51H20 25 00	51V20 25 00	2.5	200	100	22.5	12	9	19	
51H27 25 00	51V27 25 00	2.5	680	220	31	11	10	33	
51H38 25 00	51V38 25 00	2.5	1500	500	42	12.5	17	71	
51H24 31 00	51V24 31 00	3.15	180	75	27	10.5	10	23	
51H33 31 00	51V33 31 00	3.15	820	200	38	16	11.5	62	
51H24 40 00	51V24 40 00	4	150	55	27	10	10.5	21	VDE
51H27 50 00	51V27 50 00	5	120	45	31	11.5	9.5	31	
51H33 50 00	51V33 50 00	5	330	80	38.5	16	11	65	
51H32 60 00	51V32 60 00	6	150	45	35	9.5	14	34	VDE
51H33 63 00	51V33 63 00	6.3	330	70	38.5	16	12	67	
51H32 80 00	51V32 80 00	8	100	30	35.5	10	14	35	VDE
51H33 80 00	51V33 80 00	8	180	40	37.5	15	14	57	
51H32 A0 00	51V32 A0 00	10	80	20	37	12	11	37	VDE
51H38 A0 00	51V38 A0 00	10	150	26	44	18	13.5	80	
51H33 A6 00	51V33 A6 00	16	100	15	41	17	9	77	
51H38 B0 00	51V38 B0 00	20	100	10	45.5	15.5	13	95	
51H47 A0 00	51V47 A0 00	10	400	67	53	23	18	200	
51H47 A6 00	51V47 A6 00	16	250	40	54	25	17	200	
51H47 B0 00	51V47 B0 00	20	150	18	55	26	17	200	

The table shows the standard types. Other types can be supplied according to customer's specifications.
See technical data p. 68

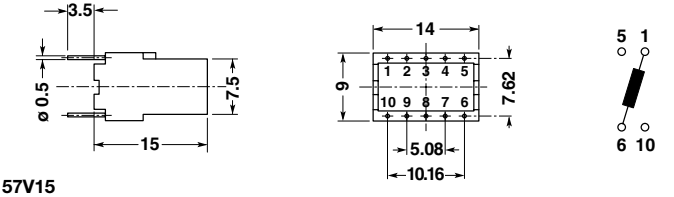
CASE VERSION **Current 0.4 to 0.63 A**

These chokes are made with a toroid core in molypermalloy powder (MPP).
Compared with the iron powder (IP) storage chokes, the MPP types have smaller dimensions, lower inductance loss and better saturation conditions.
They are mainly used in switched-mode power supplies. They can also be used as RFI suppressors.



57H14
Horizontal mounting

Dimensions in mm
Pins are tinned



57V15
Vertical mounting

TYPES

Horizontal	Vertical	Rated current	Rated inductance	DC resistance (typical)
Code	Code	A	µH	m Ω
57H14 04 00	57V15 04 00	0.4	100	220
57H14 06 00	57V15 06 00	0.63	80	150

Table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

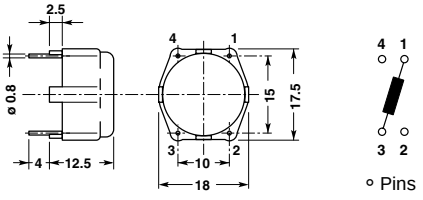
Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	± 20%
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Approx. weight:	3 g

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

CASE VERSION **Current 0.4 to 1.5 A**

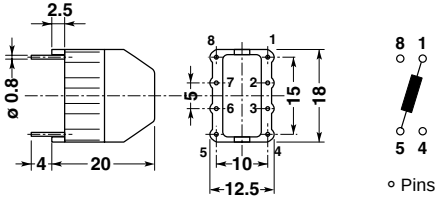
These chokes are made with a toroid core in molypermalloy powder (MPP).
Compared with the iron powder (IP) storage chokes, the MPP types have smaller dimensions, lower inductance loss and better saturation conditions.
They are mainly used in switched-mode power supplies. They can also be used as RFI suppressors.

Dimensions in mm
Pins are tinned



57H17
Horizontal mounting

Optional: Pins out 1 - 2
Blind pins 4 - 3



57V20
Vertical mounting

Optional: Pins out 2 - 6
Blind pins 7 - 3

TYPES

Horizontal	Vertical	Rated current	Rated inductance	DC resistance (typical)
Code	Code	A	µH	m Ω
57H17 04 00	57V20 04 00	0.4	200	360
57H17 06 00	57V20 06 00	0.63	150	200
57H17 10 00	57V20 10 00	1	100	120
57H17 15 00	57V20 15 00	1.5	80	85

Table shows the standard types. Other types can be supplied according to customer's specifications.

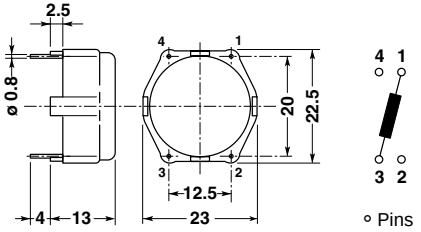
Technical Data

Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	± 20%
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Approx. weight:	10 g

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

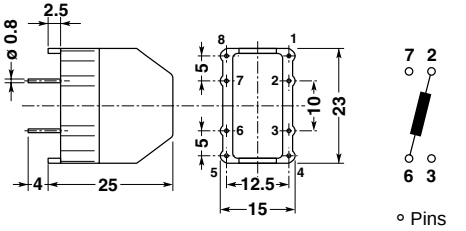
CASE VERSION **Current 2 to 6 A**

These chokes are made with a toroid core in molypermalloy powder (MPP).
Compared with the iron powder (IP) storage chokes, the MPP types have smaller dimensions, lower inductance loss and better saturation conditions.
They are mainly used in switched-mode power supplied. They can also be used as RFI suppressors.



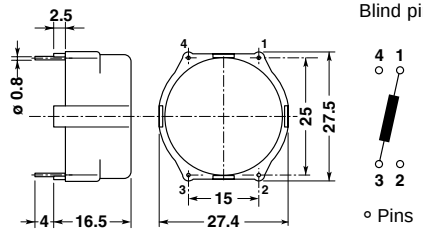
57H22 Horizontal mounting

Optional: Pins out 1 - 2
Blind pins 4 - 3



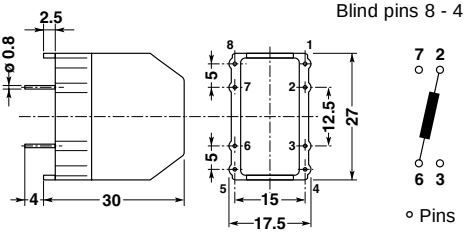
57V25 Vertical mounting

Optional: Pins out 1 - 5
Blind pins 8 - 4



57H27 Horizontal mounting

Dimensions in mm
Pins are tinned



57V30 Vertical mounting

TYPES

Horizontal Code	Vertical Code	Rated current A	Rated inductance µH	DC resistance (typical) m Ω	Approx. weight g	Approval
57H22 20 00	57V25 20 00	2	150	100	10	
57H27 40 00	57V30 40 00	4	150	60	18	
57H27 60 00	57V30 60 00	6	150	50	24	

Table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA
Inductance tolerance:	± 20%
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)

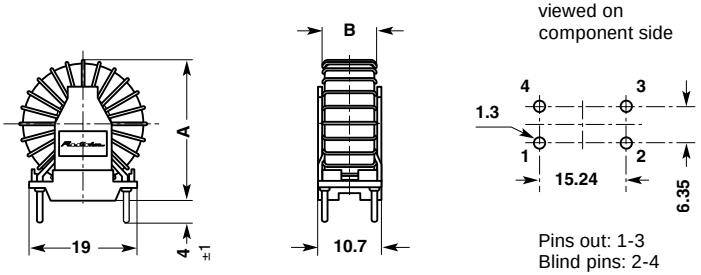
Approval VDE

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

SOCKET VERSION **Current 0.4 to 2 A**
Vertical mounting

These chokes are made with a toroid core in molypermalloy powder (MPP).
Compared with the iron powder (IP) storage chokes, the MPP types have smaller dimensions, lower inductance loss and better saturation conditions.
They are mainly used in switched-mode power supplies. They can also be used as RFI suppressors.

Dimensions in mm
Pins are tinned



52V13 SV1P
52V17 SV1P
Vertical mounting

TYPES

Code	Rated current A	Rated inductance µH	DC resistance (typical) m Ω	Dimensions - mm A max.	Dimensions - mm B max.	Overall dimensions on PCB max.	Approx. weight g	Approval
52V13 04 00 SV1P	0.4	200	360	19	6.5	19 x 11	8	
52V13 06 00 SV1P	0.63	150	200	20	6.5	19 x 11	8	
52V13 10 00 SV1P	1	100	120	21	7	19 x 11	9	
52V13 15 00 SV1P	1.5	80	85	21	7.5	19 x 11	9	
52V17 20 00 SV1P	2	150	100	24	8	23 x 11	12	VDE

Table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

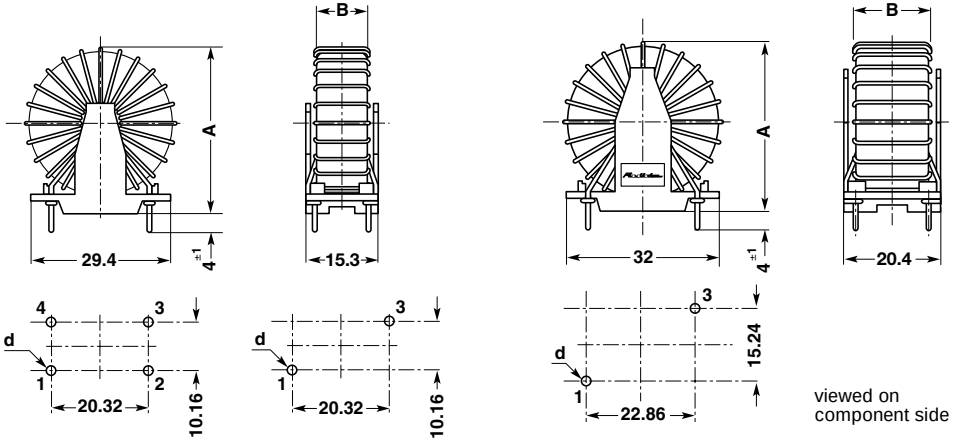
Rated inductance:	at +20°C and 10 kHz, 0.1 mA.
Inductance tolerance:	± 20%
Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)

VDE Approval VDE

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The sockets are of flame-retardant plastic material in accordance with UL 94V-0

SOCKET VERSION **Current 4 to 10 A**
Vertical mounting

These chokes are made with a toroid core in molypermalloy powder (MPP).
Compared with the iron powder (IP) storage chokes, the MPP types have smaller dimensions, lower inductance loss and better saturation conditions.
They are mainly used in switched-mode power supplies. They can also be used as RFI suppressors.



52V21 SV2P
Vertical mounting

Pins out: 1-3
Blind pins: 2-4

52V21 SV2
Vertical mounting

52V27 SV3
Vertical mounting

Dimensions in mm
Pins are tinned

TYPES

Code	Rated current A	Rated inductance µH	DC resistance (typical value) m Ω	Dimensions - mm A max.	B max.	d	Overall dimensions on PCB max.	Approx. weight g	Approval
52V21 40 00 SV2P	4	150	60	28	8.5	1.3	30 x 16	18	
52V21 60 00 SV2	6	150	50	29	9	1.3	30 x 16	23	
52V27 80 00 SV3	8	100	20	34	13.5	1.3	33 x 21	43	
52V27 A0 00 SV3	10	80	10	35	14.5	1.5	34 x 21	49	

Table shows the standard types. Other types can be supplied according to customer's specifications.

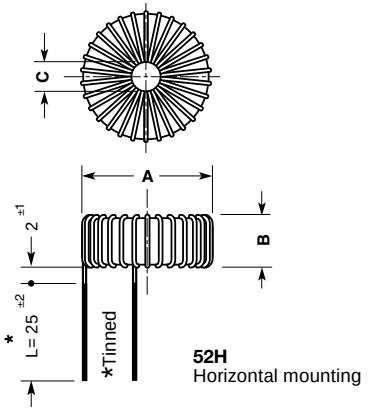
Approval VDE

The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The sockets are of flame-retardant plastic material in accordance with UL 94V-0

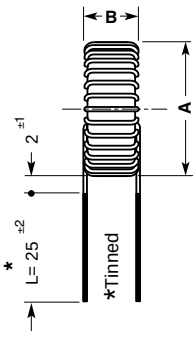
See technical data and notes p. 73

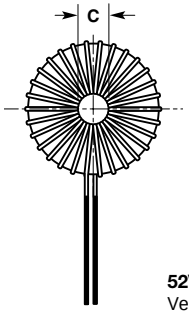
OPEN VERSION **Current 2 to 10 A**

These chokes are made with a toroid core in molypermalloy powder (MPP). Compared with the iron powder (IP) storage chokes, the MPP types have smaller dimensions, lower inductance loss and better saturation conditions. They are mainly used in switched-mode power supplied. They can also be used as RFI suppressors.



52H
Horizontal mounting





52V
Vertical mounting

Dimensions in mm

Other terminal lengths on request

TYPES

Horizontal mounting	Vertical mounting	Rated current	Rated inductance	DC resistance (typical)	Dimensions - mm			Approx. weight	Approval
Code	Code	A	µH	m Ω	A max.	B max.	C min.	g	
52H17 20 00	52V17 20 00	2	150	100	20.5	8.5	9	9	
52H21 40 00	52V21 40 00	4	150	60	23.5	8.5	10.5	13	
52H21 60 00	52V21 60 00	6	150	50	25	9	11	18	
52H27 80 00	52V27 80 00	8	100	20	30	13.5	11.5	39	
52H27 A0 00	52V27 A0 00	10	80	10	31	14.5	10	44	

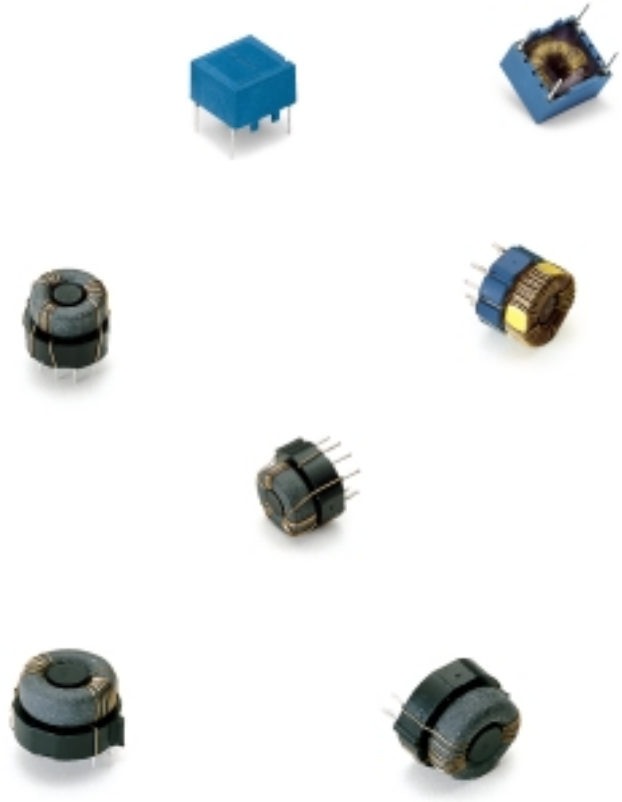
Table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

Rated current:	referred to 250 V-50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA
Inductance tolerance:	± 20%
DC resistance:	at +20°C
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)

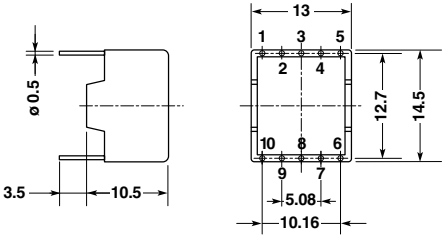
Approval VDE

The chokes are designed and tested in accordance with EN 138100; EN 60938-1



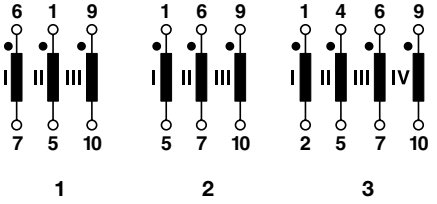
CASE VERSION

These current transformers are fitted with high-permeability toroid core (ferrite). They are mainly used as drivers for transistor self-oscillating circuits in electronic transformers for halogen lamps, electronic ballasts for fluorescent lamps, switched-mode power supplies and other electronic devices.



Dimensions in mm
Pins are tinned

Connection plans



• Start of winding
o Pins

NEW

TYPES

Code	Rated inductance (typical)	Winding turns				kV	Connection plan
	mH•	I	II	III	IV		
62H14 32 00	0.016	2	4•	2	—	0.5	1
62H14 32 01	0.025	5•	3	3	—	0.5	2
62H14 32 02	0.025	1	5•	5•	—	0.5	2
62H14 42 00	0.025	5•	5•	5•	5•	1.0	3

• Rated inductance measured at 10 kHz, 0.1 mA

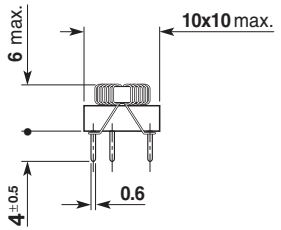
Approx. weight: 3 g.

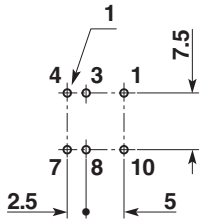
The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

CASE VERSION

These current transformers are fitted with high-permeability toroid core (ferrite). They are mainly used as drivers for transistor self-oscillating circuits in electronic transformers for halogen lamps, electronic ballasts for fluorescent lamps, switched-mode power supplies and other electronic devices.

Dimensions in mm
Pins are tinned





viewed on
component side

Connection plan

● Start of winding
○ Pins

TYPES

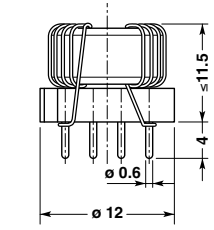
Code	Rated inductance (typical)	Winding turns			kV
	mH●	I	II	III	
62H10 32 00	0.032	1	8●	8●	0.5
62H10 32 01	0.012	3	5●	5●	0.5
62H10 32 02	0.012	5●	3	3	0.5
62H10 32 03	0.028	7●	3	3	0.5

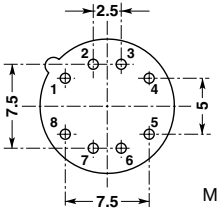
● Rated inductance measured at 10 kHz, 0.1 mA

Approx. weight: 4 g.

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The sockets are of flame-retardant plastic material in accordance with UL 94V-0

These current transformers are fitted with high-permeability toroid core (ferrite). They are mainly used as drivers for transistor self-oscillating circuits in electronic transformers for halogen lamps, electronic ballasts for fluorescent lamps, switched-mode power supplies and other electronic devices.

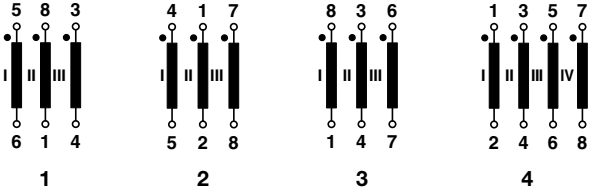




Mounting holes Ø 0.9

Wiew from the bottom

Connection plans



• Start of winding
° Pins

Dimensions in mm
Pins are tinned

TYPES

Code	Rated inductance (typical) mH•	Winding turns				kV	Connection plan
		I	II	III	IV		
62H12 32 00	0.016	2	4•	2	—	0.5	1
62H12 32 01	0.025	5•	3	3	—	0.5	2
62H12 32 02	0.025	1	5•	5•	—	0.5	3
62H12 42 00	0.025	5•	5•	5•	5•	1.0	4

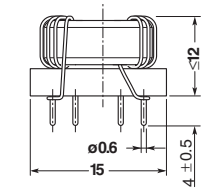
• Rated inductance measured at 10 kHz, 0.1 mA

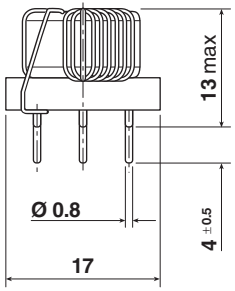
Approx. weight: 4 g.

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The sockets are of flame-retardant plastic material in accordance with UL 94V-0

Driver Transformers

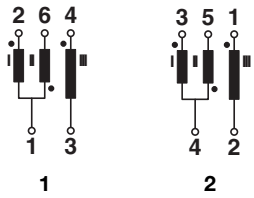
These current transformers are fitted with high-permeability toroid core (ferrite). They are mainly used as drivers for transistor self-oscillating circuits in electronic transformers for halogen lamps, electronic ballasts for fluorescent lamps, switched-mode power supplies and other electronic devices.

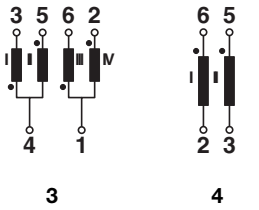




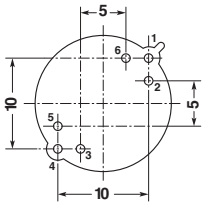
Dimensions in mm
Pins are tinned

Connection plans



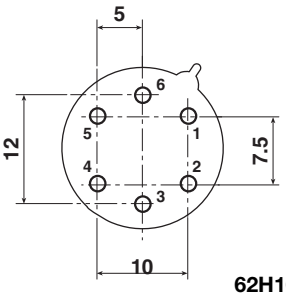


● Start of winding
○ Pins



62H15

Wiew from the bottom
Mounting holes Ø 0.9



62H16

Wiew from the bottom
Mounting holes Ø 1.3

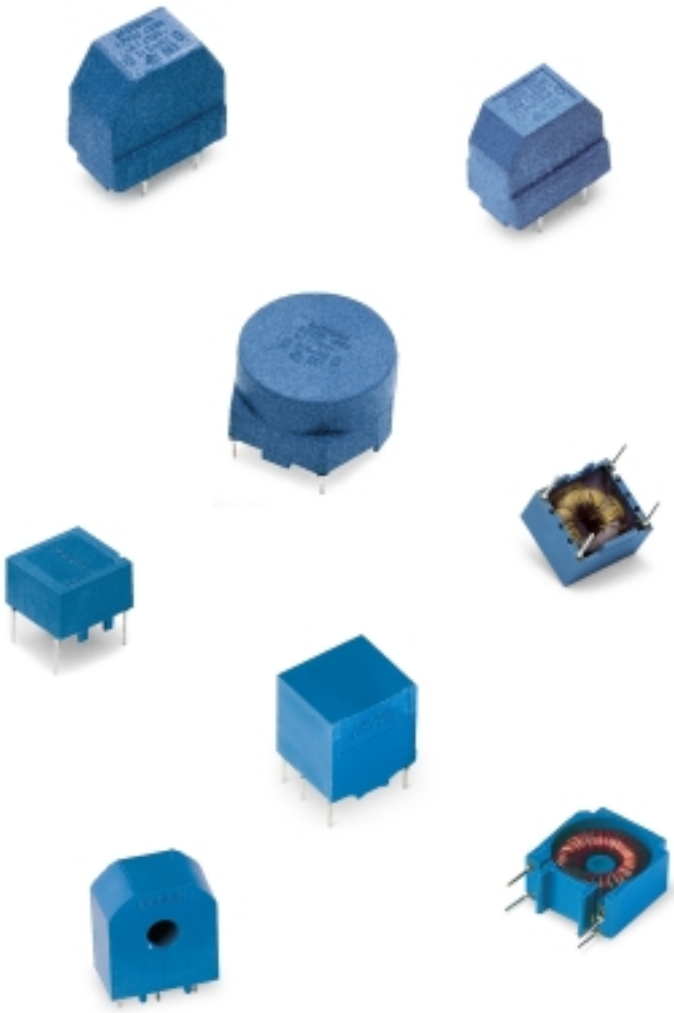
TYPES

Code	Code	Rated inductance (typical)	Winding turns				kV	Connection plan
		mH•	I	II	III	IV		
62H15 32 00	62H16 32 00	0.012	2•	2•	2•	—	0.5	1
62H15 32 01	62H16 32 01	0.060	1	7•	7•	—	0.5	2
62H15 42 00	62H16 42 00	0.120	3	2	2	10•	0.5	3
62H15 42 01	62H16 42 01	0.120	6	1	1	10•	0.5	3
62H15 22 00	62H16 22 00	0.050	6•	6•	—	—	4.0	4

• Rated inductance measured at 10 kHz, 0.1 mA

Approx. weight: 5 g

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The sockets are of flame-retardant plastic material in accordance with UL 94V-0



NEW

These transformers are wound on high quality ferrite core and are intended for a very wide range of applications:

- firing thyristors and triacs;
- driving bipolar transistor and IGBT;
- driving FET and MOSFET transistors;
- line coupling in high speed data transmission (for the smallest sizes).

Three case sizes are presented, with increasing power rating, so that they can effectively find use as drivers in any low-to-medium power circuit for control and conversion of electrical energy, where the following features are requested at the same time:

- high power pulse trasmission capability (high amplitude with proper duration) and low magnetization current;
- low leakage inductance, wich allows high steepness and short rise time of the wave form;
- low coupling capacitance, so that a good decoupling and immunity to interferences is reached;
- small size, achivied with the use of toroidal core;
- high primary to secondary withstanding voltage by means of a proper wires insulation and rosin filling;
- international standards compliance.

NEW

Ces transformateurs sont réalisés à partir de matériaux ferrites de haute qualité, et sont conçus pour une large gamme d'applications:

- *Pilotage de thyristors et de triacs.*
- *Pilotage de transistors bipolaire et IGBT.*
- *Pilotage des transistors FET et MOSET.*
- *Couplage de ligne pour les transmissions de données à haute vitesse (pour les petites tailles).*

Trois tailles sont disponibles, avec des puissances croissantes, ce qui permet à ces transformateurs d'être utilisés dans les circuits de contrôle et de conversion d'energie électrique pour les basses et moyennes puissances, où les caractéristiques suivantes sont aussi requises:

- *Capacité à transmettre des impulsions de forte puissances (forte amplitude avec durée adaptée) et une faible courant de magnétisation.*
- *Une faible inductance de fuite qui permet de limiter la distorsion du signal.*
- *Une faible capacité de couplage afin qu'une bonne immunité aux interférences soit atteinte.*
- *De petit encombrement réalisé grâce à l'utilisation de noyaux toriques.*
- *Une forte rigidité diélectrique entre le primaire et le secondaire, réalisé par l'utilisation de fil à haute isolation et de résines diélectriques.*
- *Fabriqués en conformité avec les normes internationales.*

Symbol Definitions

Turns Ratio (n)
Turns ratio of the primary winding to each secondary winding; first digit refers to the primary.

Voltage-time Area (U•t)
Minimum Voltage-time product of the pulse amplitude and pulse width, measured at half of the pulse height across the unloaded secondary in the unipolar mode.

Primary Inductance (PRI Induct)
Inductance of the primary winding measured at 10 kHz/0,1 mA (reference values only)

Primary Leakage Inductance (PRI Leak Induct)
Leakage inductance of the primary winding with secondary winding(s) connected in series and short circuited; measured at 100 kHz.

Winding Capacitance (PRI/SEC Cw/w)
Coupling capacitance between primary and secondary winding(s); measured at 10 kHz.

Primary Resistance (PRI DCR)
DC resistance of the primary winding.

Secondary Resistance (SEC DCR)
DC resistance of (each) secondary winding.

Test Voltage (Up)
Unrepeated test voltage at 50 Hz/1 to 2 sec, between primary to secondary winding(s).

NEW

Ignition Current (I c)
Reference current value giving a low voltage - drop under 1 V - across the secondary resistance.

Pulse Rise Time (Tr)
Rise time between 10% and 90% of the output pulse amplitude, measured on the secondary loaded with RL resistor.

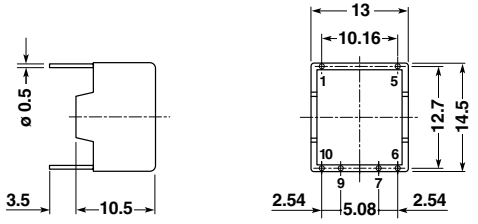
Secondary resistor load (RL)

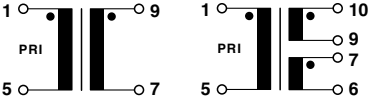
Working Voltage (Ueff)
Maximum rms working voltage of primary winding.

CASE VERSION **Ignition current up to 100 mA**

These small size and low power transformers are fitted on toroid cores of high performance (ferrite). The wide choice of inductance values and turn ratios make them suitable as drivers of thyristors, triacs, bipolar transistors or MOSFET's in a variety of high frequency applications, such as small power supplies, inverters etc., or also as couplers in high speed data trasmission.

Dimensions in mm
Pins are tinned





o Pins
• Start of winding

68H14
69H14

TYPES

NEW

Code	Turns ratio n ± 2%	U•t Vμsec min.	Tr μsec max	PRI Indut mH	PRI Leak Induc μH	PRI/SEC Cw/w pF	PRI DCR Ω	SEC DCR Ω	Ueff V	Up kV
68H14 21 20	1:1	65	0.05	1.0	1.5	35	0.20	0.20	250	2
68H14 21 21	2:1	50	0.05	2.0	3.0	30	0.30	0.15	250	2
68H14 31 20	1:1:1	45	0.05	0.5	0.8	24	0.15	0.15	250	2
69H14 21 20	1:1	40	0.05	0.15	0.7	24	0.07	0.07	600	4
69H14 21 21	1:1	45	0.05	0.5	0.7	30	0.08	0.08	600	4

Turns ratio: first digit refers to the primary.
Tr is measured with RL = 100 Ω
Other type can be supplied according to customer's specifications.

Symbol definitions p. 83

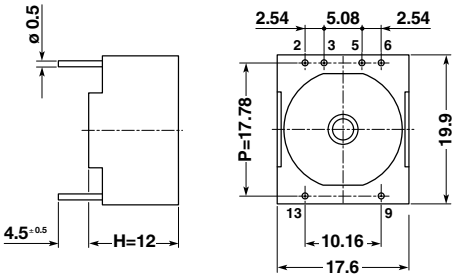
Technical Data

Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
Overtemperature of the windings:	<55°C
Max. windings temperature:	115°C
Approx. weight:	3 g

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

CASE VERSION **Ignition up to 0.5 A**

These small size and low power transformers are fitted on toroid cores of high performance (ferrite). The wide choice of inductance values and turn ratios make them suitable as drivers of thyristors, triacs, bipolar transistors or MOSFET's in a variety of high frequency applications, such as small power supplies, inverters etc.

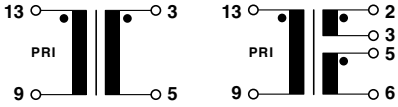


64H20
68H20
69H20

Pins are tinned

Dimensions in mm

o Pins
• Start of winding



Optinal pins

P	H	Types
10.16	14	64H20A - 68H20A - 69H20A
12.70	14	64H20B - 68H20B - 69H20B
15.24	14	64H20C - 68H20C - 69H20C

TYPES

Code	Turns ratio n ±2%	U•t Vμsec min.	Tr μsec max	PRI Indut mH	PRI Leak Induc μH	PRI/SEC Cw/w pF	PRI DCR Ω	SEC DCR Ω	Ueff V	Up kV
64H20 21 20	3:1	150	1	17	230	7	1.10	0.40	600	4
64H20 21 21	1:1	150	1.5	2	30	9	0.37	0.37	600	4
68H20 21 20	1:1	230	0.05	5	1	110	0.55	0.55	250	2
68H20 21 21	2:1	110	0.05	5	4	50	0.55	0.30	250	2
68H20 21 22	3:1	150	0.1	17	14	75	1.10	0.40	250	2
68H20 31 20	1:1:1	150	0.05	2	0.6	70	0.37	0.37	250	2
68H20 31 21	2:1:1	110	0.1	5	6	55	0.55	0.30	250	2
69H20 21 20	1:1	110	0.05	1	1	45	0.15	0.15	600	4
69H20 21 21	1:1	150	0.05	2	1	80	0.20	0.20	600	4
69H20 31 20	1:1:1	110	0.05	1	0.8	60	0.15	0.15	600	4

NEW

Turns ratio: first digit refers to the primary.
Tr is measured with RL = 47 Ω

Symbol definitions p. 83

Technical Data

Climatic category: DIN GKC (-40 to +125°C; humidity cat. C)
Overtemperature of the windings: <55°C
Max. windings temperature: 115°C
Approx. weight: 5 g

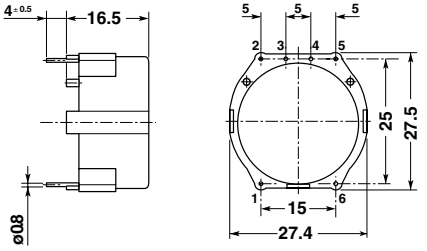
The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

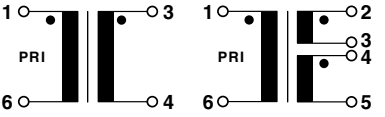
CASE VERSION

Ignition Current up to 1 A

These small size and low power transformers are fitted on toroid cores of high performance (ferrite). The wide choice of inductance values and turn ratios make them suitable as drivers of thyristors, triacs, bipolar transistors or MOSFET's in a variety of high frequency applications, such as small power supplies, inverters etc.

Dimensions in mm
Pins are tinned





o Pins
• Start of winding

64H27
69H27

TYPES

Code	Turns ratio n ±2%	U•t Vµsec min.	Tr µsec max	PRI Indut mH	PRI Leak Induc µH	PRI/SEC Cw/w pF	PRI DCR Ω	SEC DCR Ω	Ueff V	Up kV
64H27 21 20	1:1	230	4	2	25	12	0.37	0.37	600	4
69H27 21 20	1:1	180	0.2	1	1.0	40	0.15	0.15	600	4
69H27 21 21	1:1	280	0.3	2	1.8	60	0.20	0.20	600	4
69H27 21 22	1:1	450	0.4	5	2.0	125	0.33	0.33	600	4
69H27 31 20	1:1:1	180	0.2	1	1.0	45	0.15	0.15	600	4
69H27 31 21	2:1:1	120	0.2	2	2.0	40	0.20	0.10	600	4
69H27 31 22	2:1:1	220	0.2	5	3.5	80	0.35	0.16	600	4

NEW

Turns ratio: first digit refers to the primary.
Tr is measured with RL = 10 Ω
Other type can be supplied according to customer's specifications.

Symbol definitions p. 83

Technical Data

Climatic category:	DIN GKC (-40 to +125°C)
Overtemperature of the windings:	<55°C
Max. windings temperature:	115°C
Approx. weight:	16 g

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

These transformers are specially designed to connect the power lines (typically up to 250 Vac) to the power carrier transmission equipment, which exchange information by sending data on the existing domestic or also extra domestic.

They feature isolation between primary and secondary togheter with small size, no tuning requirement and an operating band 60 - 148,5 kHz.

The transformers comply with EN 50065-1 standards, and are used on data transmission equipment for the following applications.

- energy distribution and supply management (not only electrical but also gas and water supply), making use of power carrier trasmission for teleoperation an "telemetering" of the user meters;
- energy consuption optimization throught a suitable time management of the power, in agreement with policy of the distribution Companies;
- home automation system, which includes not only timed or teleoperated switching of domestic appliances, but also power breaking in case of overload, according to a preset priority of the loads.

Ces transformateurs sont spécialement conçus pour connecter les lignes d'alimentations (typiquement jusqu'à 250 Vac) à l'équipement de transmission sur les lignes de puissance, en permettant l'échange d'information par l'envoie de donnée sur le réseau domestique et extra domestique.

Ils présentent pour un faible encombrement, une forte valeur d'isolation entre le primaire et le secondaire, et une gamme de fonctionnement comprise entre 60 et 148.5 kHz.

NEW

Ces transformateurs sont en conformité avec la norme EN 50065-1 et sont utilisés dans les équipements de transmission des données pour les applications suivantes:

- *la distribution d'énergie et sa gestion (pas seulement électrique mais aussi le gaz et l'alimentation en eau), par l'utilisation de la transmission sur les lignes de puissance pour la télémaintenance et la télémétrie de l'usager.*
- *L'optimisation de la consommation d'énergie par une utilisation adaptée de la puissance en fonction de l'heure, en accord avec la politique tarifaire des compagnies distributrices.*
- *Les systèmes domotiques, qui incluent le contrôle sur horloge ou à distance de certaines applications domestiques, mais aussi la coupure de l'alimentation en cas de surcharges, selon des priorités de charges prédéfinis.*

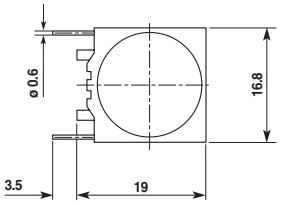
Power Line Modem Transformers

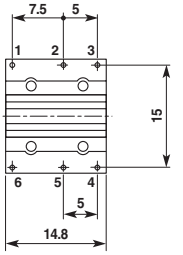
These transformers are suitable to interface the power line modem. They find a wide application wherever an high isolation resonant coupling is required.

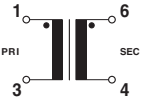
63V19 21 00 - 63V19 21 01

These types are made with high-permeability toroid core (ferrite), and are suitable to interface the modem ST 7538, or equivalent.

Dimensions in mm - Pins are tinned





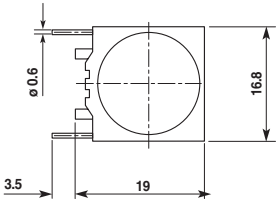


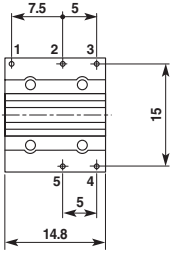
o Pins
• Start of winding

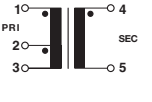
Optional pins: PRI 1-2 SEC 6-5

63V19 21 30 - 63V19 21 31

These types are made with toroid core in molypermalloy powder (MPP), and are suitable to interface the modem ST 7538/7, or equivalent.







o Pins
• Start of winding

TYPES

Code	Turns ratio PRI/SEC ± 2%	Turns ratio tap (1-3/2-3) ± 2%	PRI inductance	PRI Leak inductance typical µH	Capacity PRI/SEC pF	Unloaded factor Q typical	Test voltage (2 sec) kV
63V19 21 00	2 : 1		≥2 mH	3	15		4
63V19 21 01	1 : 1		≥1 mH	3	15		4
63V19 21 30	5 : 1	5 : 1	207 µH	15		30	4
63V19 21 31	3.28 : 1	3.28 : 1	265 µH	8		35	4

Turns ratio: first digit refers to the primary.
Table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

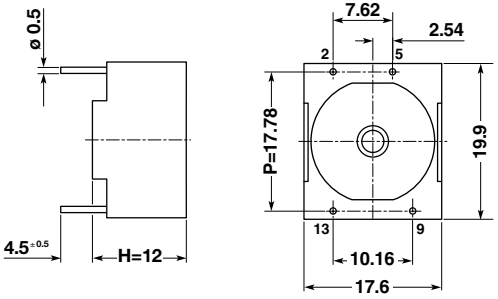
Primary inductance:	at 20°C and 10 kHz, 0.1 mA
Primary Inductance tolerance:	±15% for 63V19 21 30 and 63V19 21 31 types (MPP core)
Primary leakage inductance:	at 20°C and 100 kHz
Unloaded Q factor:	at 20°C and 100 kHz
Approx. weight:	5 g

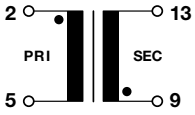
The transformers are designed and tested in accordance with EN 138100; EN 60938
The cases are of flame-retardant plastic material in accordance with UL 94V-0

CASE VERSION

These transformers are fitted with high-permeability toroid core (ferrite). They are suitable to interface the power line modem and find a wide application wherever an high isolation resonant coupling is required.

Dimensions in mm
Pins are tinned





o Pins
• Start of winding

64H20 21 30
64H20 21 31
Horizontal mounting

Optional Pins

P	H	Codes
10.16	14	64H20A 21 30 - 64H20A 21 31
12.70	14	64H20B 21 30 - 64H20B 21 31
15.24	14	64H20C 21 30 - 64H20C 21 31

NEW

TYPES

Code	Turns ratio n ± 2%	PRI Induct mH	SEC Induct mH	PRI Leak Induct typical µH	PRI DCR typical Ω	SEC DCR typical Ω	Test voltage kV
64H20 21 30	1 : 2	12	48	250	1.2	2.4	4
64H20 21 31	1 : 2.7	2	15	30	0.74	2	4

Turns ratio: first digit refers to the primary.
Table shows the standard types. Other types can be supplied according to customer's specifications.

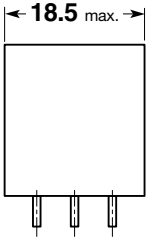
Technical Data

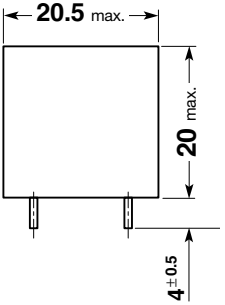
Primary inductance:	at 20°C and 10 kHz, 0,1 mA
Primary Inductance tolerance:	+50% -30%
Primary leakage inductance:	at 20°C and 10 kHz, 0,1 mA
Approx. weight:	5 g

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

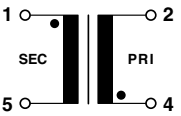
CASE VERSION

These transformers are fitted with high-permeability ferrite core U13 size. They are suitable to interface the power line modem and find a wide application wherever an high isolation resonant coupling is required.



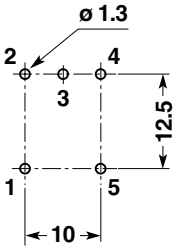


64U13 V2

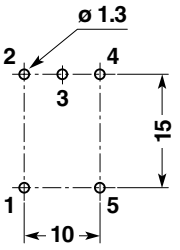


o Pins
• Start of winding

Pins arrangements



A standard



B optional

Dimensions in mm
Pins are tinned

TYPES

Code (1)	Turns ratio n ± 2%	PRI Induct mH	SEC Induct mH	PRI Leak Induct typical µH	PRI DCR typical Ω	SEC DCR typical Ω	Test voltage kV
64U13 V2 21 30	1 : 2	25	100	250	3.4	7.6	4
64U13 V2 21 32	1 : 1	84	84	840	6.4	6.4	4

(1) Optional pins arrangement: to add B.
Turns ratio: first digit refers to the primary.
Table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

Primary inductance:	at 20°C and 1 kHz, 1 Vac
Primary Inductance tolerance:	+50% -30%
Primary leakage inductance:	at 20°C and 1 kHz, 1 Vac
Approx. weight:	5 g

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

Current sense transformers are basically AC current detector providing galvanic separation between the circuit under measurement and the control circuit; they are therefore used as sensing devices mainly in the feedback circuit of the SMPS.

They effectively perform like simple current/voltage transducers, as they present across the properly loaded secondary an output voltage proportional to the primary current.

These component allow a low cost regulation of SMPS lighting circuit and in general switch controls at frequencies above 20 kHz, and are offered in two configurations, i.e. as inductors without the internally wired primary loop, or as transformer with primary loop inside.

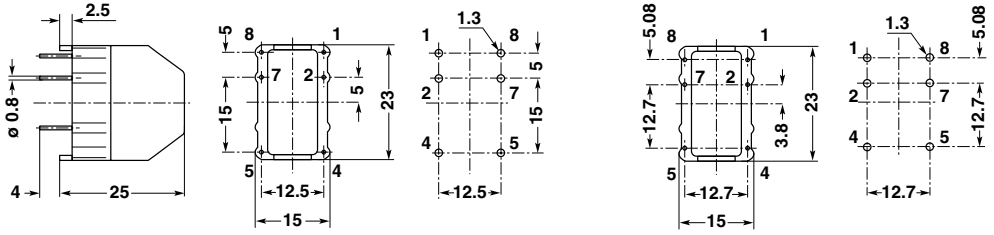
Les capteurs de courant sont des détecteurs pour le courant alternatif, qui assurent une isolation galvanique entre le circuit sous mesure et le circuit de contrôle; ils sont principalement utilisés dans les circuits "feedback" dans les alimentations à découpage.

Ils fonctionnent comme de simples transducteurs entre le courant et la tension, en délivrant à travers le secondaire une tension proportionnelle au courant du primaire.

Ces composants permettent une régulation économique des alimentations à découpage (SMPS) pour des fréquences supérieures à 20 kHz, et sont proposés dans deux configurations: un inducteur sans le circuit primaire ou un transformateur avec le primaire intégré.

Current Sense Transformers

These current sense transformers are fitted with high-permeability toroidal core (ferrite) and feature across the secondary (under given conditions) a voltage proportional to the primary current.
They are used as control and protection devices to sense current without any disturbance to the circuits in SMPS, lighting and UPS equipment.



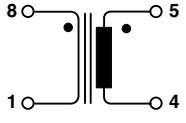
69V25
Vertical mounting

viewed on
component side

69V25T
Vertical mounting

Dimensions in mm
Pins are tinned

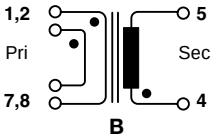
Blind pins: 2 - 7



A

Schematics

o Pins
• Start of winding



B

TYPES

Code		Turns ratio Pri/Sec	Pri current A	Sec Induct. mH Rated	DC resistance Ω max.	Recomm. terminat. resist. Ω nom.	Schem
69V25 50 50	69V25T 50 50	1/50	5	5	0.7	50	A
69V25 51 00	69V25T 51 00	1/100	5	20	1.4	100	A
69V25 52 00	69V25T 52 00	1/200	5	80	4.5	200	A
69V25 53 00	69V25T 53 00	1/300	5	180	11	300	A
69V25 A0 50	69V25T A0 50	1/50	10	5	0.7	50	B
69V25 A1 00	69V25T A1 00	1/100	10	20	1.4	100	B
69V25 A2 00	69V25T A2 00	1/200	10	80	4.5	200	B
69V25 A3 00	69V25T A3 00	1/300	10	180	11	300	B

Electrical specifications with rated secondary resistance and 1 turn primary.
Table shows the standard types. Other types can be supplied according to customer's specifications.

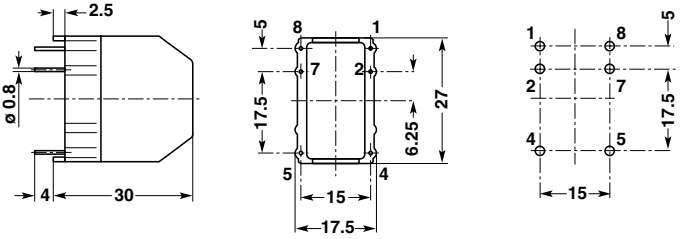
Technical Data

Rated inductance:	at +20°C and 10 kHz, 0.1 mA
Inductance tolerance:	+50 -30%
Operating frequency:	20 kHz plus
Current primary peak (1 turn):	20A
Operating temperature:	-30 to +125°C
Dielectric strenght Pri/Sec:	4000 Vac
Scale factor with rated terminating resistance:	Vout 1V per 1A
Approx. weight:	12 g

See technical notes p. 92.

Current Sense Transformers

These current sense transformers are fitted with high-permeability toroidal core (ferrite) and feature across the secondary (under given conditions) a voltage proportional to the primary current.
They are used as control and protection devices to sense current without any disturbance to the circuits in SMPS, lighting and UPS equipment.

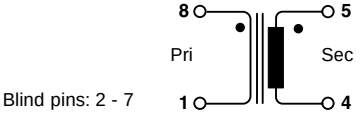


Dimensions in mm
Pins are tinned

viewed on component side

69V30
Vertical mounting

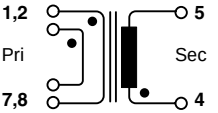
Schematics



Blind pins: 2 - 7

A

o Pins
• Start of winding



B

TYPES

Code	Turns ratio Pri/Sec	Pri current A	Sec Inductance mH (Rated)	DC resistance Ω max.	Schem.
69V30 55 00	1/500	5	600	18	A
69V30 A5 00	1/500	10	600	18	B
69V30 B1 00	1/100	20	20	1.4	B
69V30 B2 00	1/200	20	80	4.5	B
69V30 B3 00	1/300	20	180	11	B
69V30 B5 00	1/500	20	600	18	B

Electrical specifications with rated secondary resistance and 1 turn primary.
Table shows the standard types. Other types can be supplied according to customer's specifications.

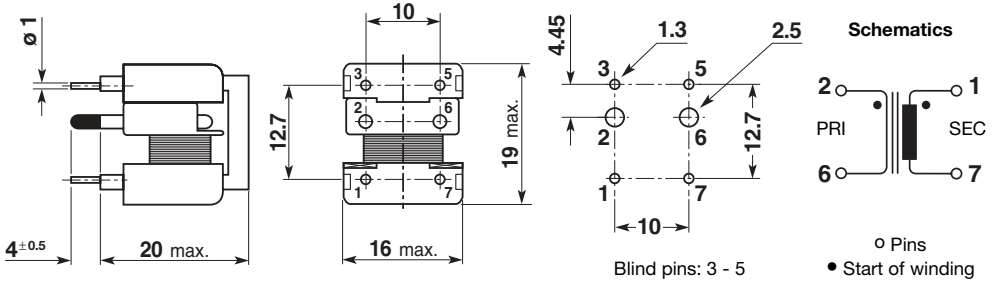
Technical Data

Rated inductance:	at +20°C and 10 kHz, 0.1 mA
Inductance tolerance:	+50 -30%
Operating frequency:	20 kHz plus
Current primary peak (1 turn):	20A
Operating temperature:	-30 to +125°C
Dielectric strenght Pri/Sec:	4000 Vac
Scale factor with rated terminating resistance:	Vout 1V per 1A
Approx. weight:	16 g

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

Current Sense Transformers

These current sense transformers are fitted with high-permeability core (ferrite) U13 size and feature across the secondary (under given conditions) a voltage proportional to the primary current.
They are used as control and protection devices to sense current without any disturbance to the circuits in SMPS, lighting and UPS equipment.



67U13V2
Vertical mounting

Dimensions in mm
Pins are tinned

viewed on
component side

TYPES

Code	Turns ratio PRI/SEC	PRI current A	SEC Inductance (Rated) mH	DC resistance Ω max.
67U13V2 00 50	1/50	25	3.5	2
67U13V2 01 00	1/100	25	15	4.5
67U13V2 02 00	1/200	25	60	9
67U13V2 03 00	1/300	25	120	14
67U13V2 05 00	1/500	25	350	25
67U13V2 07 00	1/700	25	640	40

Electrical specifications with rated secondary resistance and 1 turn primary.
Table shows the standard types. Other types can be supplied according to customer's specifications.

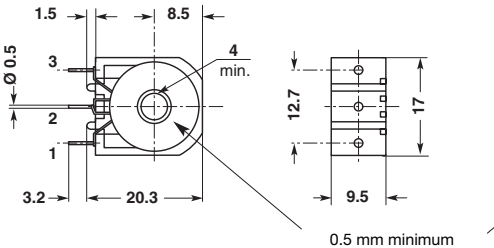
Technical Data

Rated inductance:	at +20°C and 10 kHz, 0.1 mA
Inductance tolerance:	+50 -30%
Operating frequency:	20 kHz plus
Current primary peak (1 turn):	20A
Operating temperature:	-30 to +125°C
Dielectric strenght Pri/Sec:	1500 Vac
Scale factor with rated terminating resistance:	Vout 1V per 1A
Approx. weight:	8 g

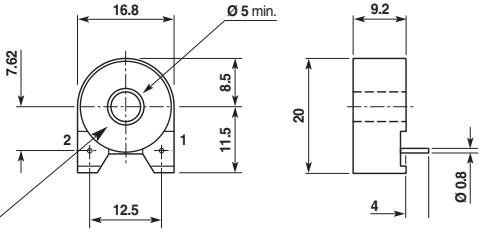
The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

Current Sense Inductors

These current sense inductors - without built-in primary - are made with high-permeability core (ferrite), and feature across the secondary (under given conditions) a voltage proportional to the primary current. They are used as control and protection devices to sense current without any disturbance to the circuits in SMPS. lighting and UPS equipment.

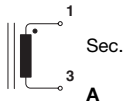


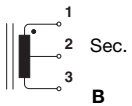
69V21
Vertical mounting



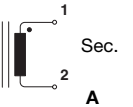
69H21
Horizontal mounting

Dimensions in mm
Pins are tinned





Schematics
o Pins
● Start of winding



TYPES

Code		Secondary total turns	Inductance mH (rated)	DC Resistance Ω max	Recomm. Termination resist. Ω	Schem.
69V21 00 50	69H21 00 50	50	5	0.7	50	A
69V21 01 00	69H21 01 00	100	20	1.4	100	A
69V21 02 00	69H21 02 00	200	80	4.5	200	A
69V21 03 00	69H21 03 00	300	180	11	300	A
69V21 C0 50		25 + 25	5	0.7	50	B
69V21 C1 00		50 + 50	20	1.4	100	B
69V21 C2 00		100 + 100	80	4.5	200	B
69V21 C3 00		150 + 150	180	11	300	B

Electrical specifications with rated secondary resistance and 1 turn primary.
Table shows the standard types. Other types can be supplied according to customer's specifications.

Technical Data

Rated inductance:	at 20°C; 10 kHz, 0.1 mA
Inductance tolerance:	+50 -30%
Operating frequency:	20 kHz plus
Current primary peak (1 turn):	20A
Operating temperature:	-30 to +125°C
Dielectric strenght Pri/Sec:	2500 Vac
Scale factor with terminating resistance:	Vout 1 V per 1 A
Approx weight:	4 g

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

NEW

The new line of small size switching transformers is intended for low power switched-mode power supplies (SMPS).

In effect, for the electronic and electrical applications, the interest toward the SMPS is growing also for the small power range, as they show in comparison to the traditional 50 Hz supplies smaller size, better efficiency, good output voltage regulation and finally comparable or lower cost.

These transformers are manufactured on E-shaped ferrite cores in three popular sizes: E13 - E16 and E20.

The range of characteristic of such products is really very wide as most of the users ask customized products. However, to meet general purpose requirements, specific versions have been designed to work in combination with some well known integrated circuits.

When possible, also a low cost version in alternative to the low loss version have been foreseen.

Cette nouvelle gamme de transformateurs à faible encombrement est adaptée aux alimentations à découpage de faible puissance.

En effet, pour les applications électroniques et électriques, l'intérêt grandissant envers l'alimentation à découpage touche aussi les faibles puissances, car comparativement aux transformateurs traditionnels 50 Hz, ils présentent un faible encombrement, un meilleur rendement, une bonne stabilité de la tension délivrée, et un coùt équivalent ou plus faible.

Ces transformateurs sont réalisés sur des noyaux ferrite 'E' sur trois tailles standard: E13 - E16 et E20.

La gamme des caractéristiques de ces produits est très étendue étant donné que la majorité des utilisateurs demandent des produits spécifiques. Néanmoins afin de répondre aux exigences générales, des modèles ont été étudiés pour travailler en combinaison avec les circuits actifs les plus répandus.

Lorsque cela était possible, une version économique en alternative à la version faible perte a été prévue.

NEW

General Purpose
Small Power Switching Transformers

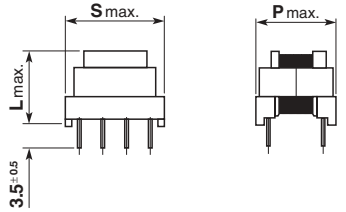
TYPES
67E13 H
69E13 H

Power up to 2 W

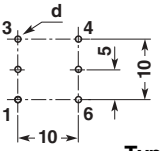
These transformers are fitted with high-performance ferrite cores E13 size, and are designed for use in flyback or forward converters AC-DC as well DC-DC. Typical applications are low power/low cost power supplies in:

* household appliances
* domotic appliances
* office equipment: computers, fax, printers, etc.
* battery chargers
* power supply in TVC, VCR and audio equipment.

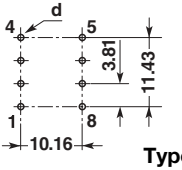
Dimensions in mm
Pins are tinned



Pins arrangements



Type A
S=13
P=13

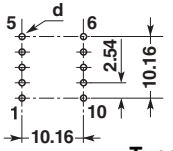


Type B
S=14.2
P=14.2

67E13 H Test Voltage 2 kV - L = 11.9
d = 1

69E13 H Test Voltage 4 kV - L = 14.9
d = 1.3

viewed on
component side



Type C
S=13
P=14.2

As there are many variables in the construction of such transformers and they are generally manufactured according to the customer's specifications, in the following only the general features and the design guide-lines are listed.

* Input Voltage: 170 - 265 Vac
* Output Voltage: 5 - 12 - 24 V
* Pins arrangements: A-B-C
* Output power: up to 2 W
* Switching frequency: up to 100 kHz
* Overtemperature of the windings: < 55°C
* Max. windings temperature: 115°C
* Test voltage for basic insulation primary and bias to secondary winding(s): 2 kV - 50 Hz, 2 sec
* Test voltage for reinforced insulation primary and bias to secondary winding(s): 4 kV - 50 Hz, 2 sec
* Test voltage primary to bias winding: 500 V - 50 Hz, 2 sec
* Approx. weight: 7 g

The inductance is measured at 10 kHz, 1V
Bias winding if requested.

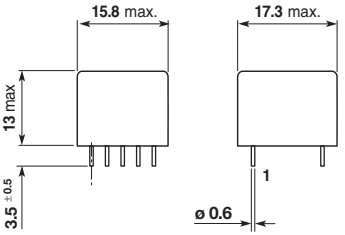
The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

CASE VERSION **Power up to 2 W**

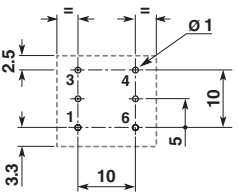
These transformers are fitted with high-performance ferrite cores E13 size, and are designed for use in flyback or forward converters AC-DC as well DC-DC. Typical applications are low power/low cost power supplies in:

* household appliances
* domotic appliances
* office equipment: computers, fax, printers, etc.
* battery chargers
* power supply in TVC, VCR and audio equipment.

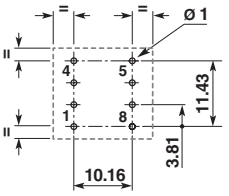
Dimensions in mm
Pins are tinned



Pins arrangements

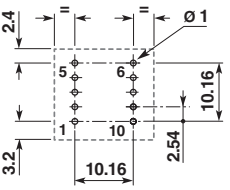


Type A



Type B

Test Voltage 3.75 kV



viewed on
component side

Type C

As there are many variables in the construction of such transformers and they are generally manufactured according to the customer's specifications, in the following only the general features and the design guide-lines are listed.

* Input Voltage:	170 - 265 Vac	* Test voltage insulation primary and bias to secondary winding(s):	3.75 kV - 50 Hz, 2 sec
* Output Voltage:	5 - 12 - 24 V		
* Pins arrangements:	A-B-C	* Test voltage primary to bias winding:	500 V - 50 Hz, 2 sec
* Output power:	up to 2 W		
* Switching frequency:	up to 100 kHz	* Resin filled	
* Overtemperature of the windings:	< 55°C	* Approx. weight:	8 g
* Max. windings temperature:	115°C		

The inductance is measured at 10 kHz, 1V
Bias winding if requested.

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers and cases are of flame-retardant plastic material in accordance with UL 94V-0

General Purpose
Small Power Switching Transformers

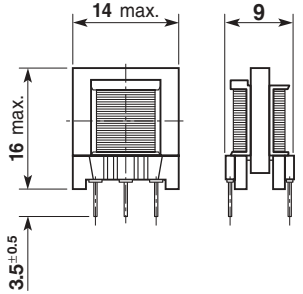
TYPES
67E13 V
69E13 V

Power up to 2 W

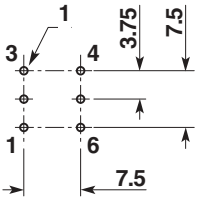
These transformers are fitted with high-performance ferrite cores E13 size, and are designed for use in flyback or forward converters AC-DC as well DC-DC. Typical applications are low power/low cost power supplies in:

* household appliances
* domotic appliances
* office equipment: computers, fax, printers, etc.
* battery chargers
* power supply in TVC, VCR and audio equipment.

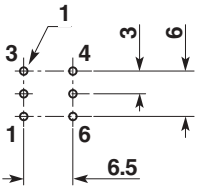
Dimensions in mm
Pins are tinned



Pins arrangements



Type A



Type B

viewed on
component side

67E13 V Test Voltage 2 kV
69E13 V Test Voltage 4 kV

As there are many variables in the construction of such transformers and they are generally manufactured according to the customer's specifications, in the following only the general features and the design guide-lines are listed.

* Input Voltage: 170 - 265 Vac
* Output Voltage: 5 - 12 - 24 V
* Pins arrangements: A-B
* Output power: up to 2 W
* Switching frequency: up to 100 kHz
* Overtemperature of the windings: < 55°C
* Max. windings temperature: 115°C
* Test voltage for basic insulation primary and bias to secondary winding(s): 2 kV - 50 Hz, 2 sec
* Test voltage for reinforced insulation primary and bias to secondary winding(s): 4 kV - 50 Hz, 2 sec
* Test voltage primary to bias winding: 500 V - 50 Hz, 2 sec
* Approx. weight: 7 g

The inductance is measured at 10 kHz, 1V
Bias winding if requested.

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

General Purpose
Small Power Switching Transformers

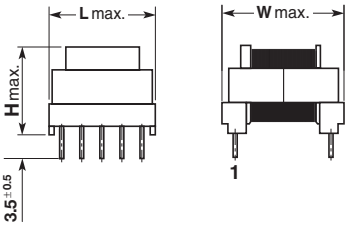
TYPES
67E16 H
69E16 H
69E16HG

Power up to 5 W

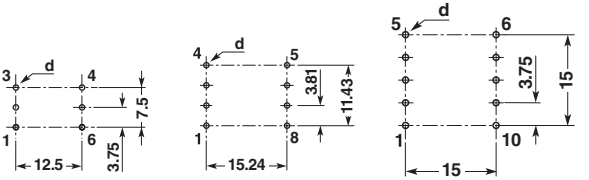
These transformers are fitted with high-performance ferrite cores E16 size, and are designed for use in flyback or forward converters AC-DC as well DC-DC. Typical applications are low power/low cost power supplies in:

* household appliances
* domotic appliances
* office equipment: computers, fax, printers, etc.
* battery chargers
* power supply in TVC, VCR and audio equipment.

Dimensions in mm
Pins are tinned



Pins arrangements viewed on component side



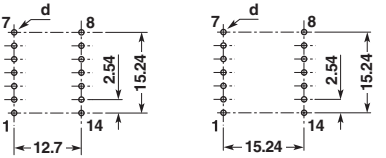
Type A
L = 17
W = 17

Type B
L = 17
W = 19

Type C
L = 19
W = 22.7

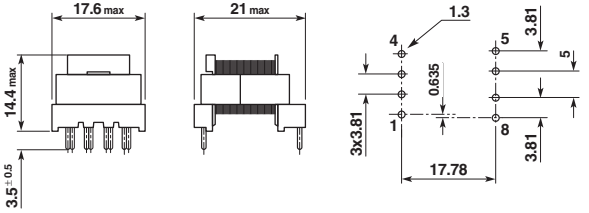
67E16 H Test Voltage 2 kV - H = 13.5
d = 1

69E16 H Test Voltage 4 kV - H = 17
d = 1.3



Type D
L = 19
W = 17

Type E
L = 17
W = 19



Type G
69E16 HG only

69E16 HG Test Voltage 4 kV

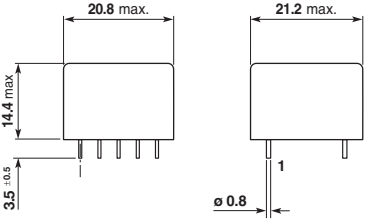
As there are many variables in the construction of such transformers and they are generally manufactured according to the customer's specifications, only the general features and the design guide-lines are listed.
See Technical data p. 98-b

The transformers are designed and tested in accordance with EN 138100; EN 60938
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

CASE VERSION **Power up to 5 W**

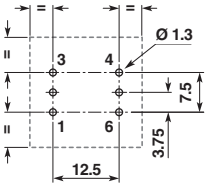
These transformers are fitted with high-performance ferrite cores E16 size, and are designed for use in flyback or forward converters AC-DC as well DC-DC. Typical applications are low power/low cost power supplies in:

* household appliances
* domotic appliances
* office equipment: computers, fax, printers, etc.
* battery chargers
* power supply in TVC, VCR and audio equipment.

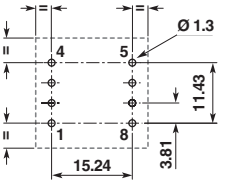


Test Voltage 3.75 kV

Pins arrangements



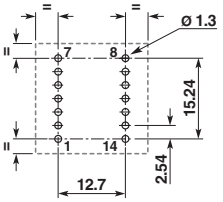
Type A



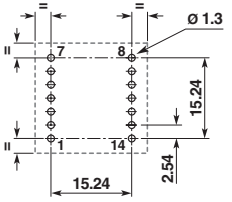
Type B

viewed on component side

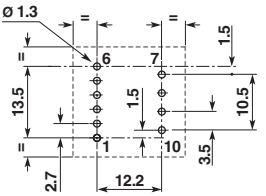
Dimensions in mm
Pins are tinned



Type D



Type E



Type F

As there are many variables in the construction of such transformers and they are generally manufactured according to the customer's specifications, in the following only the general features and the design guide-lines are listed.

* Input Voltage:	170 - 265 Vac	* Test voltage insulation primary and bias to secondary winding(s):	3.75 kV - 50 Hz, 2 sec
* Output Voltage:	5 - 12 - 24 V		
* Pins arrangements:	A-B-D-E-F	* Test voltage primary to bias winding:	500 V - 50 Hz, 2 sec
* Output power:	up to 5 W		
* Switching frequency:	up to 100 kHz	* Resin filled	
* Overtemperature of the windings:	< 55°C	* Approx. weight:	17 g
* Max. windings temperature:	115°C		

The inductance is measured at 10 kHz, 1V
Bias winding if requested.

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers and cases are of flame-retardant plastic material in accordance with UL 94V-0

General Purpose
Small Power Switching Transformers

TYPES
67E16 V

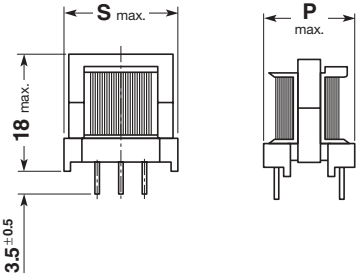
Power up to 5 W

These transformers are fitted with high-permeability ferrite cores E16 size, and are designed for use in flyback or forward converters AC-DC as well DC-DC. Typical applications are low power/low cost power supplies in:

* household appliances
* domotic appliances
* office equipment: computers, fax, printers, etc.
* battery chargers
* power supply in TVC, VCR and audio equipment.

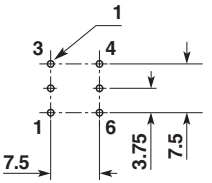
Dimensions in mm
Pins are tinned

viewed on
component side

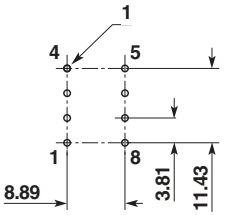


67E16V Test Voltage 2 kv

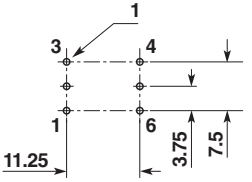
Pins arrangements



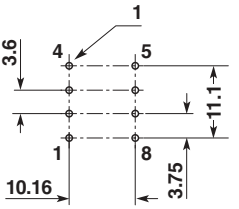
Type A
S= 17 - P= 11.5



Type B
S= 18 - P= 11.5



Type C
S= 17.5 - P= 14.5



Type D
S= 17.5 - P= 14.5

As there are many variables in the construction of such transformers and they are generally manufactured according to the customer's specifications, in the following only the general features and the design guide-lines are listed.

* Input Voltage:	170 - 265 Vac
* Output Voltage:	5 - 12 - 24 V
* Pins arrangements:	A-B-C-D
* Output power:	up to 5 W
* Switching frequency:	up to 100 kHz
* Overtemperature of the windings:	< 55°C
* Max. windings temperature:	115°C
* Test voltage insulation primary and bias to secondary winding(s):	2 kV - 50 Hz, 2 sec
* Test voltage primary to bias winding:	500 V - 50 Hz, 2 sec
* Approx. weight:	10 g

The inductance is measured at 10 kHz, 1V
Bias winding if requested.

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

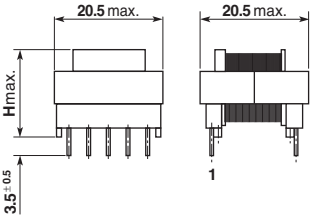
General Purpose
Small Power Switching Transformers

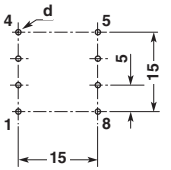
TYPES
67E20 H
69E20 H
69E20 HG

Power up to 10 W

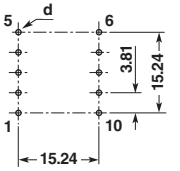
These transformers are fitted with high-performance ferrite cores E20 size, and are designed for use in flyback or forward converters AC-DC as well DC-DC. Typical applications are low power/low cost power supplies in:

* household appliances
* domotic appliances
* office equipment: computers, fax, printers, etc.
* battery chargers
* power supply in TVC, VCR and audio equipment.

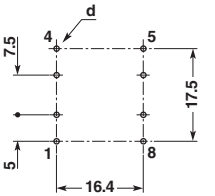




Type A

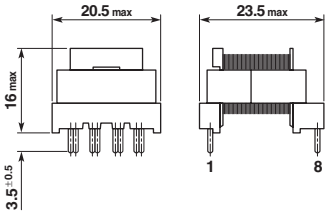


Type B

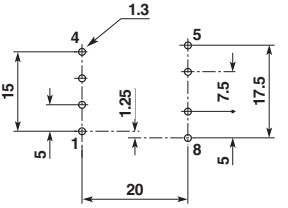


Type C

67E20 H Test Voltage 2 kV - H = 16.5 - d=1
69E20 H Test Voltage 4 kV - H = 20 - d=1.3



69E20 HG Test Voltage 4 kV



Type G 69E20 HG only

As there are many variables in the construction of such transformers and they are generally manufactured according to the customer's specifications, in the following only the general features and the design guide-lines are listed.

* Input Voltage: 170 - 265 Vac
* Output Voltage: 5 - 12 - 24 V
* Pins arrangements: A-B-C-G
* Output power: up to 10 W
* Switching frequency: up to 100 kHz
* Overtemperature of the windings: < 55°C
* Max. windings temperature: 115°C
* Test voltage for basic insulation primary and bias to secondary winding(s): 2 kV - 50 Hz, 2 sec
* Test voltage for reinforced insulation primary and bias to secondary winding(s): 4 kV - 50 Hz, 2 sec
* Test voltage primary to bias winding: 500 V - 50 Hz, 2 sec
* Approx. weight: 13 g

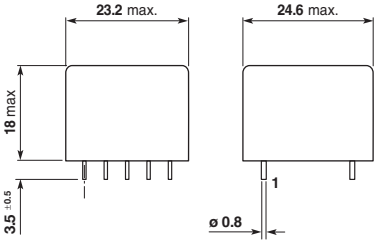
The inductance is measured at 10 kHz, 1V
Bias winding if requested.

The transformers are designed and tested in accordance with EN 138100; EN 60938
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

CASE VERSION **Power up to 10 W**

These transformers are fitted with high-performance ferrite cores E20 size, and are designed for use in flyback or forward converters AC-DC as well DC-DC. Typical applications are low power/low cost power supplies in:

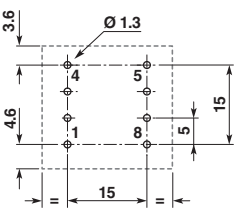
* household appliances
* domotic appliances
* office equipment: computers, fax, printers, etc.
* battery chargers
* power supply in TVC, VCR and audio equipment.



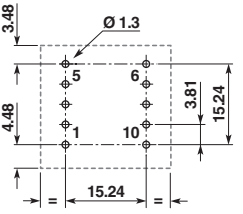
Test Voltage 3.75 kV

Dimensions in mm
Pins are tinned

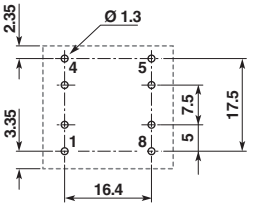
Pins arrangements



Type A



Type B



Type C

viewed on
component side

As there are many variables in the construction of such transformers and they are generally manufactured according to the customer's specifications, in the following only the general features and the design guide-lines are listed.

* Input Voltage:	170 - 265 Vac
* Output Voltage:	5 - 12 - 24 V
* Pins arrangements:	A-B-Y-C
* Output power:	up to 10 W
* Switching frequency:	up to 100 kHz
* Overtemperature of the windings:	< 55°C
* Max. windings temperature:	115°C
* Test voltage insulation primary and bias to secondary winding(s):	3.75 kV - 50 Hz, 2 sec
* Test voltage primary to bias winding:	500 V - 50 Hz, 2 sec
* Resin filled	
* Approx. weight:	22 g

The inductance is measured at 10 kHz, 1V
Bias winding if requested.

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers and cases are of flame-retardant plastic material in accordance with UL 94V-0

General Purpose
Small Power Switching Transformers

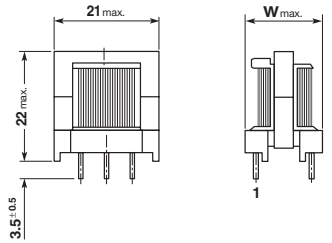
TYPES
67E20 V

Power up to 10 W

These transformers are fitted with high-performance ferrite cores E20 size, and are designed for use in flyback or forward converters AC-DC as well DC-DC. Typical applications are low power/low cost power supplies in:

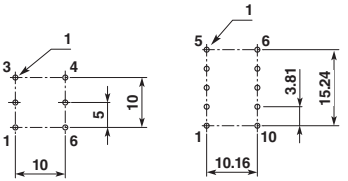
* household appliances
* domotic appliances
* office equipment: computers, fax, printers, etc.
* battery chargers
* power supply in TVC, VCR and audio equipment.

Dimensions in mm
Pins are tinned

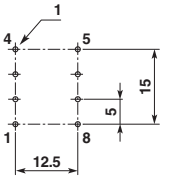


67E20 V Test Voltage 2 kV

Pins arrangements



Type A W=13 **Type B** W=13



viewed on component side

Type C W=15.5

As there are many variables in the construction of such transformers and they are generally manufactured according to the customer's specifications, in the following only the general features and the design guide-lines are listed.

* Input Voltage: 170 - 265 Vac
* Output Voltage: 5 - 12 - 24 V
* Pins arrangements: A-B-C
* Output power: up to 10 W
* Switching frequency: up to 100 kHz
* Overtemperature of the windings: < 55°C
* Max. windings temperature: 115°C
* Test voltage for basic insulation primary and bias to secondary winding(s): 2 kV - 50 Hz, 2 sec
* Test voltage for reinforced insulation primary and bias to secondary winding(s): 4 kV - 50 Hz, 2 sec
* Test voltage primary to bias winding: 500 V - 50 Hz, 2 sec
* Approx. weight: 13 g

The inductance is measured at 10 kHz, 1V
Bias winding if requested.

The transformers are designed and tested in accordance with EN 138100; EN 60938
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

General Purpose
Small Power Switching Transformers

TYPES
67E25 H
69E25 H

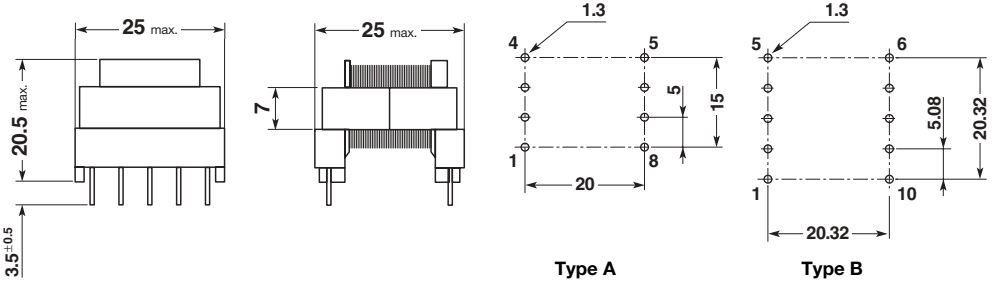
Power up to 20 W

These transformers are fitted with high-permeability ferrite cores E25 size, and are designed for use in flyback or forward converters AC-DC as well DC-DC. Typical applications are low power/low cost power supplies in:

* household appliances
* domotic appliances
* office equipment: computers, fax, printers, etc.
* battery chargers
* power supply in TVC, VCR and audio equipment.

Dimensions in mm
Pins are tinned

Pins arrangements



67E25 H Test Voltage 2 kV
69E25 H Test Voltage 4 kV

viewed on
component side

As there are many variables in the construction of such transformers and they are generally manufactured according to the customer's specifications, in the following only the general features and the design guide-lines are listed.

* Input Voltage: 170 - 265 Vac
* Output Voltage: 5 - 12 - 24 V
* Pins arrangements: A-B
* Output power: up to 20 W
* Switching frequency: up to 100 kHz
* Overtemperature of the windings: < 55°C
* Max. windings temperature: 115°C
* Test voltage for basic insulation primary and bias to secondary winding(s): 2 kV - 50 Hz, 2 sec
* Test voltage for reinforced insulation primary and bias to secondary winding(s): 4 kV - 50 Hz, 2 sec
* Test voltage primary to bias winding: 500 V - 50 Hz, 2 sec
* Approx. weight: 26 g

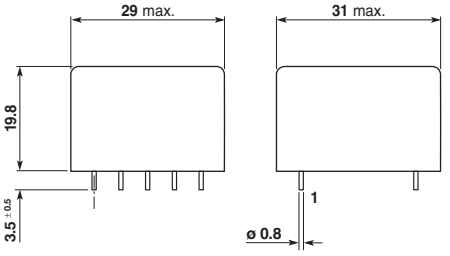
The inductance is measured at 10 kHz, 1V
Bias winding if requested.

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

CASE VERSION **Power up to 20 W**

These transformers are fitted with high-permeability ferrite cores E25 size, and are designed for use in flyback or forward converters AC-DC as well DC-DC. Typical applications are low power/low cost power supplies in:

* household appliances
* domotic appliances
* office equipment: computers, fax, printers, etc.
* battery chargers
* power supply in TVC, VCR and audio equipment.

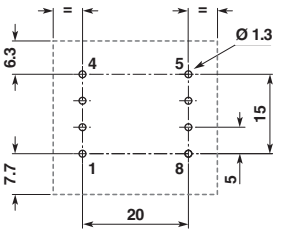


Test Voltage 3.75 kV

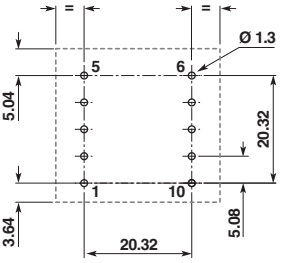
Dimensions in mm
Pins are tinned

Pins arrangements

Type A



Type B



viewed on component side

As there are many variables in the construction of such transformers and they are generally manufactured according to the customer's specifications, in the following only the general features and the design guide-lines are listed.

* Input Voltage:	170 - 265 Vac	* Test voltage insulation primary and bias to secondary winding(s):	3.75 kV - 50 Hz, 2 sec
* Output Voltage:	5 - 12 - 24 V		
* Pins arrangements:	A-B	* Test voltage primary to bias winding:	500 V - 50 Hz, 2 sec
* Output power:	up to 20 W		
* Switching frequency:	up to 100 kHz	* Resin filled	
* Overtemperature of the windings:	< 55°C	* Approx. weight:	35 g
* Max. windings temperature:	115°C		

The inductance is measured at 10 kHz, 1V
Bias winding if requested.

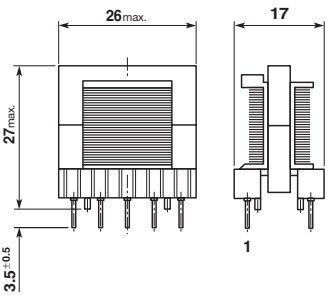
The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers and cases are of flame-retardant plastic material in accordance with UL 94V-0

CASE VERSION **Power up to 20 W**

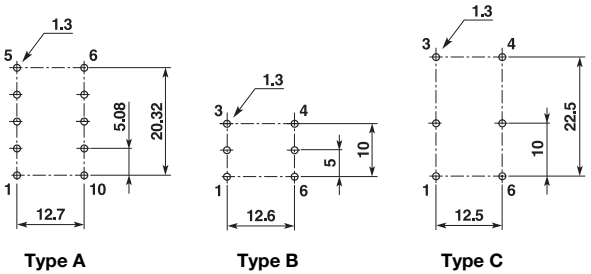
These transformers are fitted with high-permeability ferrite cores E25 size, and are designed for use in flyback or forward converters AC-DC as well DC-DC. Typical applications are low power/low cost power supplies in:

* household appliances
* domotic appliances
* office equipment: computers, fax, printers, etc.
* battery chargers
* power supply in TVC, VCR and audio equipment.

Dimensions in mm
Pins are tinned



Pins arrangements



67E25V
Test Voltage 2 kV

viewed on
component side

As there are many variables in the construction of such transformers and they are generally manufactured according to the customer's specifications, in the following only the general features and the design guide-lines are listed.

* Input Voltage: 170 - 265 Vac
* Output Voltage: 5 - 12 - 24 V
* Pins arrangements: A-B-C
* Output power: up to 20 W
* Switching frequency: up to 100 kHz
* Overtemperature of the windings: < 55°C
* Max. windings temperature: 115°C
* Test voltage insulation primary and bias to secondary winding(s): 2 kV - 50 Hz, 2 sec
* Test voltage primary to bias winding: 500 V - 50 Hz, 2 sec
* Approx. weight: 22 g

The inductance is measured at 10 kHz, 1V
Bias winding if requested.

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

General Purpose
Small Power Switching Transformers

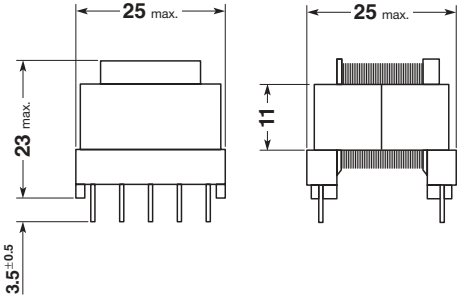
TYPES
67E251 H
69E251 H

Power up to 30 W

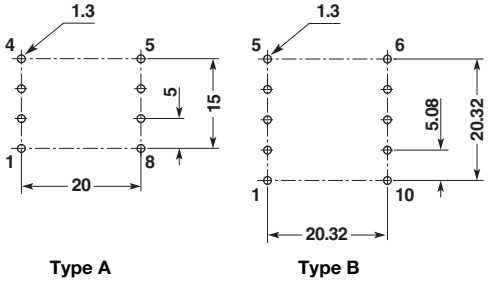
These transformers are fitted with high-permeability ferrite cores E25 size, and are designed for use in flyback or forward converters AC-DC as well DC-DC. Typical applications are low power/low cost power supplies in:

* household appliances
* domotic appliances
* office equipment: computers, fax, printers, etc.
* battery chargers
* power supply in TVC, VCR and audio equipment.

Dimensions in mm
Pins are tinned



Pins arrangements



Type A **Type B**

67E251 H Test Voltage 2 kV
69E251 H Test Voltage 4 kV

viewed on
component side

As there are many variables in the construction of such transformers and they are generally manufactured according to the customer's specifications, in the following only the general features and the design guide-lines are listed.

* Input Voltage: 170 - 265 Vac
* Output Voltage: 5 - 12 - 24 V
* Pins arrangements: A-B
* Output power: up to 30 W
* Switching frequency: up to 100 kHz
* Overtemperature of the windings: < 55°C
* Max. windings temperature: 115°C
* Test voltage for basic insulation primary and bias to secondary winding(s): 2 kV - 50 Hz, 2 sec
* Test voltage for reinforced insulation primary and bias to secondary winding(s): 4 kV - 50 Hz, 2 sec
* Test voltage primary to bias winding: 500 V - 50 Hz, 2 sec
* Approx. weight: 30 g

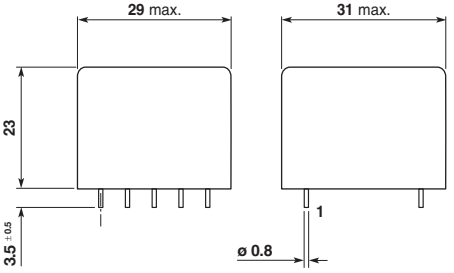
The inductance is measured at 10 kHz, 1V
Bias winding if requested.

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

CASE VERSION **Power up to 30 W**

These transformers are fitted with high-permeability ferrite cores E25 size, and are designed for use in flyback or forward converters AC-DC as well DC-DC. Typical applications are low power/low cost power supplies in:

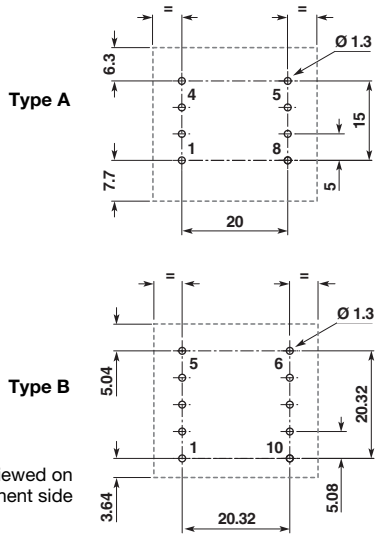
* household appliances
* domotic appliances
* office equipment: computers, fax, printers, etc.
* battery chargers
* power supply in TVC, VCR and audio equipment.



Test Voltage 3.75 kV

Dimensions in mm
Pins are tinned

Pins arrangements



As there are many variables in the construction of such transformers and they are generally manufactured according to the customer's specifications, in the following only the general features and the design guide-lines are listed.

* Input Voltage:	170 - 265 Vac
* Output Voltage:	5 - 12 - 24 V
* Pins arrangements:	A-B
* Output power:	up to 30 W
* Switching frequency:	up to 100 kHz
* Overtemperature of the windings:	< 55°C
* Max. windings temperature:	115°C
* Test voltage insulation primary and bias to secondary winding(s):	3.75 kV - 50 Hz, 2 sec
* Test voltage primary to bias winding:	500 V - 50 Hz, 2 sec
* Resin filled	
* Approx. weight:	48 g

The inductance is measured at 10 kHz, 1V
Bias winding if requested.

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers and cases are of flame-retardant plastic material in accordance with UL 94V-0

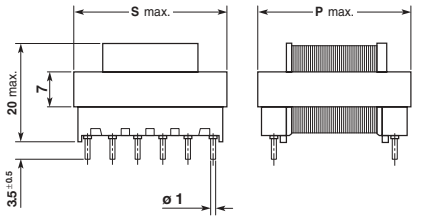
General Purpose
Small Power Switching Transformers

TYPES
67E30 H
69E30 H

Power up to 35 W

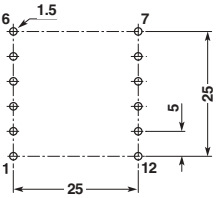
These transformers are fitted with high-performance ferrite cores E30 size, and are designed for use in flyback or forward converters AC-DC as well DC-DC. Typical applications are low power/low cost power supplies in:

* household appliances
* domotic appliances
* office equipment: computers, fax, printers, etc.
* battery chargers
* power supply in TVC, VCR and audio equipment.

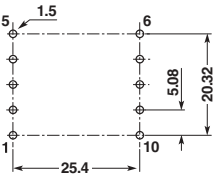


67E30 H Test Voltage 2 kV
69E30 H Test Voltage 4 kV

Pins arrangements



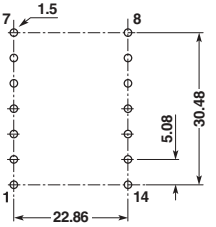
Type A
S = 31
P = 31



Type B
S = 31
P = 31

Dimensions in mm
Pins are tinned

viewed on
component side



Type C
S = 35
P = 31

As there are many variables in the construction of such transformers and they are generally manufactured according to the customer's specifications, in the following only the general features and the design guide-lines are listed.

* Input Voltage: 170 - 265 Vac
* Output Voltage: 5 - 12 - 24 V
* Pins arrangements: A-B-C
* Output power: up to 35 W
* Switching frequency: up to 100 kHz
* Overtemperature of the windings: < 55°C
* Max. windings temperature: 115°C
* Test voltage for basic insulation primary and bias to secondary winding(s): 2 kV - 50 Hz, 2 sec
* Test voltage for reinforced insulation primary and bias to secondary winding(s): 4 kV - 50 Hz, 2 sec
* Test voltage primary to bias winding: 500 V - 50 Hz, 2 sec
* Approx. weight: 35 g

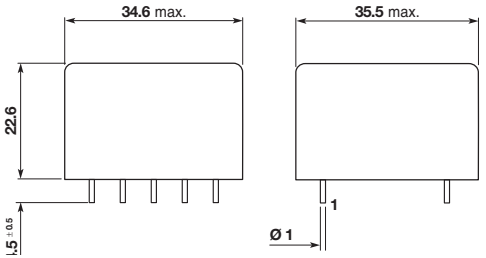
The inductance is measured at 10 kHz, 1V
Bias winding if requested.

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

CASE VERSION **Power up to 35 W**

These transformers are fitted with high-permeability ferrite cores E30 size, and are designed for use in flyback or forward converters AC-DC as well DC-DC. Typical applications are low power/low cost power supplies in:

* household appliances
* domotic appliances
* office equipment: computers, fax, printers, etc.
* battery chargers
* power supply in TVC, VCR and audio equipment.

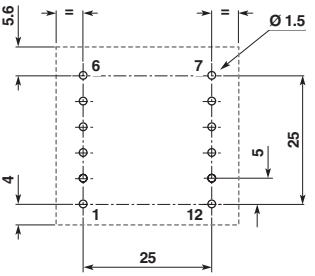


Test Voltage 3.75 kV

Dimensions in mm
Pins are tinned

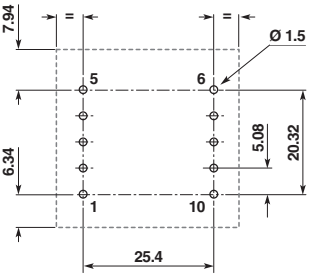
Pins arrangements

Type A



Type B

viewed on
component side



As there are many variables in the construction of such transformers and they are generally manufactured according to the customer's specifications, in the following only the general features and the design guide-lines are listed.

* Input Voltage: 170 - 265 Vac
* Output Voltage: 5 - 12 - 24 V
* Pins arrangements: A-B
* Output power: up to 35 W
* Switching frequency: up to 100 kHz
* Overtemperature of the windings: < 55°C
* Max. windings temperature: 115°C
* Test voltage insulation primary and bias to secondary winding(s): 3.75 kV - 50 Hz, 2 sec
* Test voltage primary to bias winding: 500 V - 50 Hz, 2 sec
* Resin filled
* Approx. weight: 57 g

The inductance is measured at 10 kHz, 1V
Bias winding if requested.

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

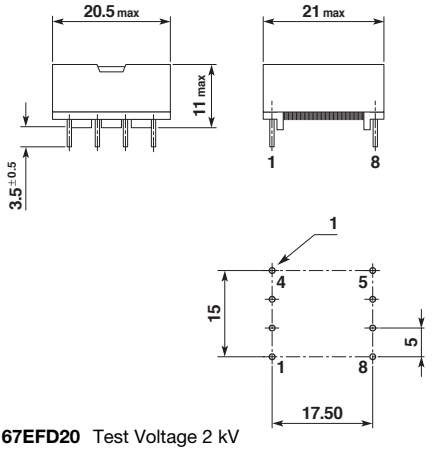
Power up to 10 W-20W

These transformers are fitted with high-performance ferrite cores EFD type, and are designed for use in flyback or forward converters AC-DC as well DC-DC. Typical applications are low power/low cost power supplies in:

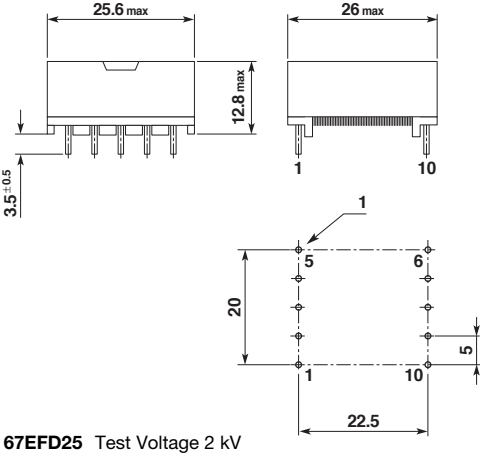
* household appliances
* domotic appliances
* office equipment: computers, fax, printers, etc.
* battery chargers
* power supply in TVC, VCR and audio equipment.

Dimensions in mm
Pins are tinned

viewed on
component side



67EFD20 Test Voltage 2 kV



67EFD25 Test Voltage 2 kV

As there are many variables in the construction of such transformers and they are generally manufactured according to the customer's specifications, in the following only the general features and the design guide-lines are listed.

* Input Voltage: 170 - 265 Vac
* Output Voltage: 5 - 12 - 24 V
* Output power:
  67EFD20 up to 10 W
  67EFD25 up to 20 W
* Switching frequency: up to 100 kHz
* Overtemperature of the windings: < 55°C
* Max. windings temperature: 115°C
* Test voltage for basic insulation primary and bias to secondary winding(s): 2 kV - 50 Hz, 2 sec
* Test voltage for reinforced insulation primary and bias to secondary winding(s): 4 kV - 50 Hz, 2 sec
* Test voltage primary to bias winding: 500 V - 50 Hz, 2 sec
* Approx. weight:
  67EFD20-69EFD20 13 g
  67EFD25-69EFD25 18 g

The inductance is measured at 10 kHz, 1V
Bias winding if requested.

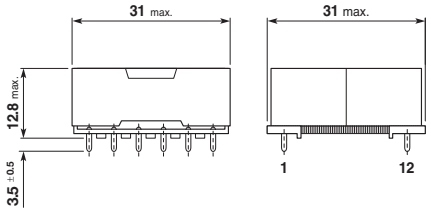
The transformers are designed and tested in accordance with EN 138100; EN 60938
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

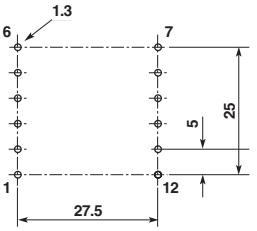
CASE VERSION **Power up to 35 W**

These transformers are fitted with high-permeability ferrite cores EFD type, and are designed for use in flyback or forward converters AC-DC as well DC-DC. Typical applications are low power/low cost power supplies in:

* household appliances
* domotic appliances
* office equipment: computers, fax, printers, etc.
* battery chargers
* power supply in TVC, VCR and audio equipment.

Dimensions in mm
Pins are tinned





viewed on
component side

67EFD30 Test Voltage 2 kV

As there are many variables in the construction of such transformers and they are generally manufactured according to the customer's specifications, in the following only the general features and the design guide-lines are listed.

* Input Voltage: 170 - 265 Vac
* Output Voltage: 5 - 12 - 24 V
* Output power: up to 35 W
* Switching frequency: up to 100 kHz
* Overtemperature of the windings: < 55°C
* Max. windings temperature: 115°C
* Test voltage insulation primary and bias to secondary winding(s): 2 kV - 50 Hz, 2 sec
* Test voltage primary to bias winding: 500 V - 50 Hz, 2 sec
* Approx. weight: 25 g

The inductance is measured at 10 kHz, 1V
Bias winding if requested.

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The coil formers are of flame-retardant plastic material in accordance with UL 94V-0

The series 65 transformers have been designed to fit in the electronic transformers according to the needs of the halogen lamps market, but they are suitable for diascope bulbs and in general for low voltage power supplies.

These transformers are fitted with ferrite core which allows operating frequencies between 30 and 50 kHz, and cover the popular power range of 60 - 105 - 150 - 200 - 250 W but are differentiated in various versions according to the customer's req uirements.

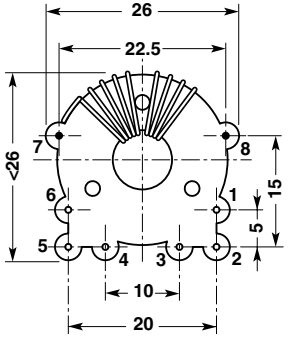
La série des transformateurs 65 a été conçue pour s'adapter aux transformateurs électroniques selon les besoins du marché de la lampe halogène, mais elle convient aussi pour les ampoules diascopes et de façon générale pour les alimentations basse tension.

Ces transformateurs sont réalisés à partir de noyau ferrite, qui permet un fonctionnement sur une plage de fréquence située entre 30 et 50 kHz, et couvrent la gamme de puissance usuelle de 60 - 105 - 150 - 200 - 250 W, en différentes versions selon les applications des clients.

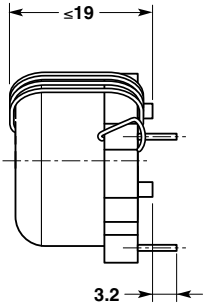
Power 60 W at 40 kHz

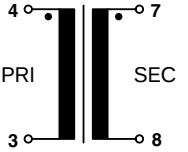
These transformers are fitted with high-permeability toroid core (ferrite). They have small dimensions and good coupling. They are mainly used in electronic transformers for halogen lamps and in switched -mode power supplies.

Dimensions in mm
Pins are tinned



65A19





o Pins
• Start of winding

Mounting holes on PCB
Primary pins: ø 1.3
Secondary Pins: ø 1.7

Types and Technical Data

Code	Rated power W	Supply voltage V	PRI voltage V	SEC voltage V	PRI inductance mH
65A19 06 00	60	230	130-170	12	20
65A19 06 01	60	230	130-170	13	20
65A19 06 02	60	115	65 -85	12	5

The table shows the basic versions. Customized types can be supplied according to customer's specifications.

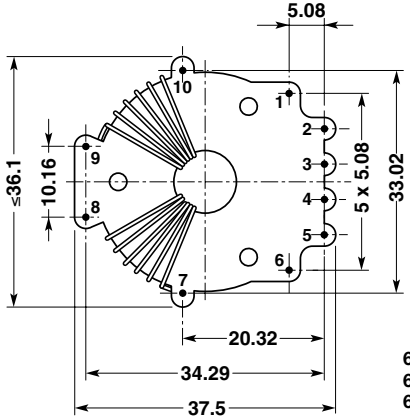
Test voltage prim. /sec.: 3750 V/50 Hz - 1 min
Primary inductance.: measured at 10 kHz
Approx. weight: 22 g

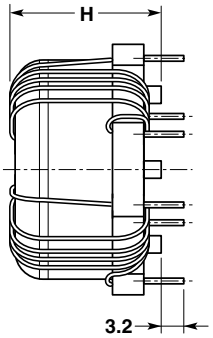
Approval: EN 61046 Annex C - EN 60065 - 14.3.2 a

The cases are of flame-retardant plastic material in accordance with UL 94V-0

Power **60 W at 50 kHz**
105 W at 30 kHz
150 W at 30 kHz

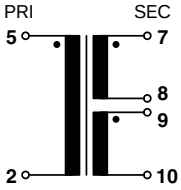
These transformers are fitted with high-permeability toroid core (ferrite). They have small dimensions and good coupling. The are mainly used in electronic transformers for halogen lamps and in switched-mode power supplies.





65B17
65B24
65B29

Dimensions in mm
Pins are tinned



o Pins
• Start of winding

Types and Technical Data

Code	H mm	Rated power W	Supply voltage V	PRI voltage V	SEC voltage V	PRI induct mH	Mounting holes		Approx. weight g
							Prim. pins Ø	Sec. pins Ø	
65B17 06 00	17	60	230	130-170	12	12	1.3	1.5	32
65B17 06 01	17	60	230	130-170	12	15	1.3	1.5	32
65B24 10 00	24	105	230	130-170	12	18	1.3	1.7	45
65B24 10 01	24	105	230	130-170	12	23	1.3	1.5	45
65B24 10 05	24	105	115	65-85	12	3.5	1.3	1.5	45
65B29 15 00	29	150	230	130-170	12	14	1.3	1.7	60
65B29 15 01	29	150	230	130-170	12	17	1.3	1.7	60
65B29 15 03	29	150	115	65-85	12	4	1.3	1.7	60

The table shows the basic versions. Customized types can be supplied according to customer's specifications.

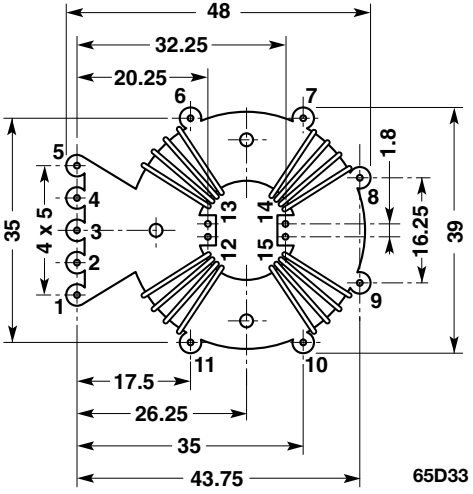
Test voltage prim. /sec.: 3750 V/50 Hz - 1 min
Primary inductance.: measured at 10 kHz

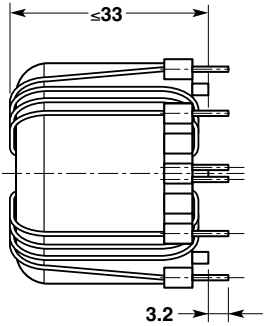
Approval: DVE EN 61046 Annex C - EN 60065 - 14.3.2 a

The cases are of flame-retardant plastic material in accordance with UL 94V-0

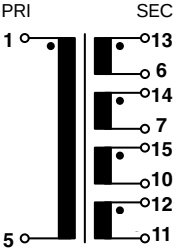
Power **200 W at 30 kHz**
250 W at 30 kHz

These transformers are fitted with high-permeability toroid core (ferrite). They have small dimensions and good coupling. The are mainly used in electronic transformers for halogen lamps and in switched-mode power supplies.





Dimensions in mm
Pins are tinned



o Pins
• Start of winding

Types and Technical Data

Code	Rated power W	Supply voltage V	PRI voltage V	SEC voltage V	PRI induct mH	Mounting holes		Approx. weight g
						Prim. pins Ø	Sec. pins Ø	
65D33 20 00	200	230	130-170	12	16	1.3	1.7	80
65D33 20 01	200	115	65-85	12	3	1.3	1.3	80
65D33 25 00	250	230	130-170	12	15	1.3	1.8	85

The table shows the basic versions. Customized types can be supplied according to customer's specifications.

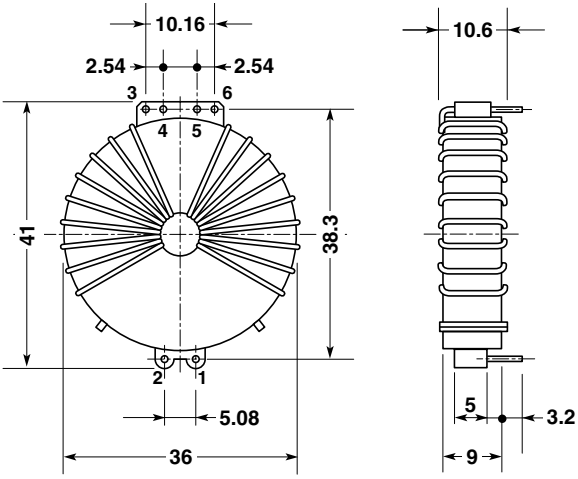
Test voltage prim. /sec.: 3750 V/50 Hz - 1 min
Primary inductance.: measured at 10 kHz

Approval: DVE EN 61046 Annex C - EN 60065 - 14.3.2 a

The cases are of flame-retardant plastic material in accordance with UL 94V-0

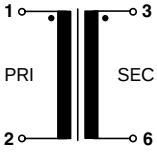
FLAT TYPE **Power 60 W at 40 kHz**

These transformers are fitted with high-permeability toroid core (ferrite). They have small dimensions and good coupling. They are mainly used in electronic transformers for halogen lamps and in switched-mode power supplies.



65E10

Dimensions in mm
Pins are tinned



o Pins
• Start of winding

Mounting holes on PCB
Primary pins: ø 1.3
Secondary Pins: ø 1.7

Types and Technical Data

Code	Rated power W	Supply voltage V	PRI voltage V	SEC voltage V	PRI Inductance mH
65E10 06 00	60	230	130-170	12	20
65E10 06 07	60	115	65-85	12	4

The table shows the basic versions. Customized types can be supplied according to customer's specifications.

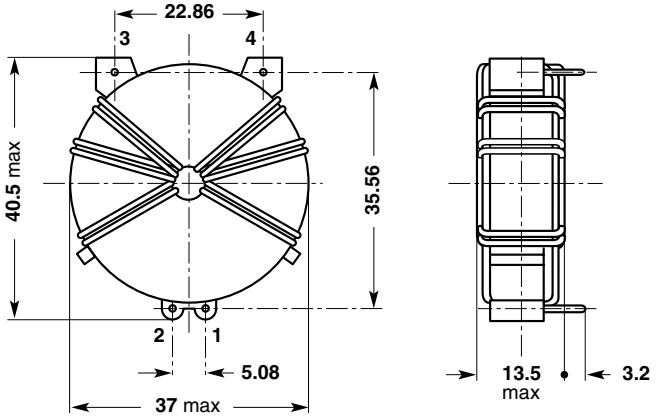
Test voltage prim. /sec.: 3750 V/50 Hz - 1 min
Primary inductance.: measured at 10 kHz
Approx. weight: 26 g

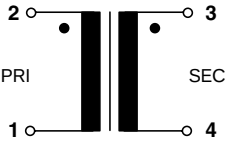
Approval: EN 61046 Annex C - EN 60065 - 14.3.2 a

The cases are of flame-retardant plastic material in accordance with UL 94V-0

FLAT TYPE **Power 105 W at 40 kHz**

These transformers are fitted with high-permeability toroid core (ferrite). They have small dimensions and good coupling. They are mainly used in electronic transformers for halogen lamps and in switched -mode power supplies.





o Pins
• Start of winding

65F13 A

Dimensions in mm
Pins are tinned

Mounting holes on PCB
Primary pins: ø 1.3
Secondary Pins: ø 2.5

Types and Technical data

Code	Rated power W	Supply voltage V	PRI voltage V	SEC voltage V	PRI inductance mH
65F13 A1 00	105	230	130-170	12	8
65F13 A1 20	105	115	65-85	12	2.5

The table shows the basic versions. Customized types can be supplied according to customer's specifications.

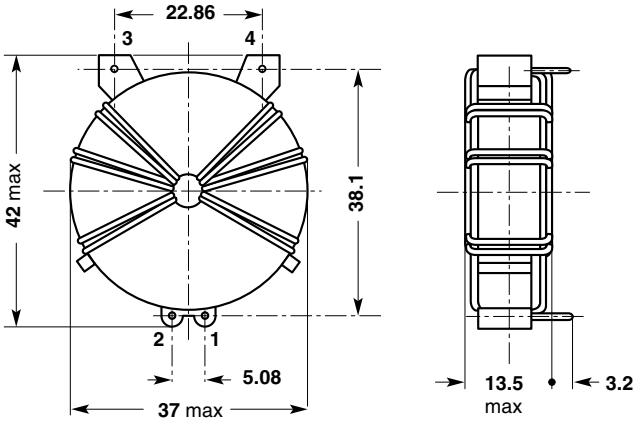
Test voltage prim. /sec.: 3750 V/50 Hz - 1 min
Primary inductance.: measured at 10 kHz
Approx. weight: 37 g

Approval: EN 61046 Annex C - EN 60065 - 14.3.2 a

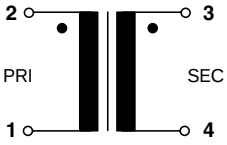
The cases are of flame-retardant plastic material in accordance with UL 94V-0

FLAT TYPE **Power 105 W at 40 kHz**

These transformers are fitted with high-permeability toroid core (ferrite). They have small dimensions and good coupling. They are mainly used in electronic transformers for halogen lamps and in switched -mode power supplies.



65F13 B



o Pins
• Start of winding

Dimensions in mm
Pins are tinned

Mounting holes on PCB
Primary pins: ø 1.3
Secondary Pins: ø 2.5

Types and Technical data

Code	Rated power W	Supply voltage V	PRI voltage V	SEC voltage V	PRI inductance mH
65F13 B1 00	105	230	130-170	12	12
65F13 B1 20	105	115	65-85	12	2.5

The table shows the basic versions. Customized types can be supplied according to customer's specifications.

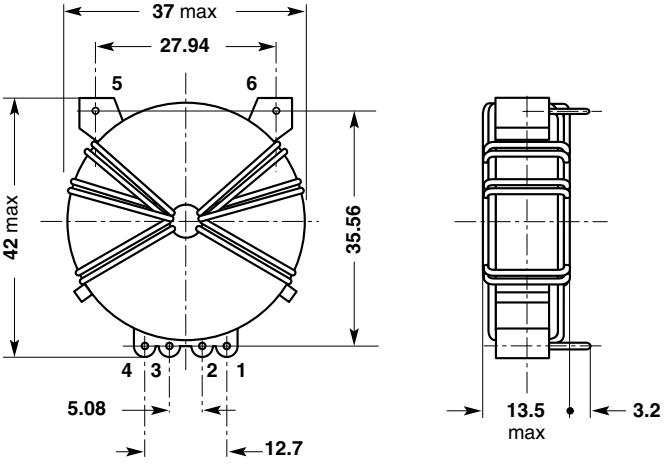
Test voltage prim. /sec.: 3750 V/50 Hz - 1 min
Primary inductance.: measured at 10 kHz
Approx. weight: 37 g

Approval: EN 61046 Annex C - EN 60065 - 14.3.2 a

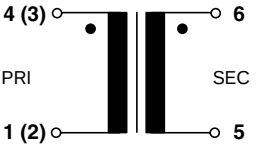
The cases are of flame-retardant plastic material in accordance with UL 94V-0

FLAT TYPE **Power 105 W at 40 kHz**

These transformers are fitted with high-permeability toroid core (ferrite). They have small dimensions and good coupling. They are mainly used in electronic transformers for halogen lamps and in switched -mode power supplies.



Dimensions in mm
Pins are tinned



o Pins
• Start of winding

65F13 C
65F13 D

Mounting holes on PCB
Primary pins: ø 1.3
Secondary Pins: ø 2.5
ø 3.0*
*for 65F13 C1 10 only

Types and Technical data

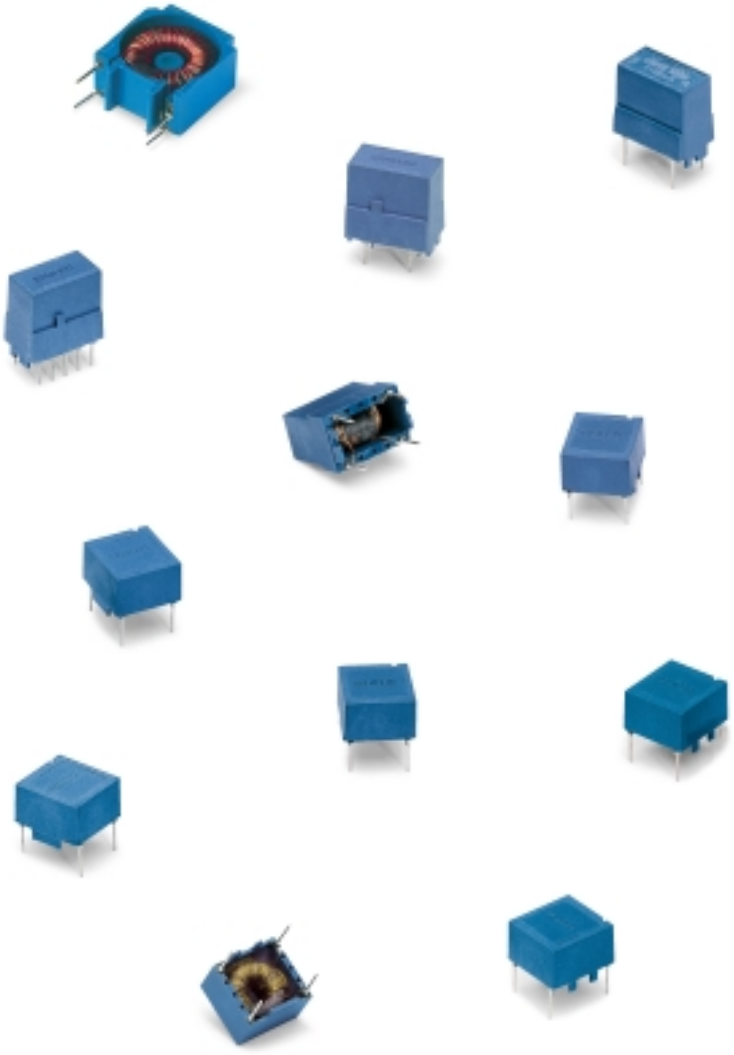
Code	Pins		Rated power W	Supply voltage V	PRI voltage V	SEC voltage V	PRI Inductance mH
	Prim.	Sec.					
65F13 C1 00	1 - 4	5 - 6	105	230	130-170	12	12
65F13 C1 10	1 - 4	5 - 6	105	240	130-170	12	13
65F13 C1 20	1 - 4	5 - 6	105	115	65 - 85	12	2.5
65F13 D1 00	2 - 3	5 - 6	105	230	130 - 170	12	12
65F13 D1 20	2 - 3	5 - 6	105	115	65 - 85	12	2.5

The table shows the basic versions. Customized types can be supplied according to customer's specifications.

Test voltage prim. /sec.: 3750 V/50 Hz - 1 min
Primary inductance.: measured at 10 kHz
Approx. weight: 37 g

Approval: EN 61046 Annex C - EN 60065 - 14.3.2 a

The cases are of flame-retardant plastic material in accordance with UL 94V-0



In the Integrated Services Digital Network (ISDN) serious RFI problems can arise, due to the high speed digital codes used (4B3T and 2B1Q), so that special inductive devices are required to suppress interference and noise on the connecting telephone lines.

The current-compensated chokes produced by Radiohm for two wire and four-wire telephone lines are designed to offer the following features:

- wide range of inductance values;
- high interferences attenuation on an extended frequency range;
- small size plastic packages with standardized connection for PCB insertion;
- low cost due to the ferrite cores and to the well-proven manufacturing process.

Dans les réseaux digitaux de services intégrés (ISDN) des sérieux problèmes d'interférence électromagnétique (RFI) peuvent se produire à cause des protocoles haute vitesse utilisés (4B3T et 2B1Q); pour cela des composants inductifs spéciaux sont nécessaires afin de supprimer les interférences et le bruit sur les lignes téléphoniques.

Les selfs à courant compensé produites par Radiohm pour les connexions téléphoniques à 2 lignes et à 4 lignes, sont conçues pour offrir les particularités suivantes:

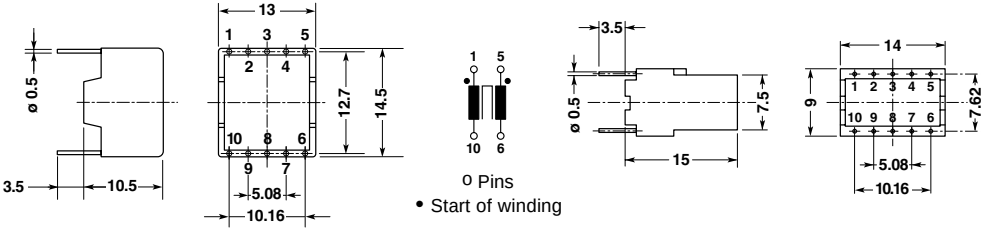
- *une large série de valeurs inductives;*
- *une forte atténuation des interférences sur une large gamme de fréquence;*
- *des boîtiers plastiques de petite taille avec une connectique standardisée pour l'insertion sur circuit imprimé;*
- *de faibles coûts dus à l'utilisation de matériaux ferrite et à un procédé de fabrication reconnu.*

ISDN Common Mode Chokes

Voltage 80 VDC/42 Vac
Current 0.3 A

DOUBLE CHOKES

These current-compensated chokes for data and signal lines are fitted with high-permeability toroid core (ferrite). They are used in ISDN equipment in order to suppress the radio frequency interferences (RFI) at the two-wire telephone line input and also at the power input of the network termination (NT) equipment.



46H14
Horizontal mounting

46V15
Vertical mounting

Dimensions in mm
Pins are tinned

TYPES

Horizontal	Vertical	Rated inductance per winding	DC resistance per winding (typical)
Code	Code	mH	m Ω
46H14 01 00	46V15 01 00	1	130
46H14 02 00	46V15 02 00	2.2	190
46H14 04 00	46V15 04 00	4.7	280
46H14 10 00	46V15 10 00	10	400
46H14 22 00	46V15 22 00	22	710
46H14 33 00	46V15 33 00	33	860

Technical Data

Rated current:	0.3 A referred to 50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	500 V -50 Hz, 700 VDC, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C
Approx. weight:	3 g

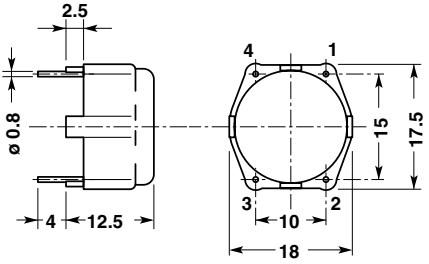
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

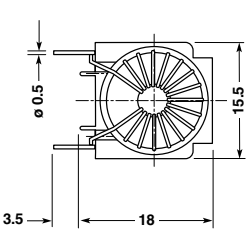
Voltage 80 VDC/42 Vac
Current 0.3 A

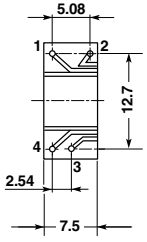
DOUBLE CHOKES

These current-compensated chokes for data and signal lines are fitted with high-permeability toroid core (ferrite). They are used in ISDN equipment in order to suppress the radio frequency interferences (RFI) at the two-wire telephone line input and also at the power input of the network termination (NT) equipment.

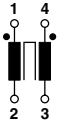
Dimensions in mm
Pins are tinned





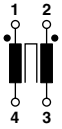


46H17
Horizontal mounting



o Pins
• Start of winding

46V18
Vertical mounting



o Pins
• Start of winding

TYPES

Horizontal	Vertical	Rated inductance per winding mH	DC resistance per winding (typical) m Ω
Code	Code		
46H17 02 00	46V18 02 00	2.2	320
46H17 04 00	46V18 04 00	4.7	460
46H17 10 00	46V18 10 00	10	670
46H17 15 00	46V18 15 00	15	825
46H17 22 00	46V18 22 00	22	1000
46H17 39 00		39	1300
46H17 47 00		47	1470

Technical Data

Rated current:	0.3 A referred to 50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	500 V -50 Hz, 700 VDC, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C
Approx. weight:	6 g

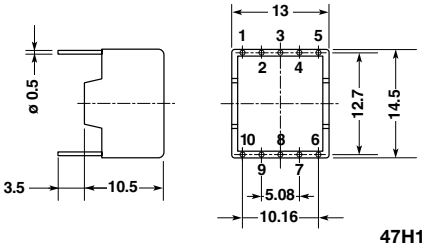
The chokes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

ISDN Common Mode Chokes

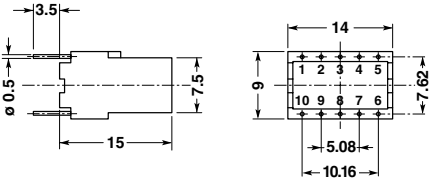
Voltage 80 VDC/42 Vac
Current 0.3 A

QUAD CHOKES

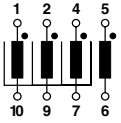
These current-compensated chokes for data and signal lines are fitted with high-permeability toroid core (ferrite). They are used in ISDN equipment in order to suppress the radio frequency interferences (RFI) at the four-wire telephone line input and also at the power input of the network termination (NT) and terminal equipment devices (TEs).



47H14
Horizontal Mounting



47V15
Vertical mounting



o Pins
• Start of winding

Dimensions in mm
Pins are tinned

TYPES

Horizontal	Vertical	Rated inductance per winding	DC resistance per winding (typical)
Code	Code	mH	m Ω
47H14 01 00	47V15 01 00	1	130
47H14 02 00	47V15 02 00	2.2	190
47H14 04 00	47V15 04 00	4.7	280
47H14 10 00	47V15 10 00	10	400

Technical Data

Rated current:	0.3 A referred to 50 Hz and +60°C ambient temperature
Rated inductance:	at +20°C and 10 kHz, 0.1 mA
Inductance tolerance:	+50 -30%
Inductance loss:	< 10% at DC initial loading with I^R
Testing voltage:	500 V -50 Hz, 700 VDC, 2 sec, winding to winding
Climatic category:	DIN GKC (-40 to +125°C; humidity cat. C)
DC resistance:	at +20°C
Derating operating current:	at +120°C ambient temperature I=0
Overtemperature of windings:	< 55°C
Max. permissible temperature of windings:	115 °C
Approx. weight:	3 g

The chockes are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

Interface transformers for ISDN equipment

In the Integrated Services Digital Network (ISDN) voice and data are transmitted along two-wire and four-wire lines with high speed digital codes like 4B3T and 2B1Q, thus requiring the use of especially designed interface transformers to connect the digital exchange to the various peripheral equipment; these devices are fitted on both sides of the connecting telephone lines, providing galvanic separation and also - if required - high insulation.

The four-wires So-Interface Transformers are the most common, providing for the line coupling between a Network Termination (NT) or a Private Branch Exchange (PABX) to the Terminal Equipment (TE): the typical Terminal Equipment are telephones, fax, modems.

The S2M-Interface Transformers provide instead for the line coupling between Network Termination (NT) to the Private Branch Exchange (PABX).

These interfaces must respect stringent requirements, in order to minimize the pulse distortion and the bit error rate; namely:

- low stray inductance to achieve optimum pulse mask;
- low coupling capacitances to guarantee a good common mode rejection of the output signal;
- low sensitivity to DC current unbalance to respect the impedence mask.

Further, the interface transformers developed by Radiohm present:

- four insulation levels: 0.5 - 1.5 - 2 - 4 kV;
- characteristics matched to the most common transceiver ICs and line impedances;
- small size plastic packages with standardized connection for PCB insertion;
- low cost due to the ferrite cores and to well-proven manufacturing process.

Dans les réseaux numériques de services intégrés (ISDN), la voix et les données sont transmises par des connexions deux lignes et quatre lignes avec des protocoles haute vitesse tels que 4B3T et 2B1Q qui requièrent l'utilisation de transformateurs d'interface spécialement prévus pour la connexion entre l'échangeur numérique et les différents équipements périphériques; ces composants sont utilisés sur les deux cotés des lignes téléphoniques, assurant une séparation galvanique et aussi une haute valeur d'isolation.

Les transformateurs d'interface S_0 4 lignes sont les plus répandus, permettant le couplage entre la terminaison du réseau (NT) ou une dérivation multiple (PABX) et les équipements terminaux (TE): téléphones, fax, modems.

Les transformateurs d'interface S_{2M}, par contre, assurent le couplage entre la terminaison du réseau (NT) et une dérivation multiple (PABX).

Ces interfaces doivent respecter des spécifications strictes, afin de minimiser la distorsion des impulsions et le taux d'erreur de bit; a savoir:

- *une faible inductance de fuite afin d'optimiser la transmission du spectre d'impulsion;*
- *des basses capacités de couplage afin de garantir un bon rejet de mode commun des signaux de sortie;*
- *une faible sensibilité au courant continu (DC) non balancé afin de respecter le spectre d'impédance.*

De plus, les transformateurs d'interface développés par Radiohm présentent ces particularités:

- *quatre niveaux d'isolation: 0,5 - 1,5 - 2 - 4 kV;*
- *des caractéristiques correspondantes à la majorité des émetteurs - récepteurs IC et à l'impédance des lignes;*
- *des boiters plastiques de petite taille avec une connectique standardisée pour l'insertion sur circuit imprimé;*
- *des faibles coûts dus à l'utilisation de matériaux ferrite et à un procédé de fabrication reconnu.*

Symbol Definitions and Technical data

Turns Ratio (n)

Is the numbers of turns on the primary windings referenced to the number of turns on the secondary winding(s).

DC-Current (Δ IDC)

Maximum admissible DC-current asymmetry in the primary winding(s).

Primary Inductance (PRI Induct)

Inductance in the primary windings connected in series; measured at 10 kHz/100 mV.

Primary Leakage Inductance (PRI Leak Induct)

Leakage inductance of the primary windings connected in series with secondary winding(s) connected in series and short circuited; measured at 10 kHz/100 mV.

Winding Capacitance (PRI/SEC Cw/w)

Also **"Coupling Capacitance"**. Capacitance between primary and secondary windings; measured at 10 kHz.

Primary Resistance (PRI DCR)

DC-Resistance of the primary windings connected in series.

Secondary Resistances (SEC DCR)

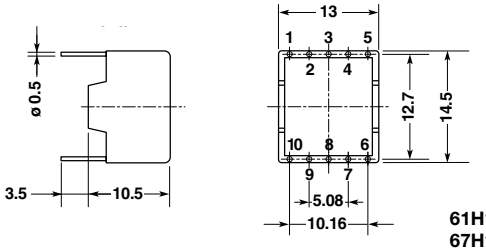
DC-resistances of the secondary winding(s) connected in series.

Test Voltage (UP)

At 50 Hz, 1 to 2 sec - primary windings to secondary winding(s).

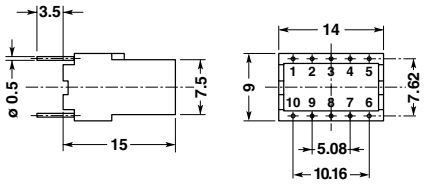
Insulation 0.5 - 1.5 kV

These transformers are fitted with high-permeability toroid core (ferrite). They are used in ISDN equipment to interface the four-wire lines connecting the network terminal (NT) or the private branch exchange (PABX) to the user terminal (TE). They are designed to meet the CCITT 1.430 specifications.



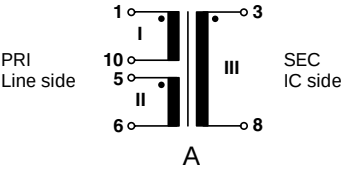
Dimensions in mm
Pins are tinned

61H14
67H14
Horizontal mounting



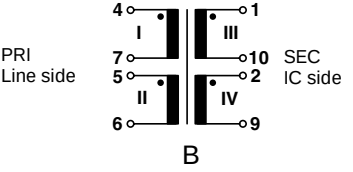
61V15
67V15
Vertical mounting

Schematics



A

o Pins
• Start of winding



B

For 67H14 types only
Optional schem. B
PRI 6-7/9-10
SEC 1-2/4-5

TYPES

CODE	Turns Ratio n ± 2%	Δ IDC mA max.	PRI Induct mH min.	PRI Leak Induct µH max.	PRI/SEC Cw/w pF max.	PRI DCR Ω (typical)	SEC DCR Ω (typical)	UP kV	Schem.
61H14 31 00 61V15 31 00	1:1:**4**	3	30	6	90	1	1.5	0.5	A
61H14 31 01 61V15 31 01	1:1:**2**	3	30	5	90	1	1	0.5	A
67H14 31 00 67V15 31 00	1:1:**4**	3	30	6	90	1	1.5	1.5	A
67H14 41 00 67V15 41 00	1:1:**2**:**2**	5	30	5	140	1	1.5	1.5	B
67H14 41 01	1:1:**2.5**:**2.5**	5	30	5	140	1	1.5	1.5	B

Bold type: IC side windings.
Approx. weight: 3 g

Symbol definitions and Technical data p. 117

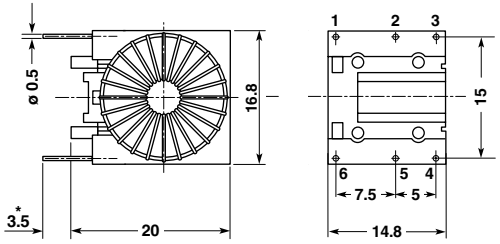
The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

ISDN So-Interface Transformers

Insulation 4 kV

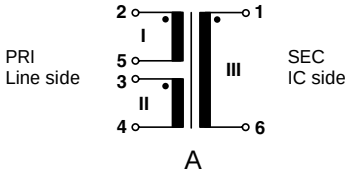
These transformers are fitted with high-permeability toroid core (ferrite). They are used in ISDN equipment to interface the four-wire lines connecting the network terminal (NT) or the private branch exchange (PABX) to the user terminal (TE). They are designed to meet the CCITT 1.430 specifications and the requirements of reinforced insulation according to IEC 950, EN 60950 and BS 6301.

Dimensions in mm
Pins are tinned



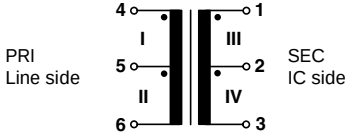
63V19 310
63V19 410
Vertical Mounting

Schematics



A

o Pins
• Start of winding



B

TYPES

Code	Turns Ratio n ± 2%	Δ IDC mA max.	PRI Induct mH min.	PRI Leak Induct µ H max.	PRI/SEC Cw/w pF max.	PRI DCR Ω (t.v.)	SEC DCR Ω (t.v.)	UP kV	Schem.
63V19 31 00	1:1:**3.6**	3	30	15	45	1	1.5	4	A
63V19 41 00	1:1:**2:2**	3	30	18	15	1	1.5	4	B
63V19 41 01	1:1:**2.5:2.5**	3	30	18	15	1	1.5	4	B

Bold type: IC side windings.
Symbol definitions and Technical data p. 117

Approx. weight: 4 g

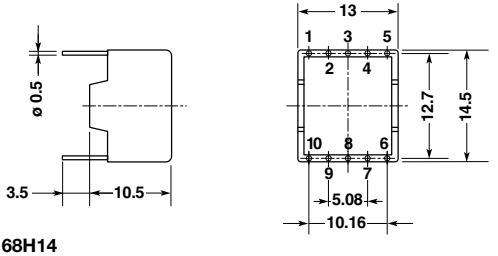
The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

ISDN S2m-Interface Transformers

Insulation 2 kV

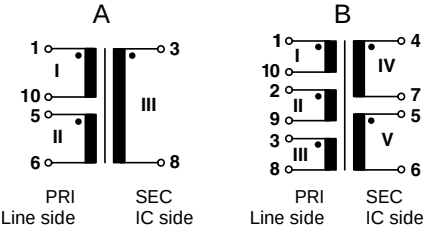
These transformers are fitted with high-permeability toroid core (ferrite). They are used in ISDN equipment to interface the four-wire telephone lines connecting the network termination devices (NT) to a private branch exchange (PABX). They are designed to meet the CCITT G.703 specifications.

Dimensions in mm
Pins are tinned

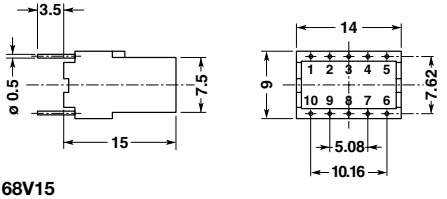


68H14
Horizontal mounting

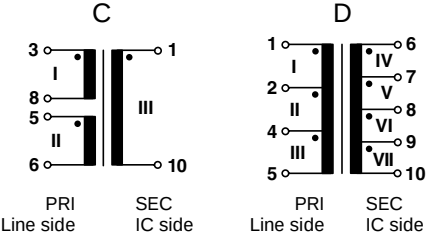
Schematics



o Pins
• Start of winding



68V15
Vertical mounting



TYPES

Horizontal	Vertical	Turns Ratio	PRI Induct	PRI Leak Induct	PRI DCR	SEC DCR	U_P	Schem.
CODE	CODE	n ± 2%	mH min.	µH max.	Ω (typical)	Ω (typical)	kV	
68H14 31 10		1:1:**2**	2	1	0.30	0.30	2	A
	68V15 31 10	1:1:**2**	2	1	0.30	0.30	2	C
68H14 51 10	68V15 51 10	1.5:1.5:1:**1.5**:**1.5**	5	1	0.35	0.30	2	B
	68V15 71 10	5:4:1:**2**:**8**:**8**:**2**	2	1	0.30	0.40	2	D

Bold type: IC side windings.

Symbol definitions and Technical data p. 117

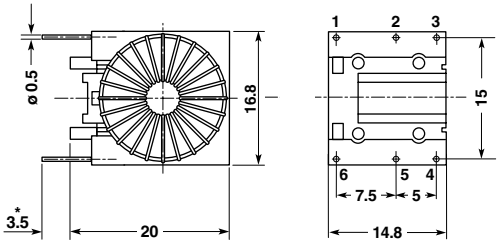
Approx. weight: 3 g

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0

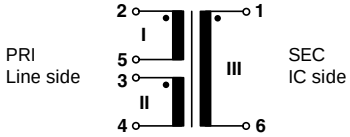
Insulation 4 kV

These transformers are fitted with high-permeability toroid core (ferrite). They are used in ISDN equipment to interface the four-wire telephone lines connecting the network termination devices (NT) to a private branch exchange (PABX). They are designed to meet the CCITT G.703 specifications and the requirements of **reinforced insulation** according to IEC 950, EN 60950 and BS 6301.

Dimensions in mm
Pins are tinned



Schematics



o Pins
• Start of winding

63V19 311
Vertical Mounting

TYPES

Code	Turns Ratio n ± 2%	PRI Induct mH min.	PRI Leak Induct µH max.	PRI DCR Ω (typical)	SEC DCR Ω (typical)	U_P kV
63V19 31 10	1 : 1 : **1**	48	5	1.5	1	4
63V19 31 11	1 : 1 : **1.57**	3	1	1.5	1	4
63V19 31 12	1 : 1 : **2**	2	1	1.5	1.5	4
63V19 31 13	1 : 1: **2.67**	2	1	1.5	1.5	4

Bold type: IC side windings.
Symbol definitions and Technical data p. 117

Approx. weight: 5 g

The transformers are designed and tested in accordance with EN 138100; EN 60938-1
The cases are of flame-retardant plastic material in accordance with UL 94V-0