

## Wirewound Resistor, Industrial Power, Vitreous Coated, Fixed Tubular


**FEATURES**

- High temperature vitreous coating
- Complete welded construction
- Available in non-inductive style (special "NI") with Ayrton-Perry winding
- Tight tolerance of 5 % for values above 1 Ω
- Excellent stability in operation (< 3 % change resistance)
- Material categorization:  
For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

**STANDARD ELECTRICAL SPECIFICATIONS**

GLOBAL MODEL	HISTORICAL MODEL	POWER RATING $P_{25\text{ }^\circ\text{C}}$ W	RESISTANCE RANGE $\Omega$ $\pm 5\%$	RESISTANCE RANGE $\Omega$ $\pm 10\%$	WEIGHT (typical) g
FVT005	FVT-5	5	1.0 to 20.5K	1.0 to 20.5K	4.60
FVT005...NI	FVT-5-...-NI	5	1.0 to 750	1.0 to 750	4.60
FVT010	FVT-10	12	1.0 to 22.3K	0.1 to 22.3K	6.7
FVT010...NI	FVT-10-...-NI	12	1.0 to 2.79K	1.0 to 2.79K	6.7
FVT020	FVT-20	20	1.0 to 95K	0.1 to 95K	12.57
FVT020...NI	FVT-20-...-NI	20	1.0 to 4.8K	1.0 to 4.8K	12.57
FVT025	FVT-25	25	1.0 to 44.6K	0.1 to 44.6K	20.7
FVT025...NI	FVT-25-...-NI	25	1.0 to 6.18K	1.0 to 6.18K	20.7
FVT25A	FVT-25A	30	1.0 to 56K	0.1 to 56K	20.7
FVT25A...NI	FVT-25A-...-NI	30	1.0 to 7.25K	1.0 to 7.25K	20.7
FVT25B	FVT-25B	30	1.0 to 49K	0.1 to 49K	14.5
FVT25B...NI	FVT-25B-...-NI	30	1.0 to 6.8K	1.0 to 6.8K	14.5
FVT050	FVT-50	50	1.0 to 114K	0.1 to 114K	42.1
FVT050...NI	FVT-50-...-NI	50	1.0 to 15.1K	1.0 to 15.1K	42.1
FVT50A	FVT-50A	60	1.0 to 149K	0.1 to 149K	65.6
FVT50A...NI	FVT-50A-...-NI	60	1.0 to 19.1K	1.0 to 19.1K	65.6
FVT50B	FVT-50B	70	1.0 to 173K	0.1 to 173K	60.0
FVT50B...NI	FVT-50B-...-NI	70	1.0 to 22.1K	1.0 to 22.1K	60.0
FVT075	FVT-75	75	1.0 to 276K	0.1 to 276K	98.5
FVT075...NI	FVT-75-...-NI	75	1.0 to 35K	1.0 to 35K	98.5
FVT75A	FVT-75A	90	1.0 to 238K	0.1 to 238K	64.8
FVT75A...NI	FVT-75A-...-NI	90	1.0 to 31K	1.0 to 31K	64.8
FVT100	FVT-100	100	1.0 to 267K	0.1 to 267K	91.4
FVT100...NI	FVT-100-...-NI	100	1.0 to 34K	1.0 to 34K	91.4
FVT130	FVT-130	130	1.0 to 387K	0.1 to 387K	192.4
FVT130...NI	FVT-130-...-NI	130	1.0 to 49.3K	1.0 to 49.3K	192.4
FVT160	FVT-160	175	1.0 to 510K	0.1 to 510K	250.8
FVT160...NI	FVT-160-...-NI	175	1.0 to 78.8K	1.0 to 78.8K	250.8
FVT200	FVT-200	225	1.0 to 651K	0.1 to 651K	310.0
FVT200...NI	FVT-200-...-NI	225	1.0 to 85.4K	1.0 to 85.4K	310.0

**GLOBAL PART NUMBER INFORMATION**

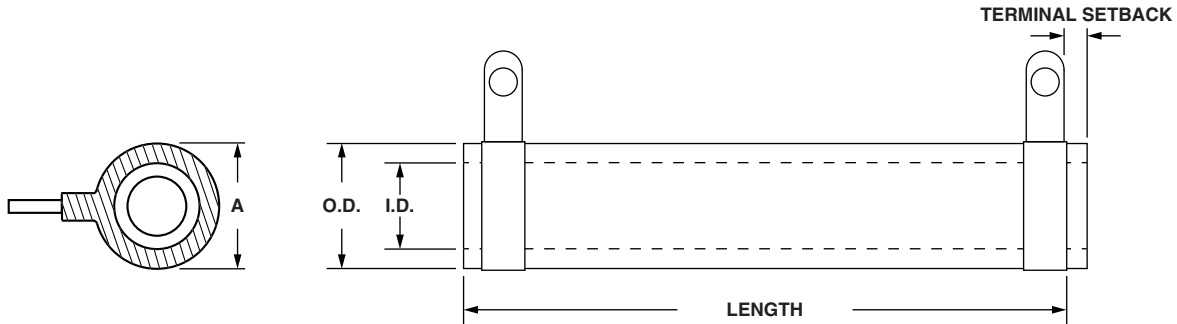
 Global Part Numbering example: **FVT02506E25R00JE** (visit [www.vishay.net](http://www.vishay.net) SAP parts manual for all options)

<b>F</b>	<b>V</b>	<b>T</b>	<b>0</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>6</b>	<b>E</b>	<b>2</b>	<b>5</b>	<b>R</b>	<b>0</b>	<b>0</b>	<b>J</b>	<b>E</b>		
----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	--	--

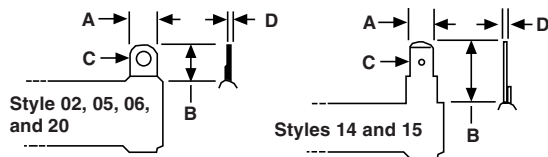
GLOBAL MODEL (6 digits)	TERMINAL DESIGNATION (2 digits)	TERMINAL FINISH (1 digit)	VALUE (5 digits)	TOLERANCE (1 digit)	PACKAGING CODE (1 digit)	SPECIAL (up to 2 digits)
(See Standard Electrical Specifications Global Model column for options)	<b>02, 05, 06, 14, 15, 20</b> FC = Ferrule cap	<b>E</b> = Lead (Pb)-free	<b>R</b> = Decimal <b>K</b> = Thousand <b>1R500</b> = 1.5 Ω <b>1K500</b> = 1.5 kΩ	<b>J</b> = ± 5 % <b>K</b> = ± 10 %	<b>E</b> = E01 = Lead (Pb)-free skin pack	(Dash number) From <b>1</b> to <b>99</b> as applicable <b>NI</b> = Non-inductive <b>91</b> = 100 style BKT <b>92</b> = 200 style BKT <b>93</b> = 300 style BKT

 Historical Part Number example: **FVT-25-25-5 %**

<b>FVT-25</b>	<b>25 Ω</b>	<b>5 %</b>	
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE	SPECIAL

**DIMENSIONS** in inches [millimeters]


MODEL	DIMENSIONS in inches [millimeters]								
	A MAX.	CORE DIMENSIONS			TERMINAL SETBACK ± 0.031 (0.79)	DISTANCE BETWEEN TERMINALS (REF.)	TERMINAL DESIGNATION		BRACKET TYPES
		LENGTH ± 0.062 (1.59)	O.D.	I.D. ± 0.031 (0.79)			STANDARD	OPTIONAL (QUICK CONNECT)	
FVT005	0.406 [10.31]	1.000 [25.40]	0.313 [7.94]	0.188 [4.76]	0.094 [2.39]	0.437 [11.10]	05	14	209
FVT010	0.406 [10.31]	1.750 [44.45]	0.313 [7.95]	0.188 [4.78]	0.094 [2.39]	1.187 [30.15]	05	14	101, 204, 301
FVT020	0.563 [14.30]	2.000 [50.8]	0.438 [11.13]	0.260 [6.60]	0.094 [2.39]	1.437 [36.50]	02	14	203
FVT025	0.688 [17.48]	2.000 [50.8]	0.563 [14.30]	0.313 [7.95]	0.094 [2.39]	1.312 [33.32]	06	15	101, 203, 301
FVT25A	0.906 [23.01]	2.000 [50.8]	0.750 [19.05]	0.500 [12.70]	0.094 [2.39]	1.312 [33.32]	06	15	101, 203, 301
FVT25B	0.770 [19.56]	2.000 [50.8]	0.625 [15.88]	0.453 [11.51]	0.094 [2.39]	1.312 [33.32]	06	15	101, 203, 301
FVT050	0.688 [17.48]	4.000 [101.6]	0.563 [14.30]	0.313 [7.95]	0.094 [2.39]	3.312 [84.12]	06	15	101, 203, 301
FVT50A	0.906 [23.01]	4.000 [101.6]	0.750 [19.05]	0.500 [12.70]	0.062 [1.57]	3.376 [85.75]	06	15	102, 203, 303
FVT50B	0.906 [23.01]	4.500 [114.3]	0.750 [19.05]	0.547 [13.89]	0.125 [3.18]	3.75 [95.25]	06	15	102, 206, 303
FVT075	0.688 [17.46]	6.000 [152.4]	0.563 [14.30]	0.313 [7.95]	0.094 [2.39]	5.312 [134.9]	06	15	101, 203, 301
FVT75A	0.906 [23.01]	6.000 [152.4]	0.750 [19.05]	0.500 [12.70]	0.094 [2.39]	5.312 [134.9]	06	15	102, 206, 303
FVT100	0.906 [23.01]	6.500 [165.1]	0.750 [19.05]	0.500 [12.70]	0.125 [3.18]	5.750 [146.1]	06	15	103, 205, 303
FVT130	1.313 [33.35]	6.500 [165.1]	1.125 [28.58]	0.750 [19.05]	0.282 [7.16]	5.312 [134.9]	20	15	103, 205, 303
FVT160	1.313 [33.35]	8.500 [215.9]	1.125 [28.58]	0.750 [19.05]	0.267 [6.78]	7.341 [186.5]	20	15	103, 205, 303
FVT200	1.313 [33.35]	10.500 [266.7]	1.125 [28.58]	0.750 [19.05]	0.266 [6.76]	9.343 [237.3]	20	15	103, 205, 303

**TERMINAL DIMENSIONS**


DIMENSIONS	TERMINAL STYLE					
	20	02	05	06	14	15
A	0.375 [9.53]	0.188 [4.76]	0.188 [4.76]	0.250 [6.35]	0.188 [4.76]	0.250 [6.35]
B	0.625 [15.88]	0.406 [10.32]	0.438 [11.11]	0.563 [14.29]	0.563 [14.29]	0.594 [15.08]
C (HOLE DIAMETER)	0.196 [4.98]	0.093 [2.36]	0.104 [2.64]	0.166 [4.22]	0.050 [1.27]	0.065 [1.65]
D	0.020 [0.51]	0.020 [0.51]	0.020 [0.51]	0.020 [0.51]	0.020 [0.51]	0.031 [0.79]

TECHNICAL SPECIFICATIONS		
PARAMETER	UNIT	FVT RESISTOR CHARACTERISTICS
Temperature Coefficient	ppm/°C	± 260 for 20 Ω and above, ± 400 for 1 Ω to 19.99 Ω, special TC's available please contact factory
Short Time Overload	-	10 x rated power for 5 s
Dielectric Withstanding Voltage	V <sub>AC</sub>	1000, from terminal to mounting hardware
Maximum Working Voltage	V	$(P \times R)^{1/2}$
Operating Temperature Range	°C	- 55 to + 350

### MATERIAL SPECIFICATIONS

**Element:** Copper-nickel alloy or nickel-chrome alloy, depending on resistance value

**Core:** Ceramic, steatite

**Coating:** Special high temperature vitreous

**Standard Terminals:** Tinned alloy 42

**Optional Terminal (Quick Connect):** Alloy 42

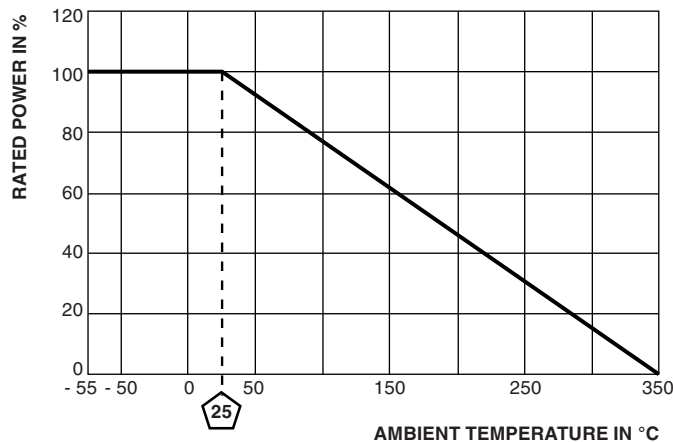
**Terminal Bands:** Alloy 42

**Part marking:** HEI, model, wattage, value, tolerance, date code

### NON-INDUCTIVE

Models of equivalent physical and electrical specifications are available with non-inductive (Ayrton-Perry) winding. They are identified by adding the letters "NI" to the end of the part number in the special section. For non-inductive models the maximum resistance values are lower, see Standard Electrical Specifications table.

### DERATING





## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

## Material Category Policy

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.**

**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.**