Chokes and inductors

For high frequency and EMC
RF chokes, LBC series

Ordering code: **B82144A**
Date: August 2005

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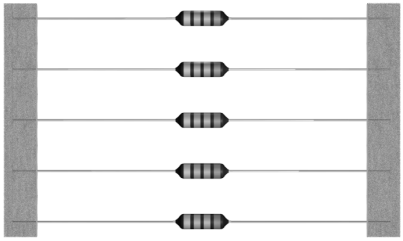
LBC choke (Large Bobbin Core)
Rated current 20 to 2200 mA
Rated inductance 1 to 100 000 µH



Construction

- Large ferrite drum core
- Winding: enamel copper wire
- Flame-retardant lacquer coating

Features

- Very wide inductance range
- High rated current

Applications

- RF blocking and filtering
- Decoupling and interference suppression
- For telecommunications (12- or 16-kHz blocking filter), automotive electronics, energy-saving lamps, entertainment electronics

Terminals

- Central axial leads, lead-free tinned

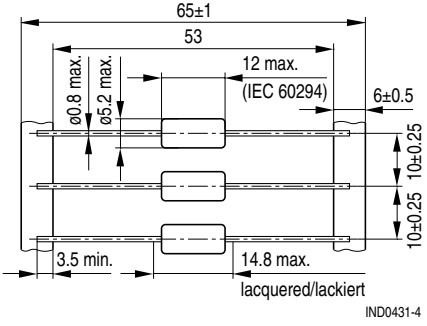
Marking

Inductance indicated by color bands in accordance with IEC 60062

Delivery mode

Taped, AMMO and reel packing
For more details see chapter "Taping and Packing"

Dimensional drawing



Minimum lead spacing 15 mm

Approx. weight 1.1 g

Characteristics and ordering codes

For further technical data see page 5.

L_R µH	Tolerance[1]	Q_{min}	f_Q MHz	I_R mA	R_{max} Ω	$f_{res,\ min}$ MHz	Ordering code (reel packing)[2]
1.0	± 10 %	40	7.96	2200	0.08	200	B82144A2102K000
1.5	≙ K	40	7.96	2100	0.09	190	B82144A2152K000
2.2		40	7.96	1900	0.11	140	B82144A2222K000
3.3		40	7.96	1750	0.13	120	B82144A2332K000
4.7		40	7.96	1600	0.16	100	B82144A2472K000
6.8		40	7.96	1500	0.19	80	B82144A2682K000
10		60	2.52	1400	0.22	60	B82144A2103K000
15		60	2.52	1250	0.28	20	B82144A2153K000
22		50	2.52	1100	0.35	12	B82144A2223K000
33	± 5 %	40	2.52	900	0.43	8.0	B82144A2333J000
47	≙ J	40	2.52	800	0.50	5.0	B82144A2473J000
68		30	2.52	700	0.60	4.5	B82144A2683J000
100		50	0.796	600	0.70	3.5	B82144A2104J000
150		50	0.796	500	0.90	3.0	B82144A2154J000
220		50	0.796	400	1.60	2.4	B82144A2224J000
330		50	0.796	330	1.90	2.0	B82144A2334J000
470		40	0.796	280	2.50	1.5	B82144A2474J000
680		30	0.796	240	2.80	1.3	B82144A2684J000
1000		60	0.252	200	3.80	1.2	B82144A2105J000
1500		60	0.252	160	6.00	1.0	B82144A2155J000
2200		60	0.252	120	9.00	0.8	B82144A2225J000
3300		60	0.252	110	12.0	0.6	B82144A2335J000
4700		60	0.252	90	20.0	0.5	B82144A2475J000
6800		60	0.252	80	30.0	0.4	B82144A2685J000
10000		50	0.0796	60	42.0	0.35	B82144A2106J000
15000		50	0.0796	50	68.0	0.30	B82144A2156J000
22000		50	0.0796	40	120	0.26	B82144A2226J000

1) Closer tolerances upon request.
2) For AMMO packing the last digit has to be a »9«. Example: B82144A2102K009

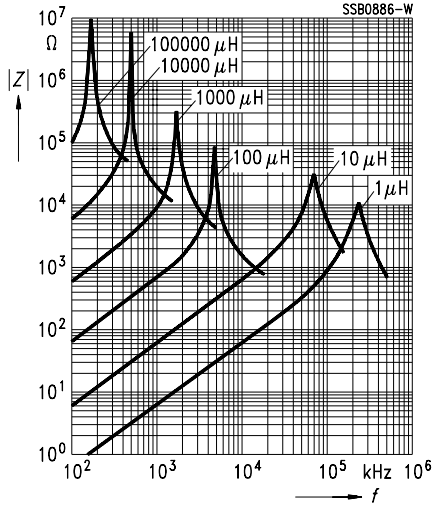
Characteristics and ordering codes (continued)

For further technical data see page 5.

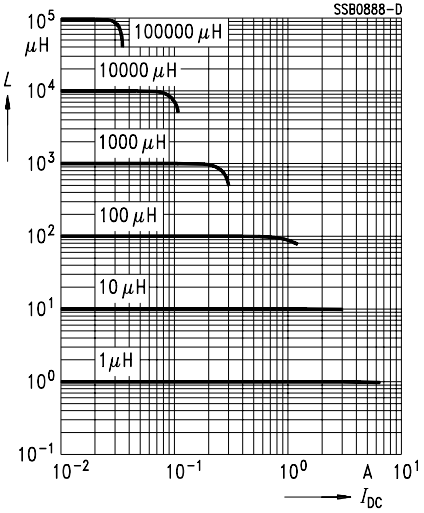
L_R µH	Tolerance[1]	Q_{min}	f_Q MHz	I_R mA	R_{max} Ω	$f_{res,\ min}$ MHz	Ordering code (reel packing)[2]
33000	± 5 %	50	0.0796	35	150	0.22	B82144A2336J000
47000	≙ J	40	0.0796	30	230	0.18	B82144A2476J000
68000		40	0.0796	25	290	0.15	B82144A2686J000
100000		40	0.0796	20	420	0.12	B82144A2107J000
For telecommunications in the blocking filter for 12- and 16-kHz counting pulses							
980	± 3 %	25	0.016	200	3.8	1.2	B82144A2984A000
1450	≙ A	25	0.016	140	6.0	1.0	B82144A2145A500
2600		20	0.012	120	11.0	0.7	B82144A2265A000
3050		25	0.016	100	12.0	0.6	B82144A2305A500
5330		20	0.012	90	25.0	0.5	B82144A2535A300

1) Closer tolerances upon request.
2) For AMMO packing the last digit has to be a »9«.
Example: B82144A2336J009

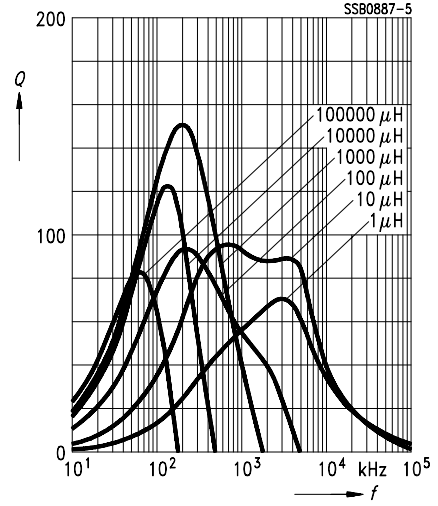
Impedance |*Z*|
versus frequency *f*
measured with impedance analyzer
HP 4191A / HP 4194A



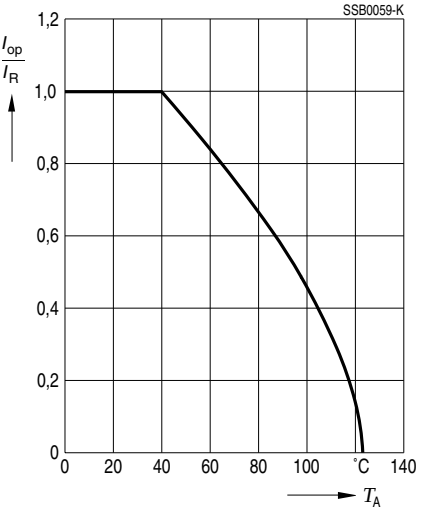
Inductance *L*
versus DC load current I_{DC}
measured with LCR meter
HP 4275A



Q factor
versus frequency *f*
measured with impedance analyzer
HP 4194A



General technical data

Rated inductance L_R	Measuring frequency: $L \leq 10\ \mu H$ = 1 MHz $10\ \mu H < L \leq 4700\ \mu H$ = 100 kHz $L > 4700\ \mu H$ = 10 kHz Measuring current: ≤ 1 mA Distance between measuring clamps: 25.4 mm
Q factor Q_{min}	Measured with HP 4342A
Rated current I_R	Maximum permissible dc current referred to 40 °C ambient temperature, for derating see below
Inductance decrease $\Delta L/L_0$	≤ 10 % (referred to initial value) at I_R at 20 °C ambient temperature
DC resistance R_{max}	Measured at 20 °C ambient temperature, distance between measuring clamps: 25.4 mm
Resonance frequency $f_{res, min}$	Measured with Scalar Network Analyzer ZAS from Rohde & Schwarz
Climatic category	In accordance with IEC 60068-1 55/125/56 (– 55 °C/+125 °C/56 days damp heat test)
Solderability	In accordance with IEC 60068-2–20, test Ta 235 °C, 2 s, ≥ 90 % wetting
Resistance to soldering heat	In accordance with IEC 60068-2-20, test Tb 260 °C, 10 s
Tensile strength of leads	In accordance with IEC 60068-2-21, test Ua ≥ 20 N
Current derating I_{op}/I_R versus ambient temperature T_A (Rated temperature T_R = 40 °C)	

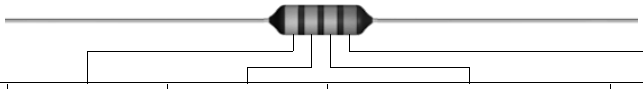
Mounting information

When bending the leads, take care that the start-of-winding areas at the face ends (protected by glue and lacquer) are not subjected to any mechanical stress.

Color coding of the inductance value

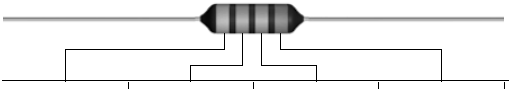
The inductance value and tolerance are encoded by means of colored bands in accordance with IEC 60062. The basic unit is µH.

1st band 1st digit of inductance value
2nd band 2nd digit of inductance value
3rd band multiplier, i.e. the power of ten, by which the first two digits have to be multiplied.
4th band tolerance of the inductance value.



Color code	1st band = 1st digit	2nd band = 2nd digit	3rd band = multiplier	4th band = tolerance
Colorless	—	—	—	± 20 % (M)
Silver	—	—	× 10^{-2} µH = 0.01 µH	± 10 % (K)
Gold	—	—	× 10^{-1} µH = 0.1 µH	± 5 % (J)
Black	—	0	× 10^{0} µH = 1 µH	—
Brown	1	1	× 10^{1} µH = 10 µH	
Red	2	2	× 10^{2} µH = 100 µH	± 2 % (G)
Orange	3	3	× 10^{3} µH = 1000 µH	
Yellow	4	4	× 10^{4} µH = 10000 µH	
Green	5	5	× 10^{5} µH = 100000 µH	Special designs manufactured to customer specifications are identified by a white tolerance band.
Blue	6	6		
Violet	7	7		
Grey	8	8		
White	9	9		

Examples:



1st band	2nd band	3rd band	4th band	Decoding
Yellow 4	Violet 7	Gold × 0.1 µH	Silver ± 10 %	= 47 × 0.1 µH ± 10 % = 4.7 µH ± 10 %
Brown 1	Green 5	Red × 100 µH	Gold ± 5 %	= 15 × 100 µH ± 5 % = 1500 µH ± 5 %