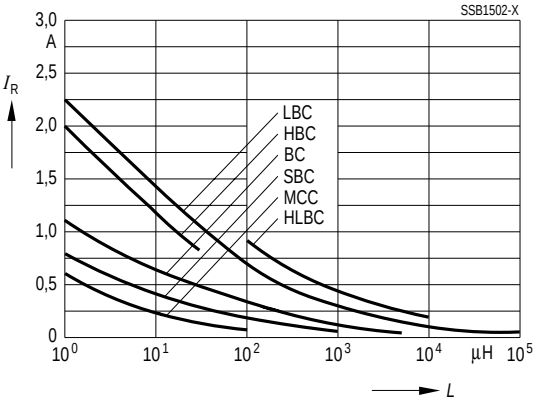
Overview

EPCOS RF chokes are super-compact lacquered EMI suppression chokes with wire leads. Outstanding characteristics are excellent RF and temperature properties and saturation behavior.

Six series are available – each in four different sizes. The following diagram shows the rated currents as a function of the inductance value for each series.



Typical applications

RF chokes are required for low and high frequency decoupling of signal and control circuits, for filtering supply voltages, in other filters and for all other uses in which electromagnetic compatibility (EMC) needs to be ensured

Fields of application:

- Entertainment electronics
- Automotive electronics
- Household appliances
- Lighting technology
- Telecommunications
- Industrial electronics

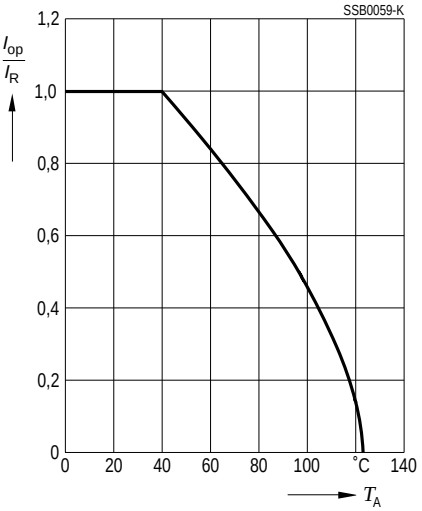
Special designs

- In applications where the rated currents of the standard series are not adequate, special HLBC choke designs with even larger core diameters are available upon request.
- Special MCC and BC choke designs with single-layer winding are available for special RF applications.
- Special BC designs with enamelled copper wires of a higher temperature resistance have been developed for high ambient temperatures and for energy-saving lamps.

Integration in mains power lines

Lacquered RF chokes are considered to be non-insulated elements (test voltage of 100 V) in the sense of the VDE and EN standards. For applications where insulation is not necessary, however, they can be integrated into power supply lines without any problem.

General technical data

Rated inductance L_R	Measuring frequency: $L \leq 10$ µH = 1 MHz 10 µH < $L \leq$ 4700 µH = 100 kHz $L >$ 4700 µH = 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)	

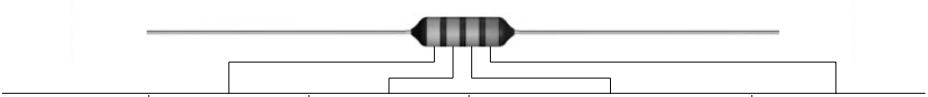
Mounting information

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 %