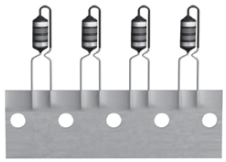
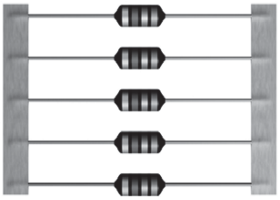
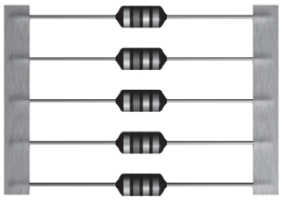
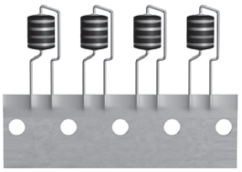
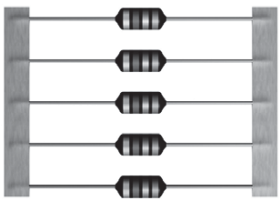
Inductors

RF chokes - Selection guide, General

Date: June 2021

RF chokes

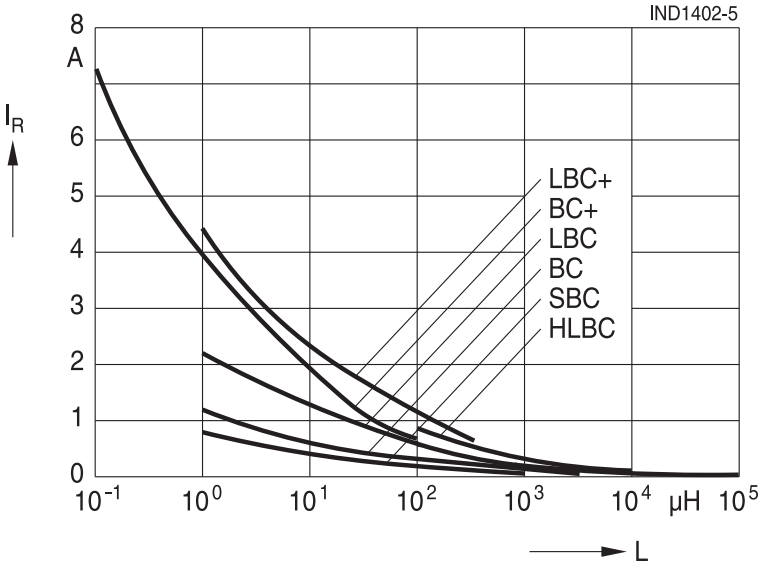
Selection guide

	Series	L_R	I_R	Dimensions ∅ x l (max.)	Min. lead spacing (mm)		Type
		µH	mA	mm	axial	radial	
	SBC	1 … 1000	55 … 725	3.0 × 6.8	10	—	B82141A
	BC	1.0 … 4700	600 … 4450	4.0 × 9.2	12.5 —	— 5	B78108S B78148S
	BC+	0.1 … 100	640 … 7300	4.0 × 9.5	12.5 —	— 5	B78108E B78148E
	LBC	1.0 … 100 000	20 … 2200	5.2 × 12.0	15	—	B82144A
	LBC	1.0 … 100 000	20 … 2200	5.2 × 12.0	15	—	B82144F1
	LBC+	1.0 … 470	600 … 4450	6.5 × 9.2	15	—	B82144F2
	LBC	1.0 … 100 000	20 … 2500	6.5 × 9.2	—	5	B82144B1
	LBC+	1.0 … 470	600 … 4450	6.5 × 9.2	—	5	B82144B2
	HLBC	100 … 10 000	110 … 860	6.5 × 12.0	15	—	B82145A

General

Our RF chokes are lacquered EMI suppression chokes with wire leads. Outstanding characteristics are excellent RF and temperature properties and saturation behavior.

Six series are available. 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

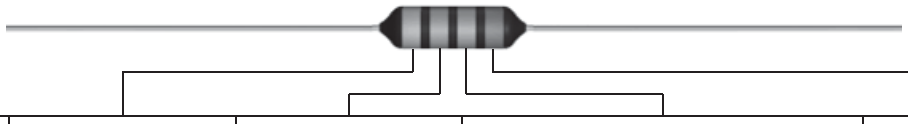
Integration in mains power lines

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.

Color coding of the inductance value

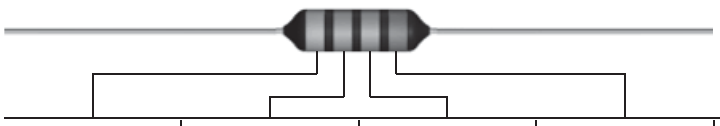
The inductance value and tolerance are encoded by means of colored bands in accordance with IEC 60062. The basic unit is μH.

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		

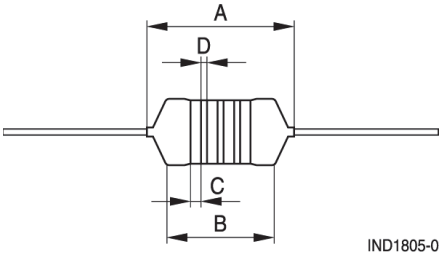
Examples:



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%

Information about the exterior of the RF choke

Code		
B	Minimum substrate lacquer range	Flange to flange
A	Maximum substrate lacquer range	Maximum lacquer coated length (acc. to type) Epoxy glue film is also allowed in this length
B	Minimum coating lacquer range	Flange to flange (B)
A	Maximum coating lacquer range	Maximum lacquer coated length (acc. to type) Epoxy glue film is also allowed in this length
	Substrate lacquer visible on the body	Maximum 1 mm^2
	Maximum height of lacquer bubble	0.3 mm, but < maximum until body diameter
	Maximum size of crater (lacquer bubble)	SBC: diameter 1.5 mm BC, BC+, LBC, LBC+, HLBC: diameter 2 mm
	Hole in the lacquer and glue-cone	Maximum 0.5 mm^2
	Visible winding wire (missing lacquer)	Maximum length 1.5 mm, but it must be electrically insulated
	Visible winding wire contour under the lacquer coating	Allowable
	Winding wire end (out of the glue cone)	Maximum length until body diameter is allowed
B, H	Area of colour coding	Flange to flange
C, D	C: Minimum size of coding band D: Distance between the bands	C ≥ 0.1 mm, circumference ≥ 270°, D ≥ 0.1 mm (by different colours it is not necessary),
E, F, G	Maximum exfoliation size on the lead insulation lacquer in defined area	E: 0.5 mm^2; F: it is not allowed; G: 0.75 mm^2



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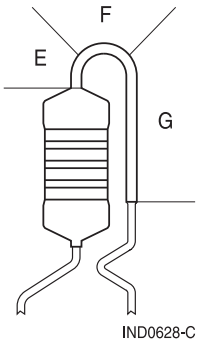
B82144A, B82144F
B82145A



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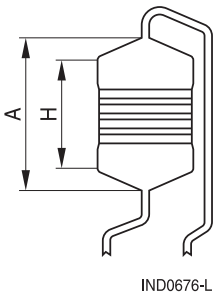

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B82144B