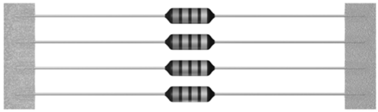
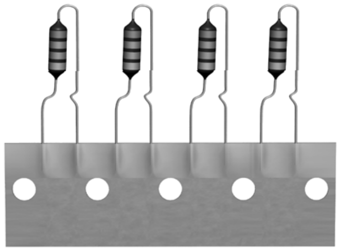
Chokes and inductors

For high frequency and EMC
RF chokes, HBC series

Series/Type:	**B82143A / B82143B**
Date:	November 2005

HBC choke (High-Current Bobbin Core)
Rated current 850 to 2000 mA
Rated inductance 1 to 27 µH





Construction

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

Features

- Very high rated current
- Low dc resisctances
- RoHS-compatible (see page 5)

Applications

- Decoupling
- Interference suppression
- For electronic household appliances, automotive and entertainment electronics

Terminals

- Central axial leads, lead-free tinned
- Radially bent to 5 mm lead spacing

Marking

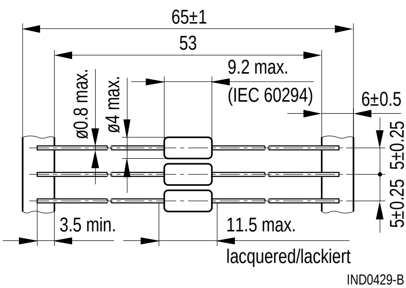
Inductance indicated by color bands to IEC 60062

Delivery mode

Taped, Ammo and reel packing (see page 7)

Dimensional drawings

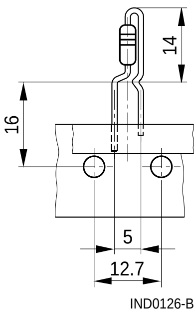
B82143A (axial leads, taped)



Minimum lead spacing 12.5 mm

Approx. weight 0.38 g

B82143B (central radial leads, taped)



Schematic drawing (details page 7)

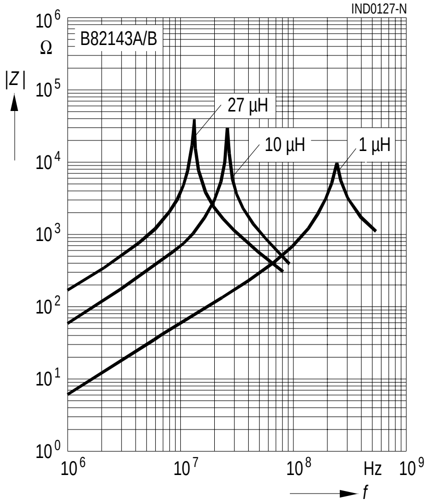
Characteristics and ordering codes

For further technical data see page 5.

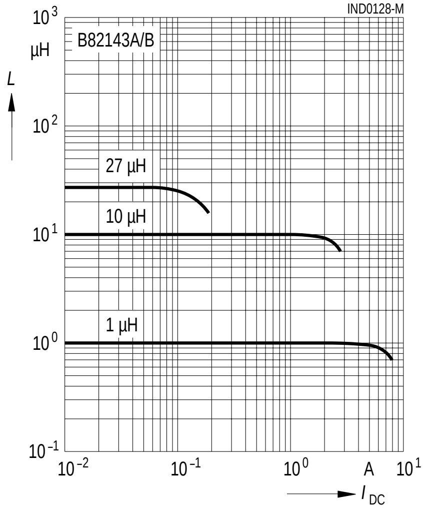
L_R µH	Tolerance[1]	Q_{min}	f_Q MHz	I_R mA	R_{max} mΩ	$f_{res, min}$ MHz	Ordering code[2] (reel packing)[3]
1.0	± 10 % ≙ K	50	7.96	2000	80	195	B82143+1102K000
1.2		50	7.96	1800	90	180	B82143+1122K000
1.5		50	7.96	1700	100	165	B82143+1152K000
1.8		50	7.96	1650	110	155	B82143+1182K000
2.2		50	7.96	1600	120	140	B82143+1222K000
2.7		50	7.96	1500	130	125	B82143+1272K000
3.3		50	7.96	1450	140	115	B82143+1332K000
3.9		50	7.96	1400	150	105	B82143+1392K000
4.7		50	7.96	1300	170	60	B82143+1472K000
5.6		50	7.96	1250	190	45	B82143+1562K000
6.8		40	7.96	1200	220	35	B82143+1682K000
8.2		40	7.96	1150	240	25	B82143+1822K000
10		40	7.96	1100	250	21	B82143+1103K000
12		35	2.52	1050	270	17	B82143+1123K000
15		35	2.52	1000	300	16	B82143+1153K000
18		35	2.52	950	330	15	B82143+1183K000
22		35	2.52	900	370	13	B82143+1223K000
27		35	2.52	850	420	11	B82143+1273K000

1) Closer tolerances upon request.
2) Replace the + by code letter »A« for axial taping or by »B« for radial taping.
3) For Ammo pack the last digit has to be a »9«. Example: B82143A1102K009.

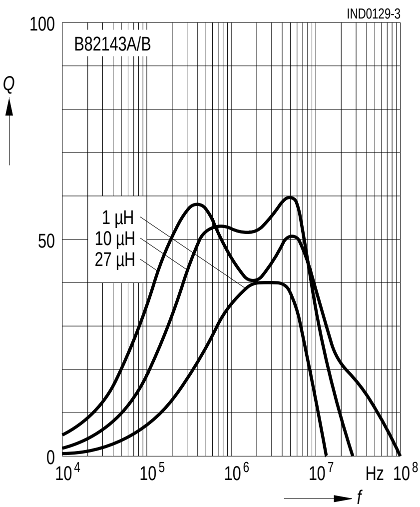
Impedance |Z|
versus frequency f
measured with impedance analyzer
HP 4191A / HP 4194A



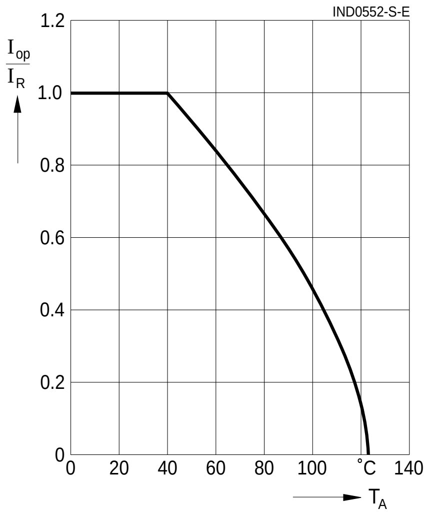
Inductance L
versus DC load current I_{DC}
measured with LCR meter
HP 4275A



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



Current derating I_{op}/I_R
versus ambient temperature T_A
(rated temperature T_R = 40 °C)



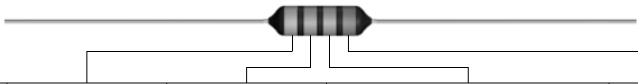
General technical data

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	55/125/56 (–55 °C/+125 °C/56 days damp heat test) to IEC 60068-1
Solderability	235 °C, 2 s, ≥90% wetting to IEC 60068-2–20, test Ta
Resistance to soldering heat	To IEC 60068-2-20, test Tb 260 °C, 10 s
Tensile strength of leads	To IEC 60068-2-21, test Ua ≥20 N
RoHS-compatible	RoHS-compatible is defined as compatible with the following documents: DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 February 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment COM (2004) 606 final Proposal for a COUNCIL DECISION amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment.
⚠ 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

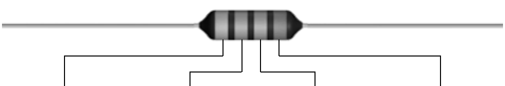
The inductance value and tolerance are encoded by means of colored bands in accordance with IEC 60062. The basic unit is µH.

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	—	—	$\times 10^{-2}$ µH = 0.01 µH	± 10 % (K)
Gold	—	—	$\times 10^{-1}$ µH = 0.1 µH	± 5 % (J)
Black	—	0	$\times 10^{0}$ µH = 1 µH	—
Brown	1	1	$\times 10^{1}$ µH = 10 µH	
Red	2	2	$\times 10^{2}$ µH = 100 µH	± 2 % (G)
Orange	3	3	$\times 10^{3}$ µH = 1000 µH	
Yellow	4	4	$\times 10^{4}$ µH = 10000 µH	
Green	5	5	$\times 10^{5}$ 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		

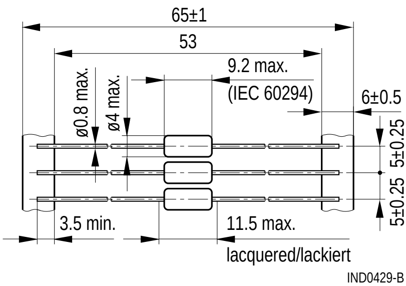
Examples:



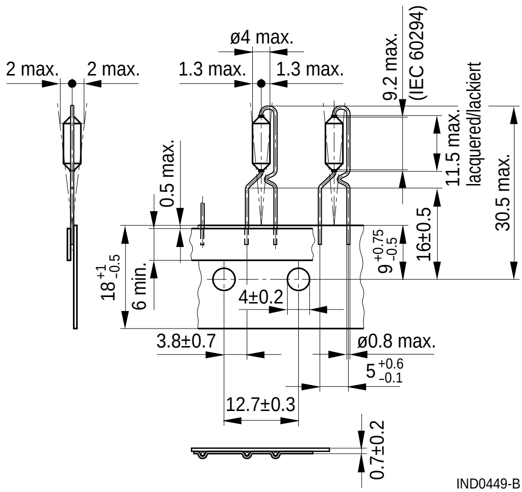
1st band	2nd band	3rd band	4th band	Decoding
Yellow 4	Violet 7	Gold × 0.1 µH	Silver ± 10 %	= 47 × 0.1 µH ± 10 % = 4.7 µH ± 10 %
Brown 1	Green 5	Red × 100 µH	Gold ± 5 %	= 15 × 100 µH ± 5 % = 1500 µH ± 5 %

Taping and packing

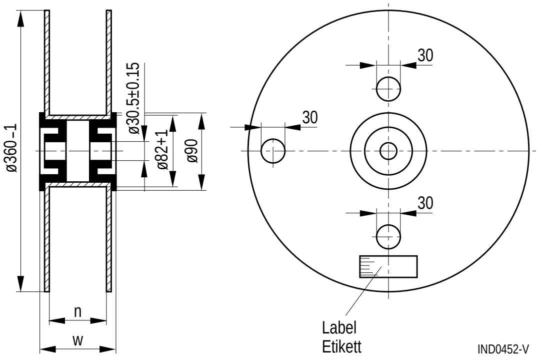
Axially taped (to IEC 60286-1)



Radially taped (to IEC 60286-2)

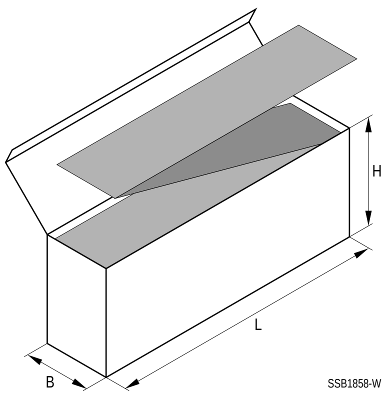


Reel packing



	Axial	Radial
n (mm)	72 +1	42 +1
w (mm)	84 max.	54 max.

Ammo pack



	Axial	Radial
L (mm)	265 max.	340 max.
B (mm)	75 max.	50 max.
H (mm	125 max.	210 max.

Packing units

	Reel packing pcs./reel	Ammo pack pcs./pack.
Axial	5000	2500
Radial	2000	2500

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