



# Inductors

## RF chokes, HBC series

**Series/Type:** B82143A, B82143B

**Date:** March 2008

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### **HBC choke (High-Current Bobbin Core)**

**Rated inductance 1 H to 27 H**

**Rated current 850 mA to 2000 mA**

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



**B82143A Construction**

**Features**

- Very high rated current
- Low DC resistance
- Suitable for wave soldering ■ RoHS-compatible

**Applications**

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

**Terminals**

- Central axial leads (B82143A)
- Radially bent to 5 mm lead spacing (B82143B)
- Base material Cu
- Hot-dipped with pure tin

**Marking**

Inductance indicated by color bands to IEC 60062

**Delivery mode and packing units**

- Taped, Ammo and reel packing ■

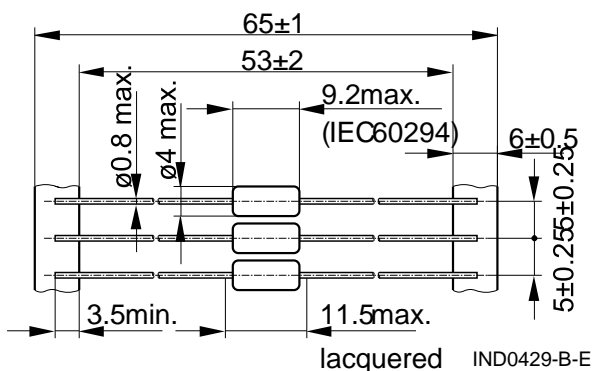
Packing units:

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

**Dimensional drawings**

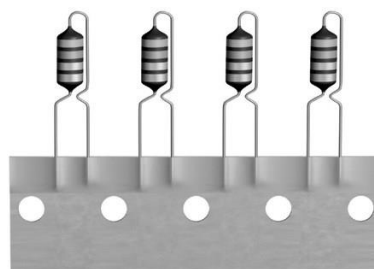
B82143A (axial leads, taped)

Dimensions in mm



Minimum lead spacing 12.5 mm

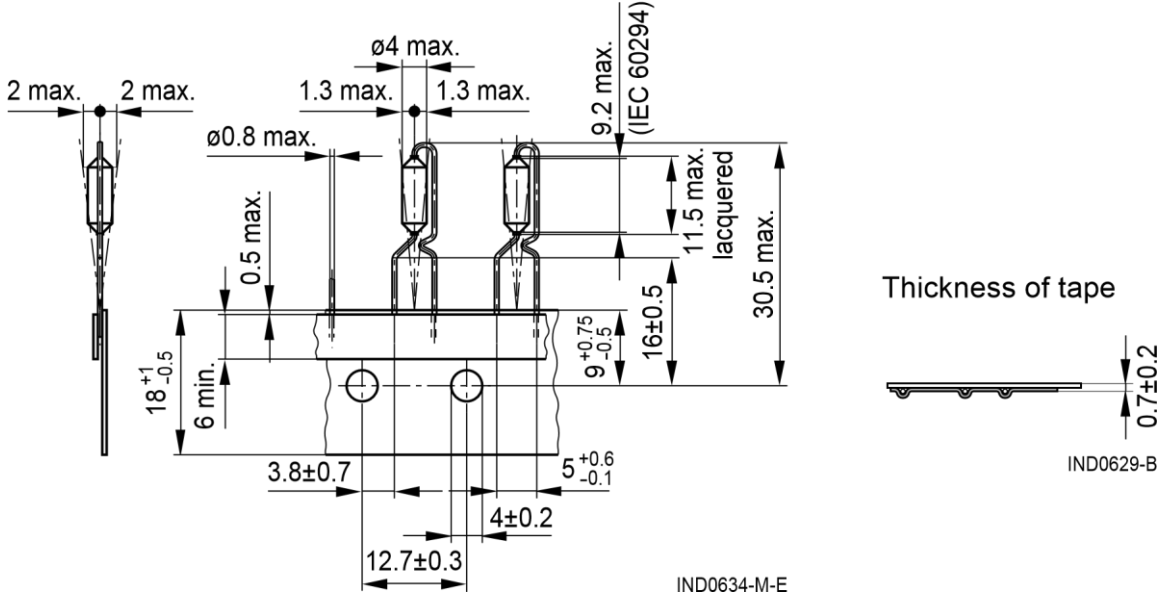
Please read *Cautions and warnings* and *Important notes* at the end of this document.03/08



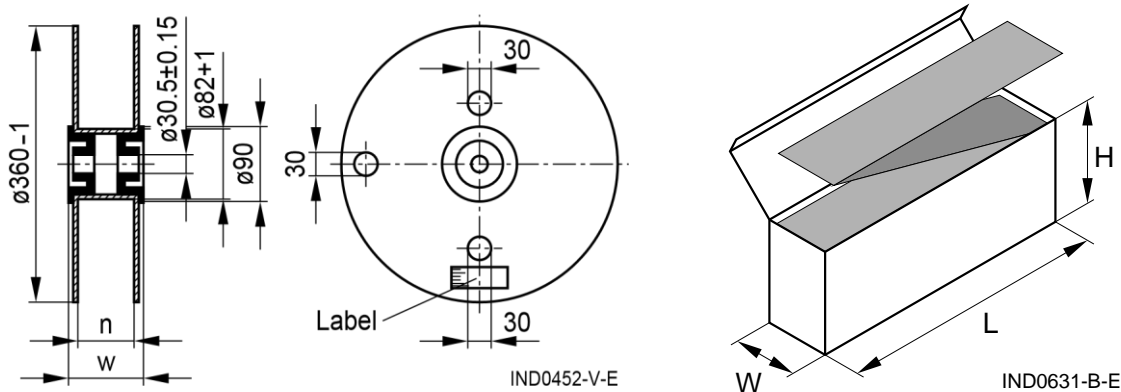
B82143B

HBC series, 4 9.2 (mm)

B82143B (central radial leads, taped)



Packing



n (mm): Axial 72 +1, radial 42 +1

w (mm): Axial 84 max., radial 54 max.

L x W x H (max. mm):


Axial: 265 x 75 x 125, radial: 340 x 50 x 210 **Technical**

**data and measuring conditions**

Rated inductance $L_R$	Measured with LCR meter Agilent 4284A or impedance analyzer Agilent 4294A Measuring frequency: $L_R \leq 10 \mu\text{H}$ = 1 MHz $10 \mu\text{H} < L_R \leq 4700 \mu\text{H}$ = 100 kHz Measuring current: $\leq 1 \text{ mA}$ Measuring temperature: 20 °C
Q factor $Q_{\min}$	Measured with precision impedance analyzer Agilent 4294A, 20 °C
Rated temperature $T_R$	40 °C

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Rated current $I_R$	Maximum permissible DC current at rated temperature
Inductance decrease $\Delta L/L_0$	$\leq 10\%$ (referred to initial value) at $I_R$ , 20 °C
DC resistance $R_{max}$	Measured at 20 °C
Resonance frequency $f_{res,min}$	Measured with Agilent 4294A or 8753ES, 20 °C
Solderability (lead-free)	Sn95.5Ag3.8Cu0.7: (245 ±5) °C, (3 ±0.3) s Wetting of soldering area $\geq 90\%$ (to IEC 60068-2-20, test Ta)
Resistance to soldering heat	(260 ±5) °C, 10 s (to IEC 60068-2-20, test Tb)
Tensile strength of leads	$\geq 20$ N (to IEC 60068-2-21, test Ua)
Climatic category	55/125/56 (to IEC 60068-1)
Storage conditions	Mounted: -55 °C ... +125 °C Packaged: -25 °C ... +40 °C, $\leq 75\%$ RH
Weight	Approx. 0.38 g

 **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.

**Characteristics and ordering codes**

$L_R$ $\mu\text{H}$	Tolerance <sup>1)</sup>	$Q_{min}$	$f_Q$ MHz	$I_R$ mA	$R_{max}$ $\Omega$	$f_{res, min}$ MHz	Ordering code <sup>2)</sup> (reel packing) <sup>3)</sup>
1.0	$\pm 10\%$ $K_{\underline{\Delta}}$	50	7.96	2000	0.08	195	B82143+1102K000
1.2		50	7.96	1800	0.09	180	B82143+1122K000
1.5		50	7.96	1700	0.10	165	B82143+1152K000
1.8		50	7.96	1650	0.11	155	B82143+1182K000
2.2		50	7.96	1600	0.12	140	B82143+1222K000
2.7		50	7.96	1500	0.13	125	B82143+1272K000
3.3		50	7.96	1450	0.14	115	B82143+1332K000
3.9		50	7.96	1400	0.15	105	B82143+1392K000
4.7		50	7.96	1300	0.17	60	B82143+1472K000

<sup>1)</sup> Closer tolerances on request.

<sup>2)</sup> Replace the + by code letter »A« for axial taping or by »B« for radial taping. <sup>3)</sup> For Ammo pack the last digit has to be a »9«. Example: B82143A1102K009

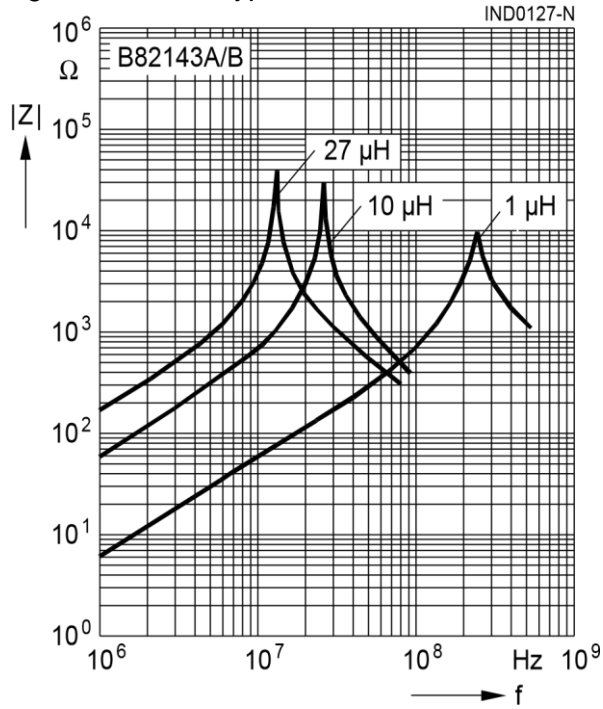
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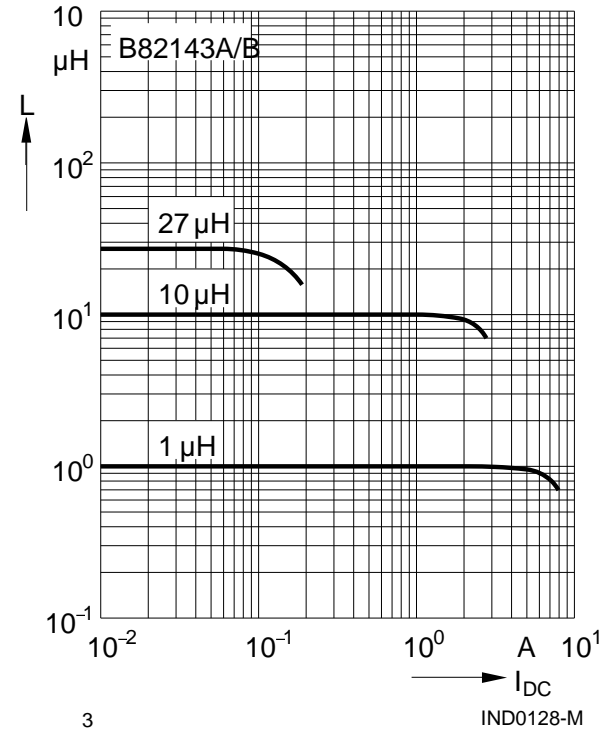
5.6	50	7.96	1250	0.19	45	B82143+1562K000
6.8	40	7.96	1200	0.22	35	B82143+1682K000
8.2	40	7.96	1150	0.24	25	B82143+1822K000
10	40	7.96	1100	0.25	21	B82143+1103K000
12	35	2.52	1050	0.27	17	B82143+1123K000
15	35	2.52	1000	0.30	16	B82143+1153K000
18	35	2.52	950	0.33	15	B82143+1183K000
22	35	2.52	900	0.37	13	B82143+1223K000
27	35	2.52	850	0.42	11	B82143+1273K000

HBC series, 4 9.2 (mm)

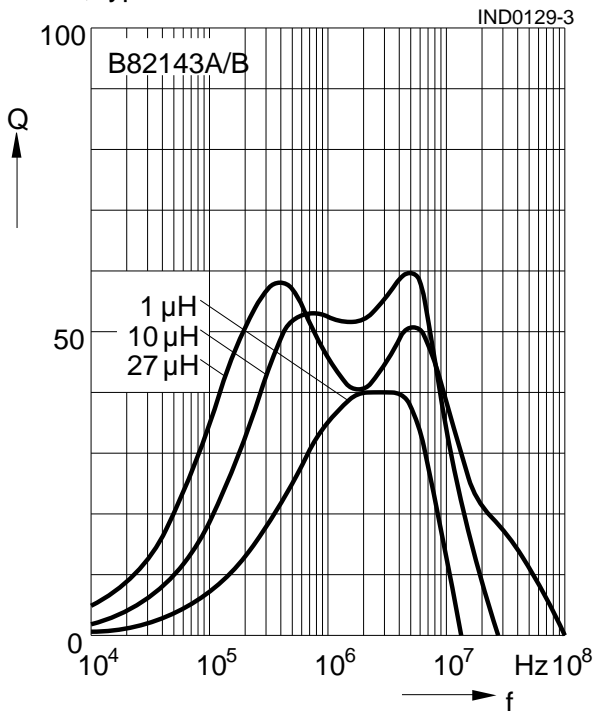
**Impedance  $|Z|$  versus frequency  $f$**   
 measured with impedance analyzer Agilent 4294A or S-parameter network analyzer Agilent 8753ES, typical values at 20 °C



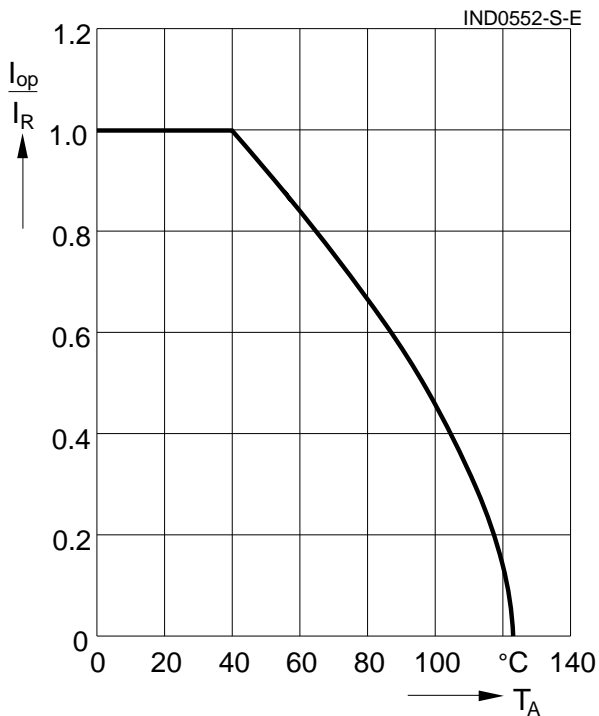
**Inductance  $L$  versus DC load current  $I_{DC}$**   
 measured with LCR meter Agilent 4284A, typical values at 20 °C



**Q factor versus frequency  $f$**  measured with impedance analyzer Agilent 4294A, typical values at 20 °C



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



- Please note the recommendations in our Inductors data book (latest edition) and in the data sheets.
  - Particular attention should be paid to the derating curves given there.
  - The soldering conditions should also be observed. Temperatures quoted in relation to wavesoldering refer to the pin, not the housing.
- If the components are to be washed varnished it is necessary to check whether the washing varnish agent that is used has a negative effect on the wire insulation, any plastics that are used, or on glued joints. In particular, it is possible for washing varnish agent residues to have a negative effect in the long-term on wire insulation.
- The following points must be observed if the components are potted in customer applications:
  - Many potting materials shrink as they harden. They therefore exert a pressure on the plastic housing or core. This pressure can have a deleterious effect on electrical properties, and in extreme cases can damage the core or plastic housing mechanically.
  - It is necessary to check whether the potting material used attacks or destroys the wire insulation, plastics or glue.
  - The effect of the potting material can change the high-frequency behaviour of the components.
- Ferrites are sensitive to direct impact. This can cause the core material to flake, or lead to breakage of the core.
- Even for customer-specific products, conclusive validation of the component in the circuit can only be carried out by the customer.



**RF chokes**

**B82143A, B82143B**

**HBC series, 4 9.2 (mm)**

Please read *Cautions and warnings* and *Important notes* at the end of this document.



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