



Inductors

RF chokes, HLBC series

Series/Type: B82145A
Date: March 2008

HLBC choke (High-Current Large Bobbin Core)

Rated inductance 100 μ H to 10 000 μ H

Rated current 110 mA to 860 mA

Construction

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

Features

- High rated current at high inductance ratings
- Suitable for wave soldering
- RoHS-compatible

Applications

- Decoupling
- Interference suppression
- For energy-saving lamps and entertainment electronics

Terminals

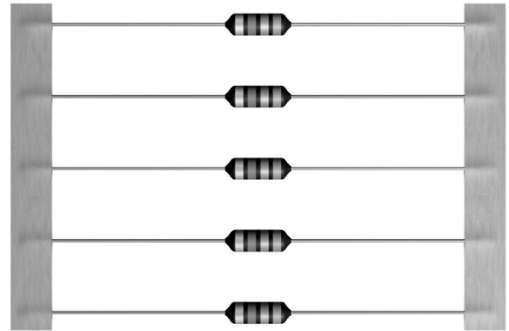
- Central axial leads
- Base material CuAg0.1
- Hot-dipped with pure tin

Marking

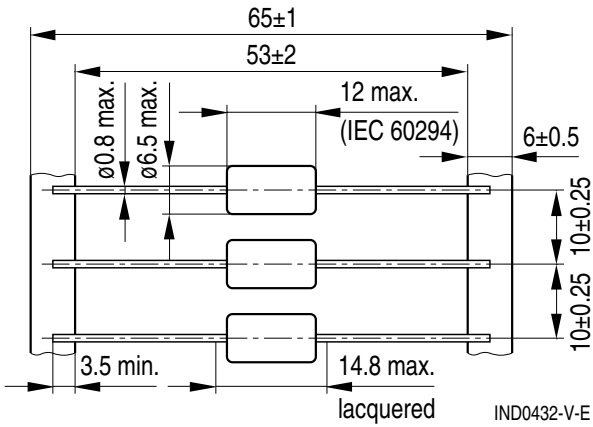
Inductance indicated by color bands to IEC 60062

Delivery mode and packing unit

- Taped and reeled
- Packing unit: 1250 pcs./reel

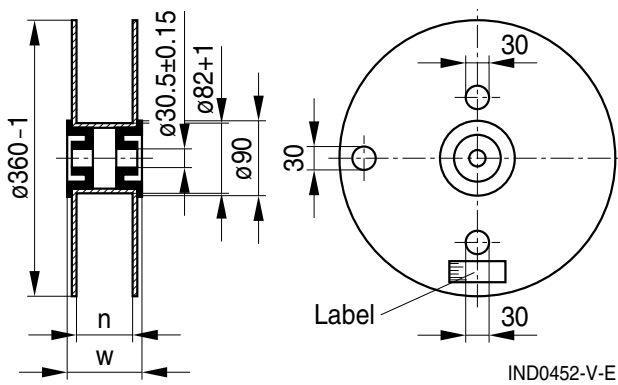


Dimensional drawing



Dimensions in mm
Minimum lead spacing 15 mm

Packing



Dimensions in mm

n (mm): 72 +1
w (mm): 84 max

Technical data and measuring conditions

| | |
|---|---|
| Rated inductance L_R | Measured with LCR meter Agilent 4284A or impedance analyzer Agilent 4294A Measuring frequency: $100 \mu\text{H} < L_R \leq 4700 \mu\text{H} = 100 \text{ kHz}$ $L_R > 4700 \mu\text{H} = 10 \text{ kHz}$ Measuring current: $\leq 1 \text{ mA}$ Measuring temperature: $20 \text{ }^\circ\text{C}$ |
| Q factor Q_{\min} | Measured with precision impedance analyzer Agilent 4294A, $20 \text{ }^\circ\text{C}$ |
| Rated temperature T_R | $40 \text{ }^\circ\text{C}$ |
| 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 , $20 \text{ }^\circ\text{C}$ |
| DC resistance R_{\max} | Measured at $20 \text{ }^\circ\text{C}$ |
| Resonance frequency $f_{\text{res},\min}$ | Measured with Agilent 4294A or 8753ES, $20 \text{ }^\circ\text{C}$ |
| Solderability (lead-free) | Sn95.5Ag3.8Cu0.7: $(245 \pm 5) \text{ }^\circ\text{C}$, $(3 \pm 0.3) \text{ s}$ Wetting of soldering area $\geq 90\%$ (to IEC 60068-2-20, test Ta) |
| Resistance to soldering heat | $(260 \pm 5) \text{ }^\circ\text{C}$, 10 s (to IEC 60068-2-20, test Tb) |
| Tensile strength of leads | $\geq 20 \text{ N}$ (to IEC 60068-2-21, test Ua) |
| Climatic category | 55/125/56 (to IEC 60068-1) |
| Storage conditions | Mounted: $-55 \text{ }^\circ\text{C} \dots +125 \text{ }^\circ\text{C}$ Packaged: $-25 \text{ }^\circ\text{C} \dots +40 \text{ }^\circ\text{C}$, $\leq 75\% \text{ RH}$ |
| Weight | Approx. 1.3 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.

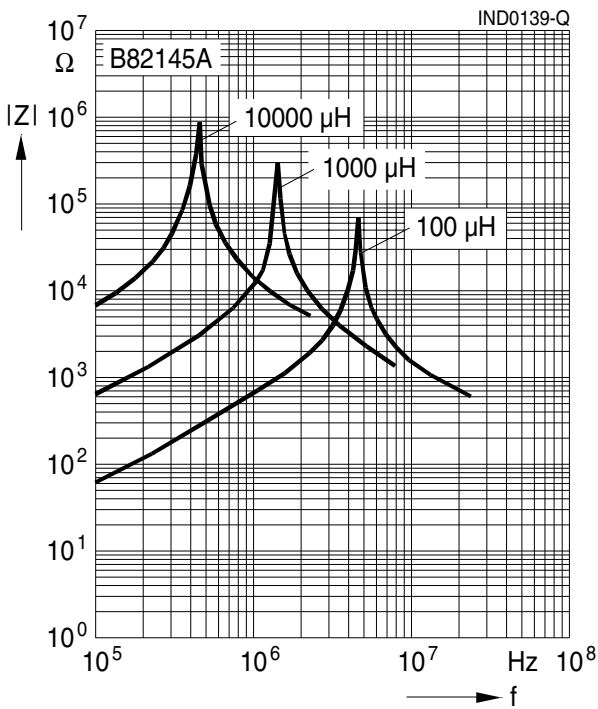
Characteristics and ordering codes

| L_R μH | Tolerance ¹⁾ | Q_{\min} | f_Q MHz | I_R mA | R_{\max} Ω | $f_{\text{res,min}}$ MHz | Ordering code |
|------------------------|-------------------------|------------|--------------|-------------|------------------------|-----------------------------|-----------------|
| 100 | $\pm 5\% \triangleq J$ | 50 | 0.796 | 860 | 0.70 | 3.5 | B82145A1104J000 |
| 150 | | 40 | 0.796 | 770 | 0.90 | 3.0 | B82145A1154J000 |
| 220 | | 30 | 0.796 | 690 | 1.10 | 2.5 | B82145A1224J000 |
| 330 | | 30 | 0.796 | 630 | 1.30 | 2.1 | B82145A1334J000 |
| 470 | | 30 | 0.796 | 510 | 1.90 | 1.8 | B82145A1474J000 |
| 680 | | 20 | 0.796 | 440 | 2.50 | 1.5 | B82145A1684J000 |
| 1000 | | 60 | 0.252 | 370 | 3.60 | 1.3 | B82145A1105J000 |
| 1500 | | 60 | 0.252 | 300 | 5.40 | 1.0 | B82145A1155J000 |
| 2200 | | 60 | 0.252 | 250 | 8.00 | 0.8 | B82145A1225J000 |
| 3300 | | 60 | 0.252 | 200 | 12.5 | 0.6 | B82145A1335J000 |
| 4700 | | 60 | 0.252 | 170 | 18.0 | 0.5 | B82145A1475J000 |
| 6800 | | 60 | 0.252 | 130 | 28.5 | 0.4 | B82145A1685J000 |
| 10000 | | 50 | 0.0796 | 110 | 35.0 | 0.35 | B82145A1106J000 |

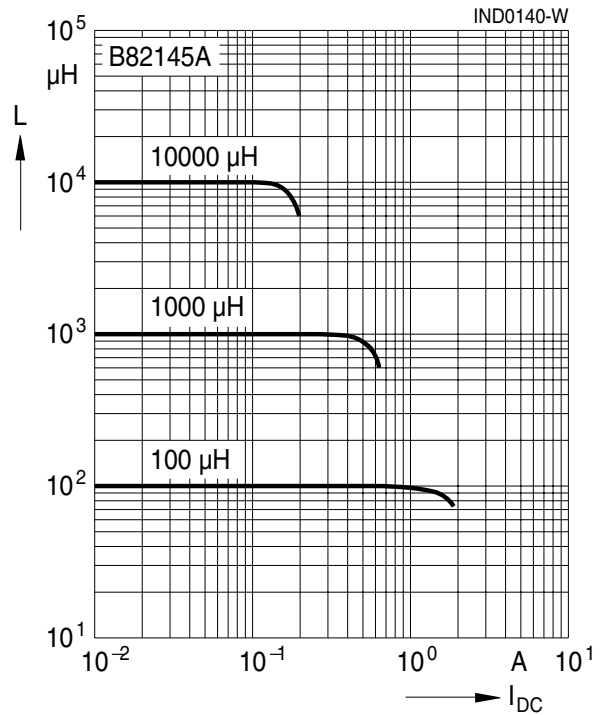
HLBC chokes with diameter 7.5 and 8.5 mm for even higher rated currents available on request.
 HLBC chokes with temperature range up to 140 °C available on request.

1) Closer tolerances on request.

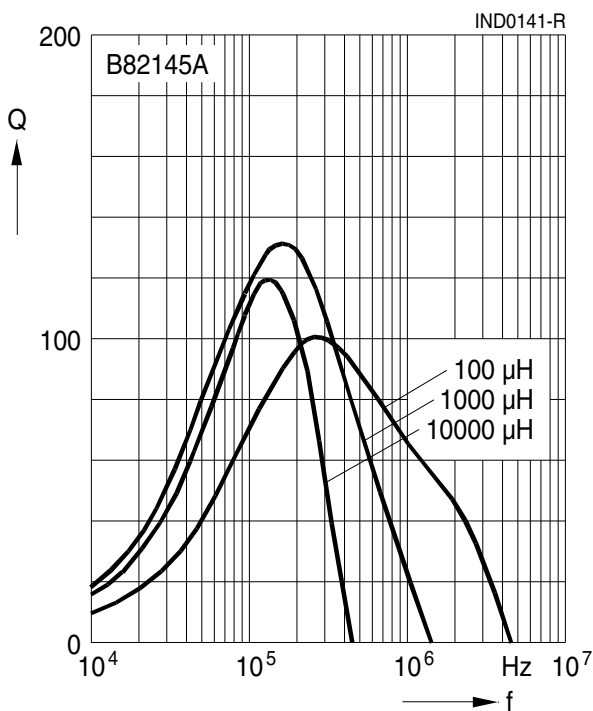
Impedance $|Z|$ versus frequency f
 measured with impedance analyzer Agilent 4294A or S-parameter network analyzer Agilent 8753ES, typical values at 20 °C



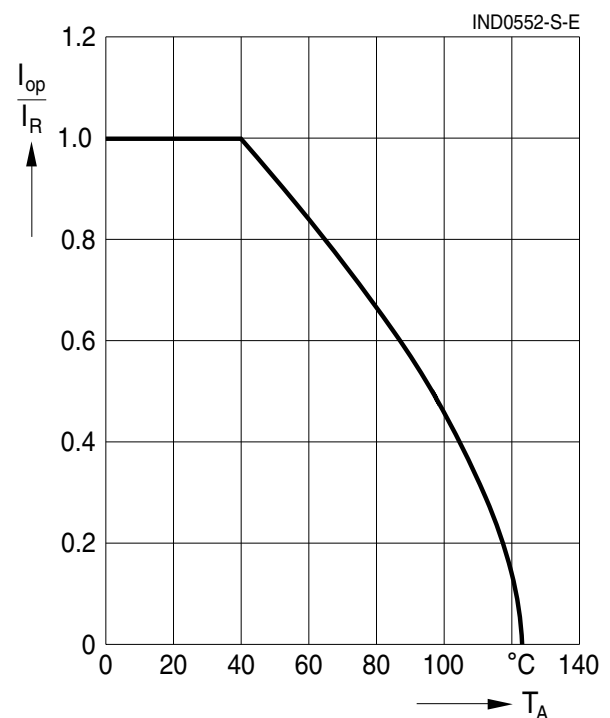
Inductance L versus DC load current I_{DC}
 measured with LCR meter Agilent 4284A, typical values at 20 °C



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)



Cautions and warnings

- 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 wave soldering 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.

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