



Inductors

VHF chokes

Series/Type: **B82111B**
Date: **March 2008**


Rated voltage 500 V AC/DC
Rated current 2 A to 10 A
Rated inductance 3 μ H to 25 μ H



Construction

- Ferrite cylinder core
- Winding: single-layer, enamel copper wire, winding ends brought out as leads
- Polyester insulating sleeve

Features

- High resonant frequency
- High rated current
- Suitable for wave soldering
- RoHS-compatible
- ENEC10 approval 

Applications

- RF blocking and filtering
- Interference suppression in small appliances

Terminals

- Central axial leads
- Base material Cu
- Hot-dip tinned with pure tin

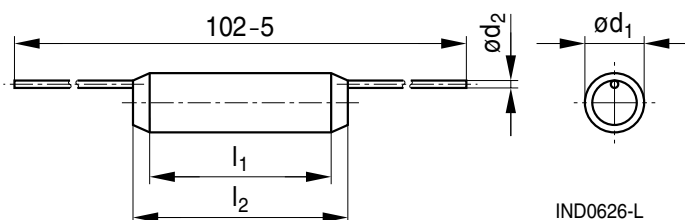
Marking

L_R and I_R in clear text and approval mark

Delivery mode

Bulk

Dimensional drawing



Dimensions in mm


Technical data and measuring conditions

| | |
|--|--|
| Test voltage V_{test} | 2500 V AC, 1 min |
| Rated inductance L_R | Measured with LCR meter Agilent 4284A or impedance analyzer Agilent 4294A Measuring frequency: $L_R \leq 10 \mu\text{H} = 1 \text{ MHz}$ $10 \mu\text{H} < L_R \leq 1000 \mu\text{H} = 100 \text{ kHz}$ Measuring voltage: 1 V Measuring temperature: 20 °C |
| Inductance tolerance | ±20% |
| Rated temperature T_R | 60 °C |
| Rated current I_R | Maximum permissible DC current at rated temperature |
| DC resistance R_{typ} | Measured at 20 °C, tolerance ±20%, typical values |
| Resonance frequency f_{res} | Measured with Agilent 4294A or 8753ES, 20 °C tolerance ±30% |
| Solderability (lead-free) | Sn95.5Ag3.8Cu0.7: (245 ±5) °C, (3 ±0.3) s Wetting of soldering area ≥ 90% (to IEC 60068-2-20, test Ta) |
| Resistance to soldering heat (wave soldering) | (260 ±5) °C, 10 s (to IEC 60068-2-20, test Tb) |
| Tensile strength of leads | ≥ 30 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, ≤ 75% RH |
| Approvals | EN 60938 |

 **Mounting information**

When bending the leads, take care that the bending point is **at least 3 mm** apart from the face ends of the core and that the start-of-winding areas are not subjected to any mechanical stress.

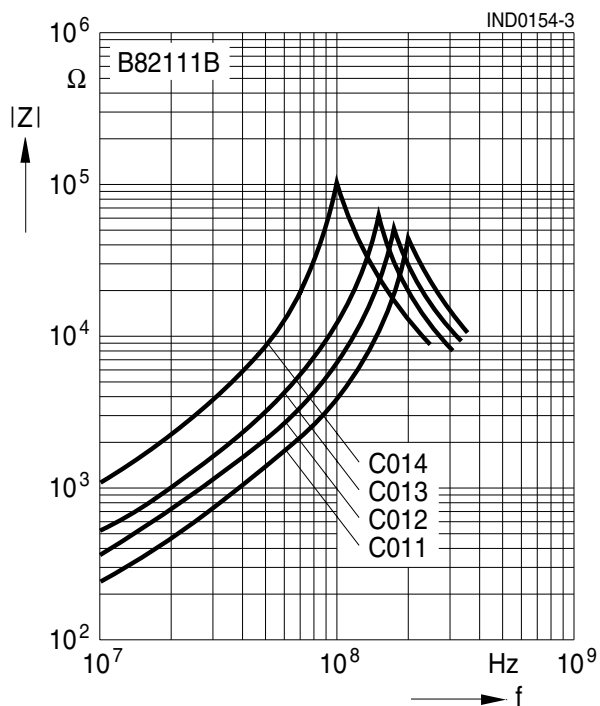
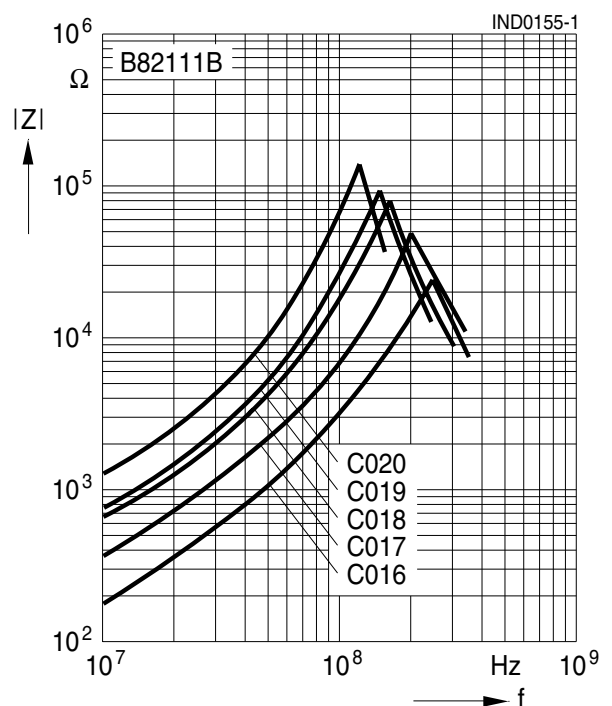
Characteristics and ordering codes

| I_R | L_R μH | R_{typ} Ω | f_{res} MHz | Dimensions (mm) | | | | Approx. weight g | Ordering code | Approvals  |
|-------|------------------------|------------------------------|-------------------------|-----------------|-----------|----------------------|-------|------------------------|-----------------|--|
| | | | | $l_{1-1.5}$ | l_{2-3} | $d_{1 \text{ max.}}$ | d_2 | | | |
| 2 | 17 | 0.063 | 100 | 18.3 | 24 | 7.0 | 0.45 | 3.0 | B82111B0000C014 | × |
| 3 | 8 | 0.025 | 145 | 18.3 | 24 | 7.0 | 0.63 | 3.0 | B82111B0000C013 | × |
| 3 | 13 | 0.024 | 170 | 24.5 | 29 | 6.5 | 0.67 | 3.5 | B82111B0000C019 | × |
| 3 | 20 | 0.054 | 125 | 24.5 | 29 | 6.0 | 0.5 | 3.5 | B82111B0000C020 | × |
| 3 | 25 | 0.046 | 85 | 28.5 | 34 | 8.5 | 0.63 | 6.0 | B82111B0000C024 | × |
| 4 | 6 | 0.017 | 170 | 18.3 | 24 | 7.5 | 0.75 | 3.0 | B82111B0000C012 | × |
| 4 | 11 | 0.020 | 150 | 24.5 | 29 | 6.5 | 0.71 | 6.0 | B82111B0000C018 | × |
| 4 | 15 | 0.024 | 120 | 28.5 | 34 | 8.5 | 0.75 | 7.0 | B82111B0000C023 | × |
| 6 | 4 | 0.014 | 205 | 18.3 | 24 | 7.5 | 0.8 | 4.0 | B82111B0000C011 | × |
| 6 | 6 | 0.010 | 200 | 24.5 | 29 | 7.0 | 0.95 | 5.0 | B82111B0000C017 | × |
| 6 | 9 | 0.012 | 150 | 28.5 | 34 | 9.0 | 0.95 | 8.0 | B82111B0000C022 | × |
| 9 | 3 | 0.006 | 220 | 24.5 | 29 | 7.5 | 1.2 | 5.0 | B82111B0000C016 | × |
| 10 | 5 | 0.005 | 175 | 28.5 | 34 | 9.5 | 1.3 | 10.0 | B82111B0000C021 | × |

× = approval granted

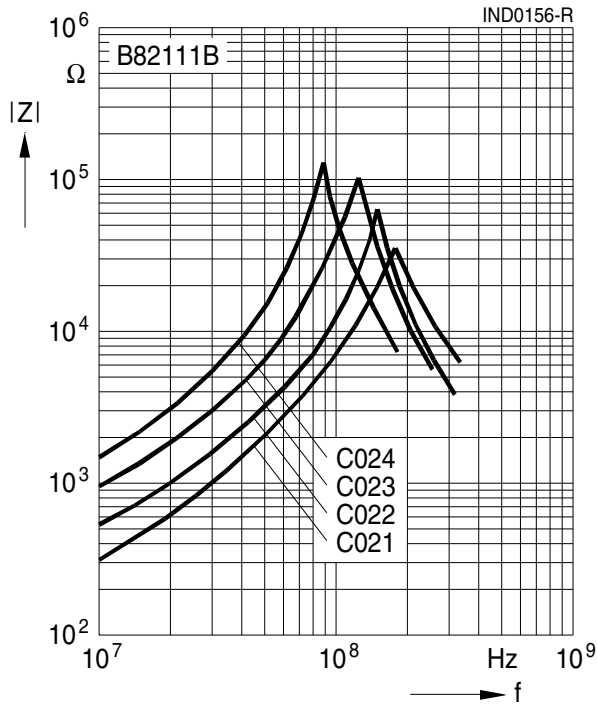
Impedance $|Z|$ versus frequency f

measured with impedance analyzer Agilent 4294A or S-parameter network analyzer Agilent 8753ES, typical values at 20 °C

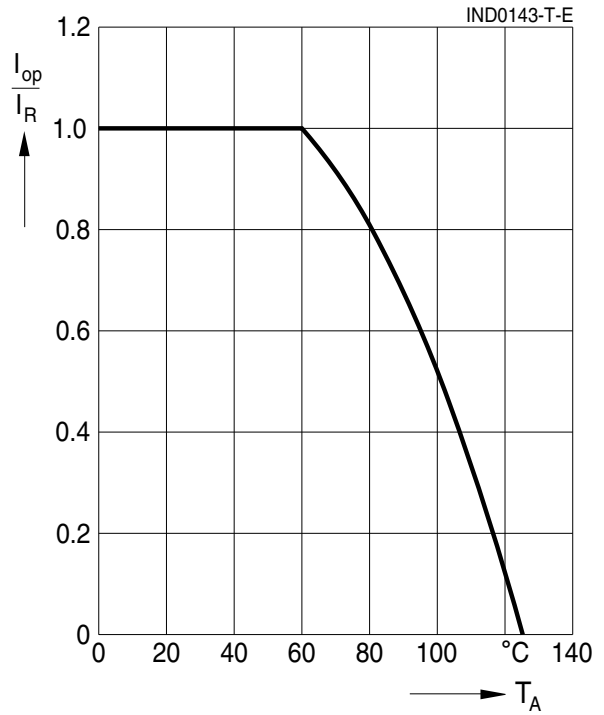
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Impedance $|Z|$ versus frequency f
 measured with impedance analyzer Agilent 4294A or S-parameter network analyzer Agilent 8753ES, typical values at 20 °C

B82111B0000C021...C024



Current derating I_{op}/I_R versus ambient temperature T_A
 (rated temperature $T_R = 60$ °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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