Inductors

VHF chokes

Series/Type: **B82111E**

Date: March 2008

Rated voltage 500 V AC/DC
Rated current 0.1 A to 6 A
Rated inductance 7 µH to 1200 µH

Construction

- Ferrite cylinder core
- Winding: single-layer, enamel copper wire
- Polyester insulating sleeve

Features

- High resonant frequency
- Wide inductance range
- Design complies with EN 60938
- Suitable for wave soldering
- RoHS-compatible

Applications

- RF blocking and filtering
- Interference suppression in small appliances
- Decoupling in telecommunications and entertainment electronics

Terminals

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

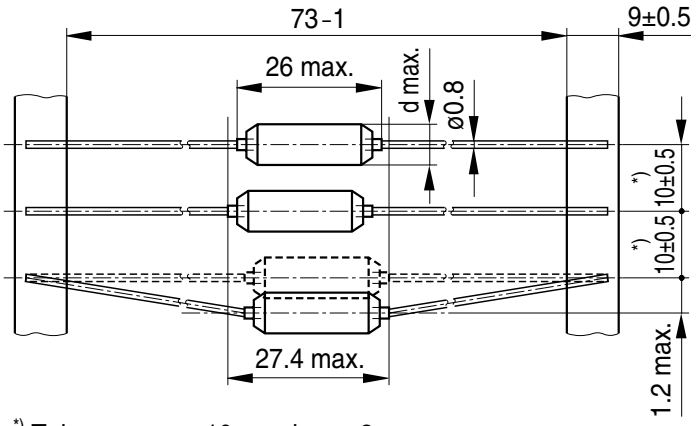
Marking

L_R and I_R in clear text

Delivery mode and packing unit

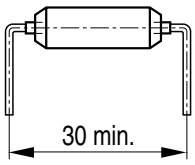
- Taped and reeled
- Packing unit: 1000 pcs./reel

Dimensional drawing



*) Tolerance over 10 spacings ±2 mm

IND0150-S-E

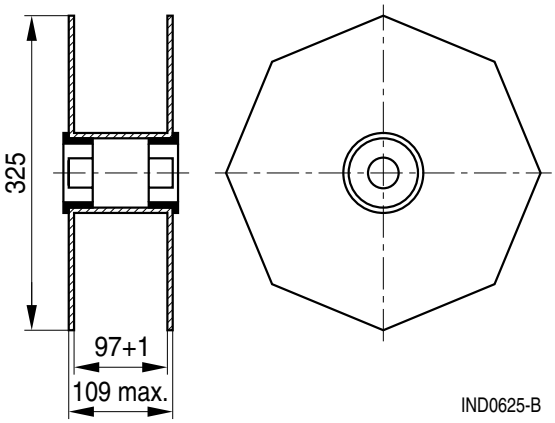


IND0151-A

Dimensions in mm

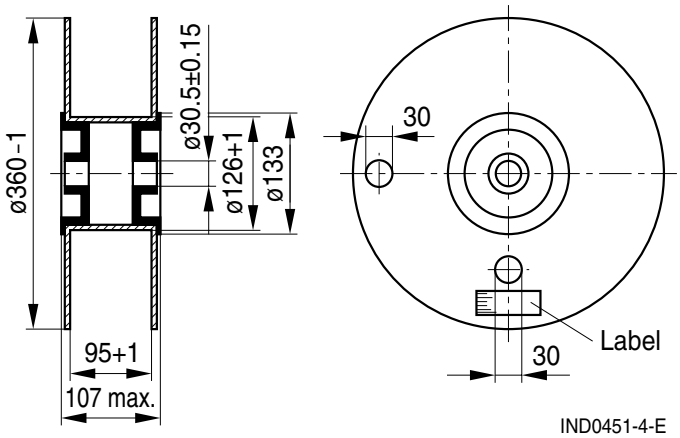
Reel packing

B82111E*C020, C029



IND0625-B

B82111E*C21 … C028



IND0451-4-E

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: $L_R \leq 10$ µH = 1 MHz 10 µH < $L_R \leq 1000$ µH = 100 kHz $L_R > 1000$ µH = 10 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, tst 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

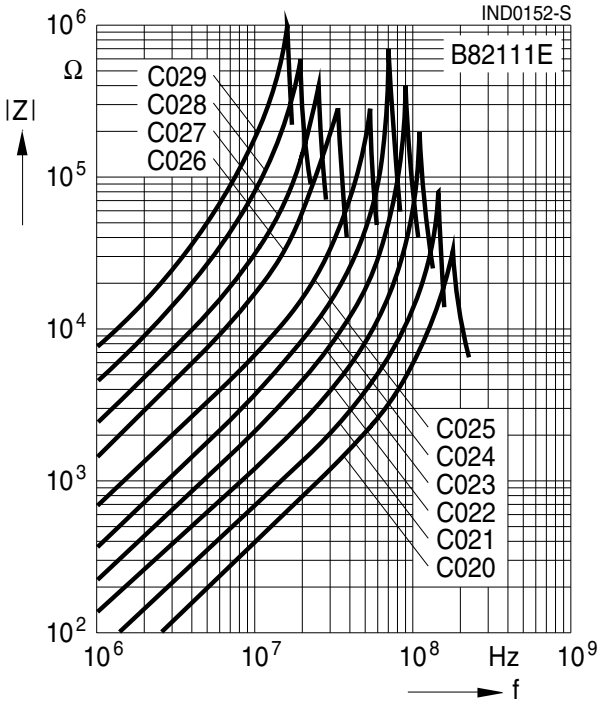
⚠ Mounting information

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.

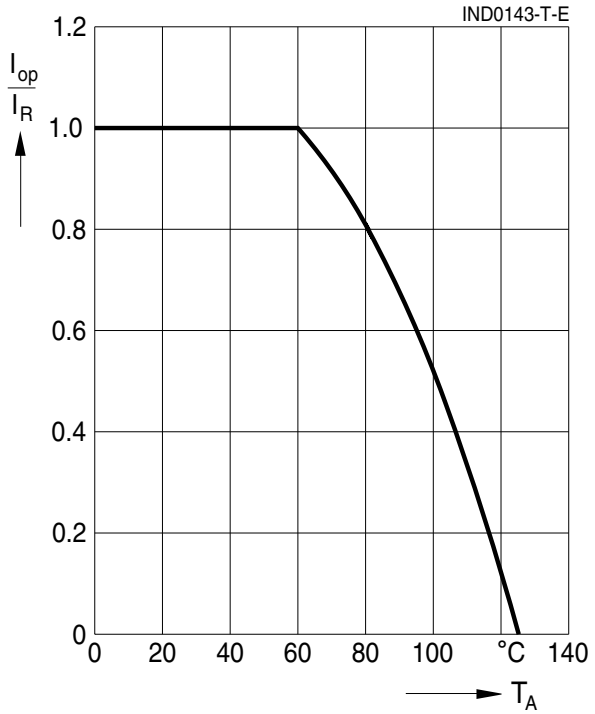
Characteristics and ordering codes

I_R A	L_R µH	R_{typ} Ω	f_{res} MHz	Approx. weight g	Dimensions d_{max} mm	Ordering code
0.1	1200	34	16	2.2	6.0	B82111E0000C029
0.2	680	14	19	2.2	6.0	B82111E0000C028
0.3	470	6.5	25	2.3	6.0	B82111E0000C027
0.5	220	2.6	32	2.3	6.5	B82111E0000C026
1	100	0.65	55	2.5	6.5	B82111E0000C025
1.5	56	0.30	70	2.7	6.5	B82111E0000C024
2	40	0.18	90	3.0	7.0	B82111E0000C023
3	22	0.07	110	3.3	7.0	B82111E0000C022
4	12	0.04	140	3.5	7.5	B82111E0000C021
6	7	0.02	180	3.6	7.5	B82111E0000C020

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



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.

Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application.**

   As a rule, EPCOS is either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether an EPCOS product with the properties described in the product specification is suitable for use in a particular customer application.

2. We also point out that **in individual cases, a malfunction of passive electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified.** In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of a passive electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of a passive electronic component.

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4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as hazardous)**. Useful information on this will be found in our Material Data Sheets on the Internet (www.epcos.com/material). Should you have any more detailed questions, please contact our sales offices.

5. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order.

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