



# 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  $\mu$ H to 1200  $\mu$ H**



### 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

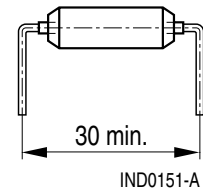
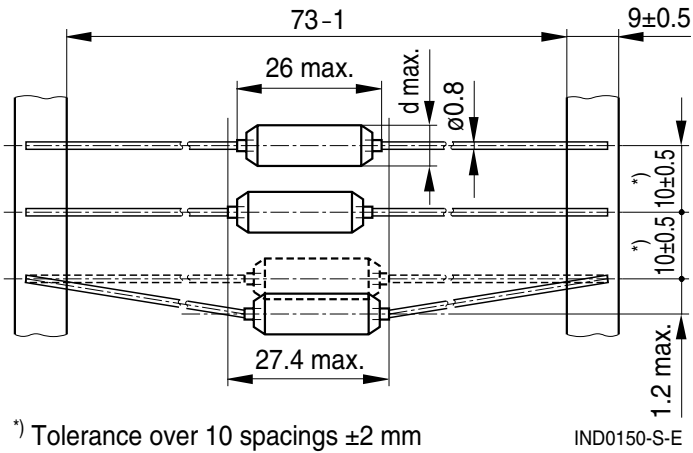
### Marking

$L_R$  and  $I_R$  in clear text

### Delivery mode and packing unit

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

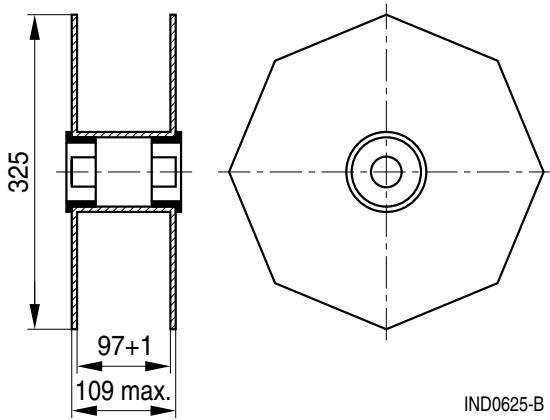
**Dimensional drawing**



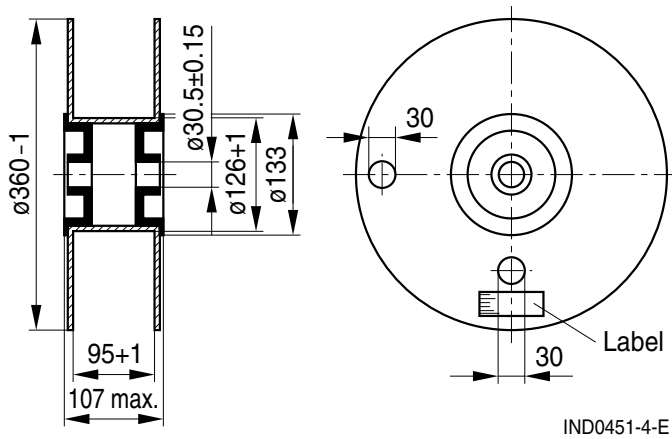
Dimensions in mm

**Reel packing**

B82111E\*C020, C029



B82111E\*C21 ... C028



Dimensions in mm

**Technical data and measuring conditions**

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

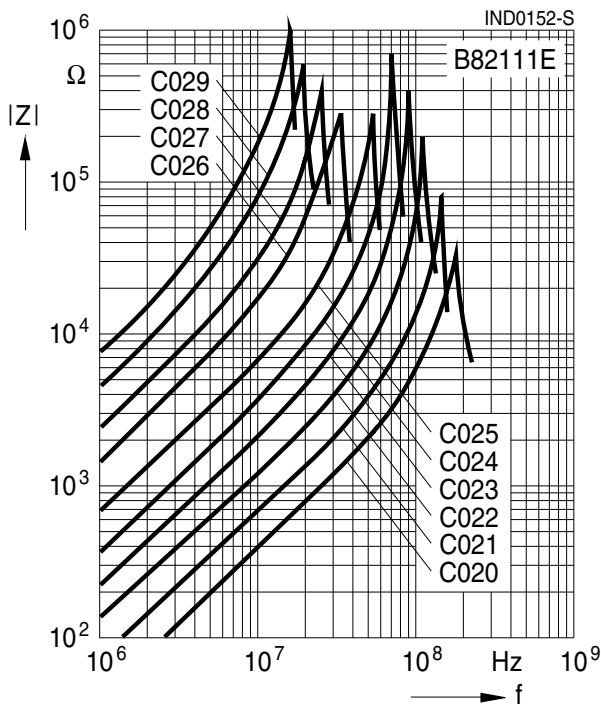
 **Mounting information**

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.

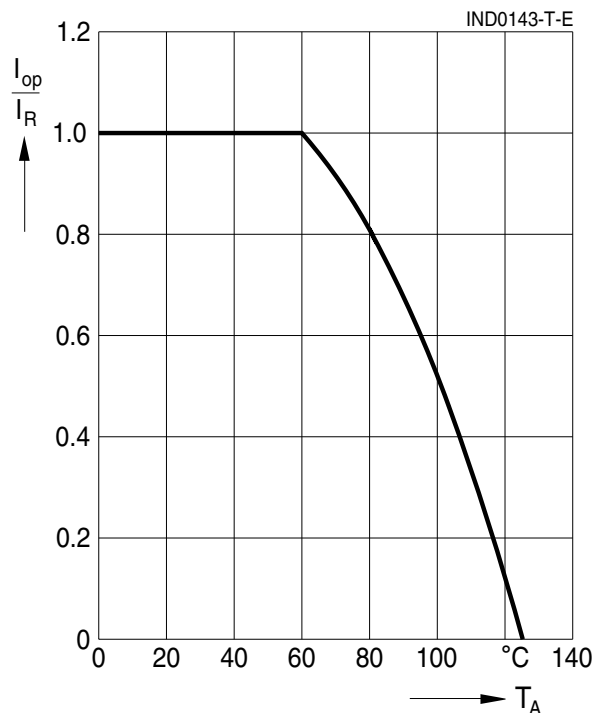
**Characteristics and ordering codes**

$I_R$	$L_R$	$R_{typ}$	$f_{res}$	Approx. weight	Dimensions	Ordering code
A	$\mu\text{H}$	$\Omega$	MHz	g	$d_{max}$ mm	
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.

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