

## Inductors

### VHF chokes

**Series/Type:** B82111E  
**Date:** June 2012

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B82111E0000C020	B82111E0001C020	2022-02-25	2022-06-30	2022-09-30
B82111E0000C029		2022-02-25	2022-06-30	2022-09-30

Please contact your nearest TDK sales office if you need support in selecting a suitable substitute. The addresses of our worldwide sales network are presented at [www.tdk-electronics.tdk.com/sales](http://www.tdk-electronics.tdk.com/sales).

**Rated voltage 500 V AC/DC**

**Rated current 0.1 ... 6 A**

**Rated inductance 7 ... 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

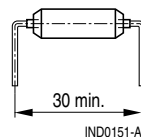
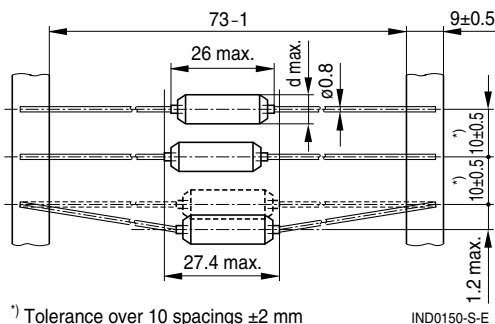
$L_R$  and  $I_R$  in clear text

### Delivery mode and packing unit

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



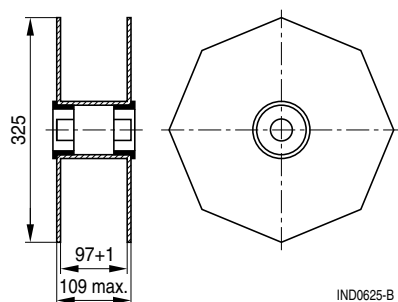
# Dimensional drawing



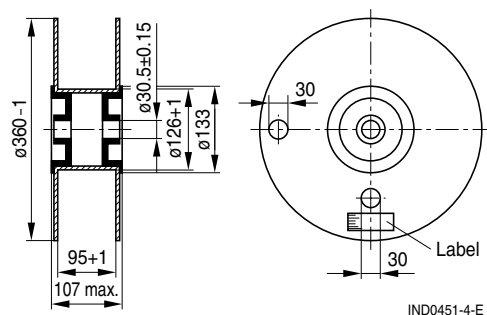
Dimensions in mm

# Reel packing

B82111E\*C020, C029



B82111E\*C021 ... 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	±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 ±20%, typical values
Resonance frequency $f_{\text{res}}$	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

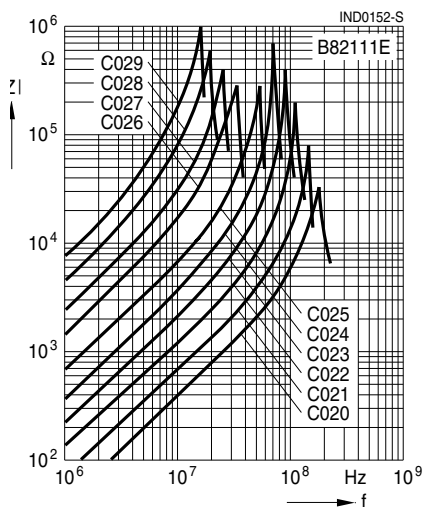
## Mounting information

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.

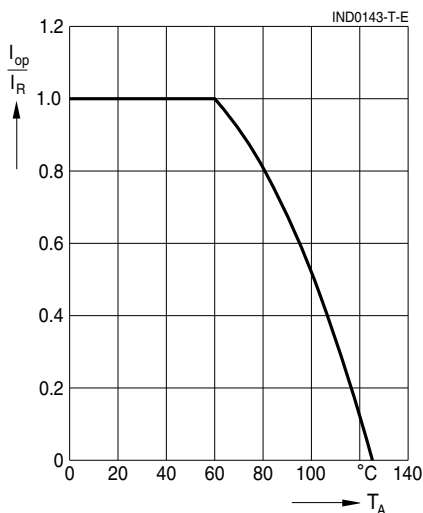
**Characteristics and ordering codes**

$I_R$	$L_R$	$R_{typ}$	$f_{res}$	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.

Washing processes may damage the product due to the possible static or cyclic mechanical loads (e.g. ultrasonic cleaning). They may cause cracks to develop on the product and its parts, which might lead to reduced reliability or lifetime.
- 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 we are 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 a product with the properties described in the product specification is suitable for use in a particular customer application.
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