



## **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  $\mu$ H to 25  $\mu$ 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

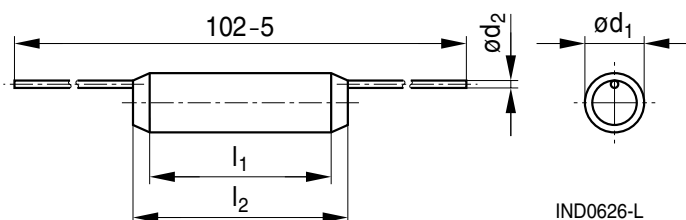
### Marking

$L_R$  and  $I_R$  in clear text and approval mark

### Delivery mode

Bulk


### Dimensional drawing



Dimensions in mm


**Technical data and measuring conditions**

Test voltage $V_{\text{test}}$	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 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
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.

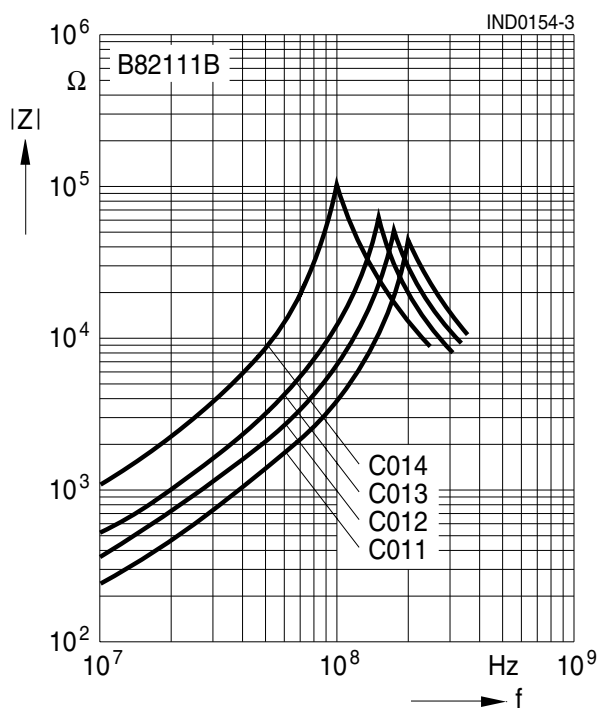
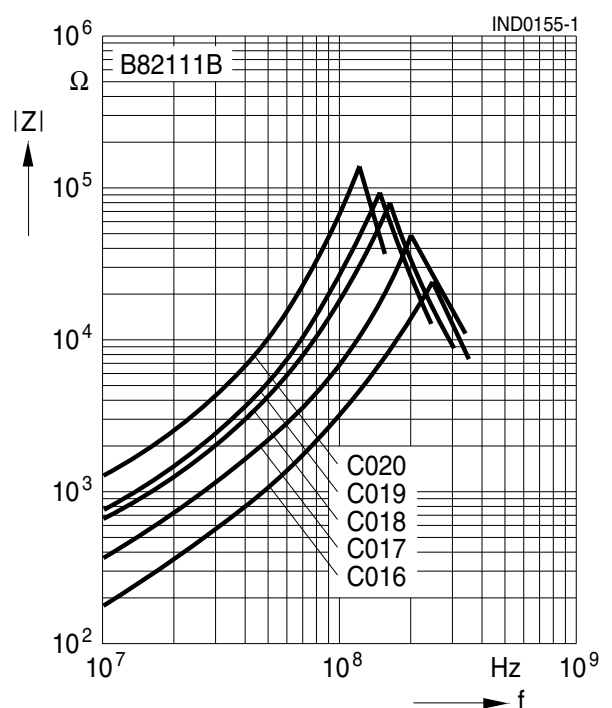
**Characteristics and ordering codes**

$I_R$	$L_R$ $\mu\text{H}$	$R_{\text{typ}}$ $\Omega$	$f_{\text{res}}$ 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

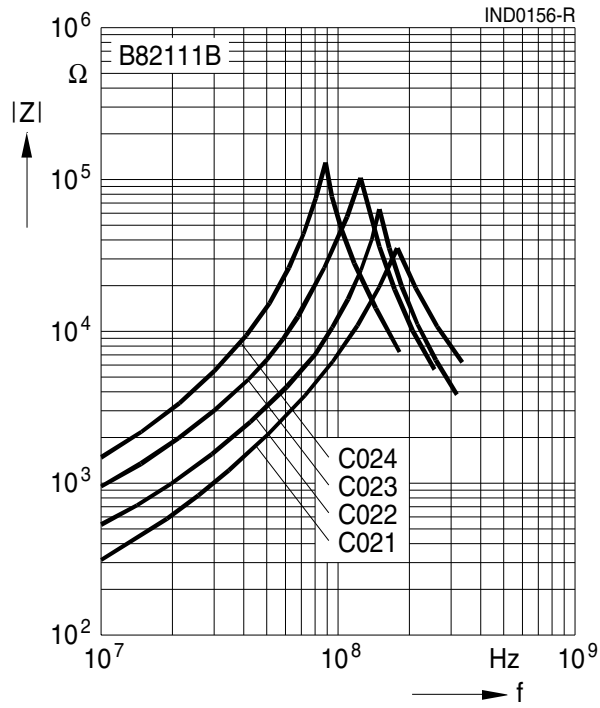
**Impedance  $|Z|$  versus frequency  $f$** 

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

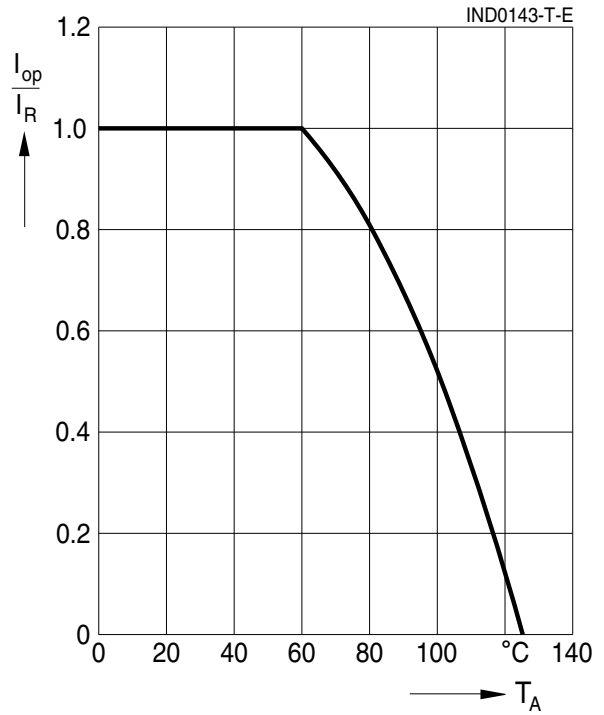
**B82111B0000C011...C014**

**B82111B0000C016...C020**


**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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