Inductors

VHF chokes

Series/Type: **B82111B**

Date: June 2012

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Rated voltage 500 V AC/DC
Rated current 2 ... 10 A
Rated inductance 3 ... 25 µH



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

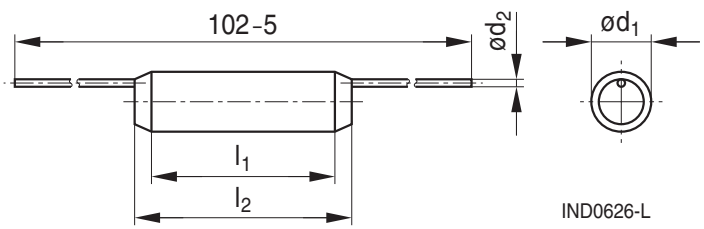
Marking

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: $L_R \leq 10\ \mu H$ = 1 MHz $10\ \mu H < L_R \leq 1000\ \mu H$ = 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_{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

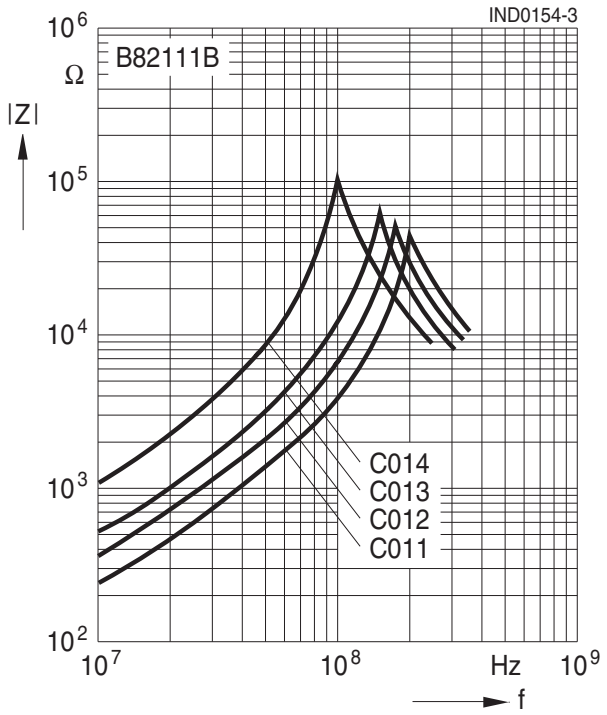
I_R	L_R	R_{typ}	f_{res}	Dimensions (mm)				Approx. weight	Ordering code	Approvals
	µH	Ω	MHz	$l_{1-1.5}$	l_{2-3}	$d_{1\ max.}$	d_2	g		
2	17	0.063	100	18.3	24	7.0	0.45	3.0	B82111B0000C014	×
3	8	0.025	145	18.3	24	7.0	0.63	3.0	B82111B0000C013	×
3	13	0.024	170	24.5	29	6.5	0.67	3.5	B82111B0000C019	×
3	20	0.054	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

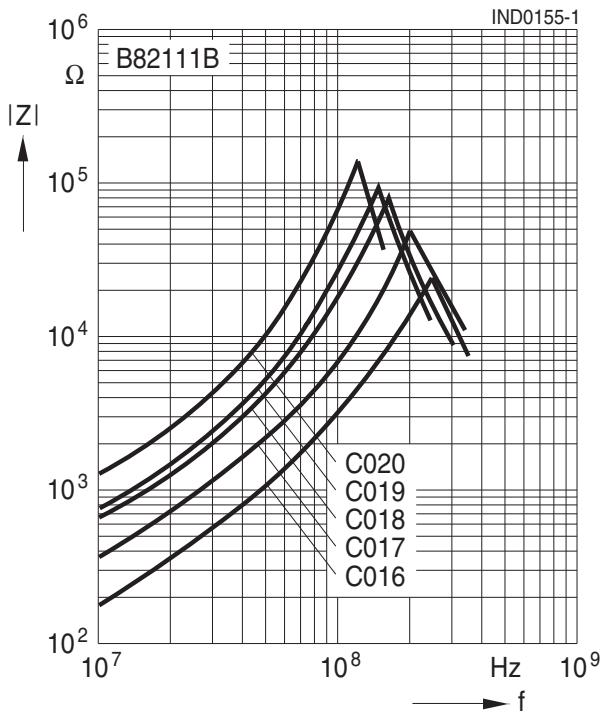
Impedance |Z| versus frequency f

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

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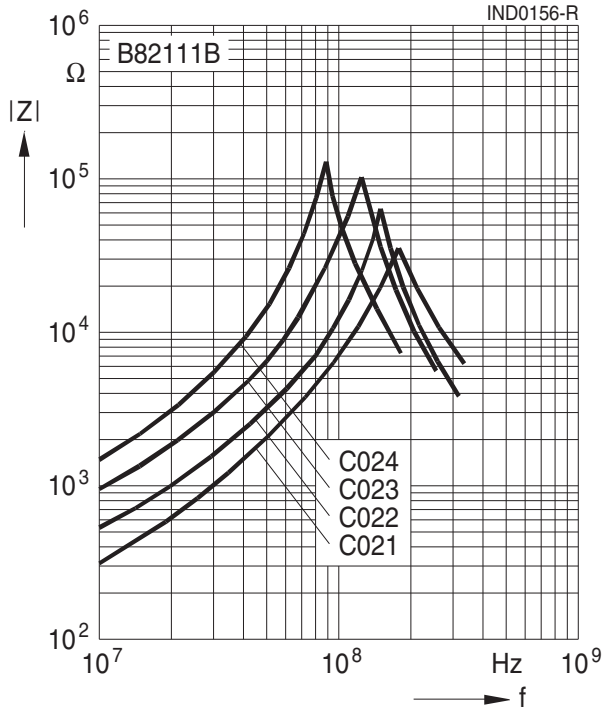


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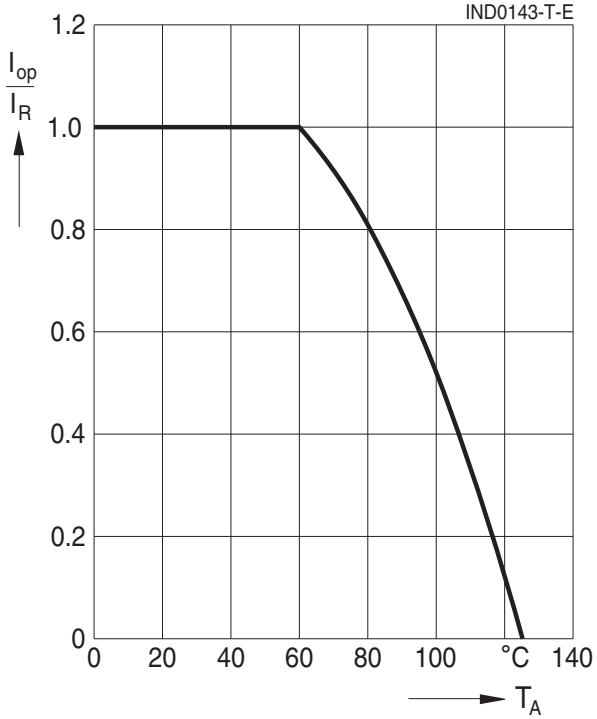
Impedance |Z| versus frequency f
measured with impedance analyzer Agilent 4294A or S-parameter network analyzer Agilent 8753ES, typical values at +20 °C

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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.

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