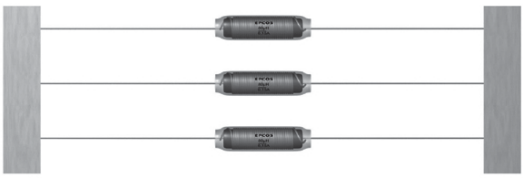
Inductors

VHF chokes

Series/Type: **B82131, B82132, B82133, B82134**

Date: June 2012

Rated voltage 500 V AC/DC
Rated current 0.15 ... 6 A
Rated inductance 1 ... 420 µH



Construction

- Cylinder core of carbonyl iron
- Winding: single-layer, enamel copper wire
- Polyester insulating sleeve

Features

- High resonant frequency
- 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

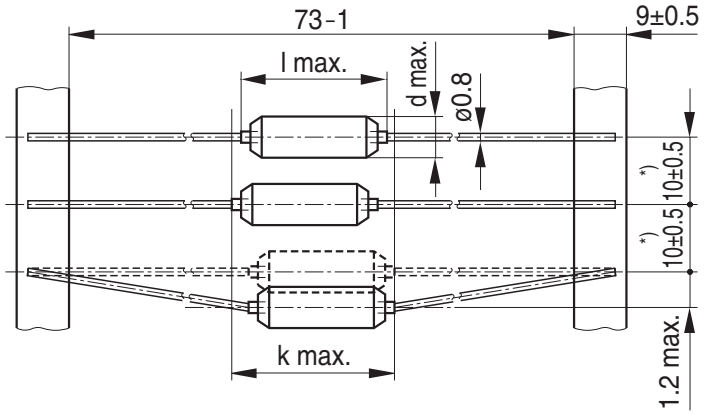
L_R and I_R in clear text

Delivery mode and packing units

- Taped and reeled
- Packing units:

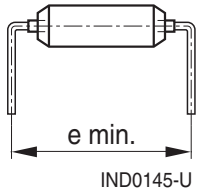
Series	Pcs./reel
B82131, B82132	2000
B82133, B82134	1000

Dimensional drawing



*) Tolerance over 10 spacings ±2 mm

IND0144-Z-E

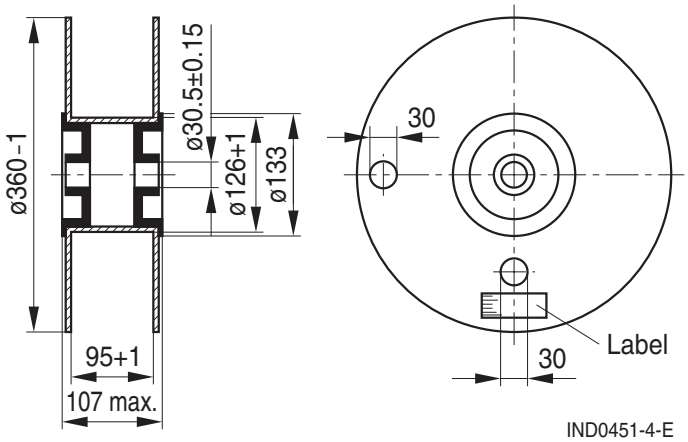


IND0145-U

Lead spacing e_{min} (mm)	Type
17.5	B82131
22.5	B82132
27.5	B82133
32.5	B82134

Dimensions in mm

Reel packing



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: $L_R \leq 10\ \mu H$ = 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

⚠ 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.

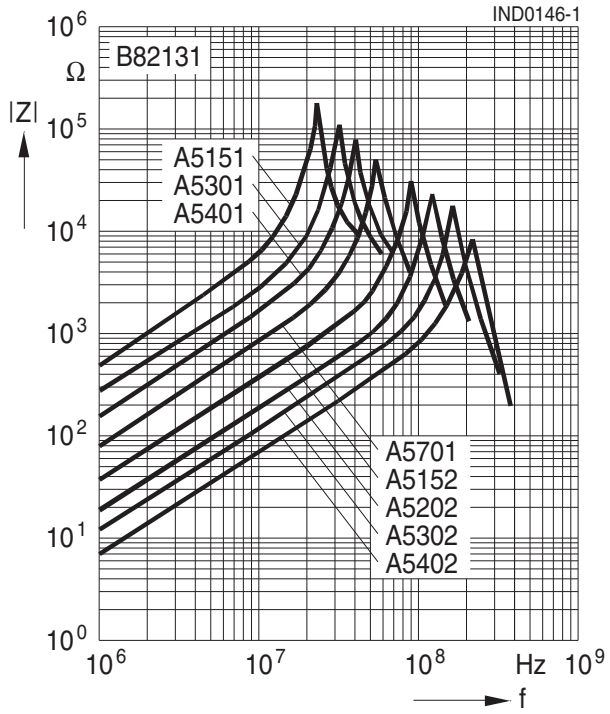
Characteristics and ordering codes

I_R	L_R	R_{typ}	f_{res}	Dimensions (mm)				Approx. weight	Ordering code
A	µH	Ω	MHz	d_{max}	l_{max}	k_{max}	e_{min}	g	
0.15	80	11	22	5	15	16.4	17.5	0.8	B82131A5151M000
	160	17	20	5.5	20	21.4	22.5	0.9	B82132A5151M000
	350	21	11	7.5	25	26.4	27.5	2.3	B82133A5151M000
	420	19	12	7.5	30	31.4	32.5	2.6	B82134A5151M000
0.3	40	4.1	31	5	15	16.4	17.5	0.8	B82131A5301M000
	70	5.7	29	5.5	20	21.4	22.5	0.9	B82132A5301M000
	160	6.5	16	7.5	25	26.4	27.5	2.2	B82133A5301M000
	210	6.4	18	7.5	30	31.4	32.5	2.8	B82134A5301M000
0.4	27	2.0	40	5	15	16.4	17.5	0.8	B82131A5401M000
	50	3.0	37	5.5	20	21.4	22.5	1.0	B82132A5401M000
	130	4.8	18	7.5	25	26.4	27.5	2.8	B82133A5401M000
	150	3.5	18	7.5	30	31.4	32.5	2.8	B82134A5401M000
0.7	14	0.76	53	5	15	16.4	17.5	0.8	B82131A5701M000
	23	0.73	55	5.5	20	21.4	22.5	1.0	B82132A5701M000
	55	1.20	26	7.5	25	26.4	27.5	2.4	B82133A5701M000
	60	0.77	34	7.5	30	31.4	32.5	3.0	B82134A5701M000
1.5	6	0.19	84	5	15	16.4	17.5	0.8	B82131A5152M000
	8	0.16	90	5.5	20	21.4	22.5	1.1	B82132A5152M000
	25	0.32	40	7.5	25	26.4	27.5	2.5	B82133A5152M000
	30	0.30	44	7.5	30	31.4	32.5	3.2	B82134A5152M000
2	3	0.09	113	5	15	16.4	17.5	0.8	B82131A5202M000
	6	0.11	108	5.5	20	21.4	22.5	1.1	B82132A5202M000
	14	0.13	57	7.5	25	26.4	27.5	2.8	B82133A5202M000
	20	0.15	59	7.5	30	31.4	32.5	3.3	B82134A5202M000
3	2	0.038	147	5	15	16.4	17.5	1.0	B82131A5302M000
	3	0.035	151	5.5	20	21.4	22.5	1.2	B82132A5302M000
	10	0.077	69	7.5	25	26.4	27.5	2.9	B82133A5302M000
	12	0.090	75	7.5	30	31.4	32.5	3.5	B82134A5302M000
4	1	0.014	199	5	15	16.4	17.5	1.1	B82131A5402M000
	2	0.020	186	5.5	20	21.4	22.5	1.4	B82132A5402M000
	5	0.034	87	7.5	25	26.4	27.5	3.0	B82133A5402M000

Impedance |Z| versus frequency f

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

B82131A5***M000



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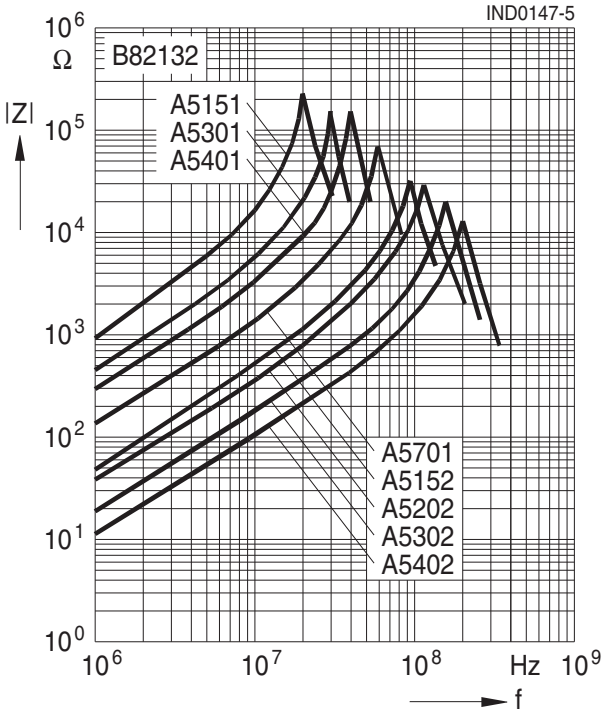

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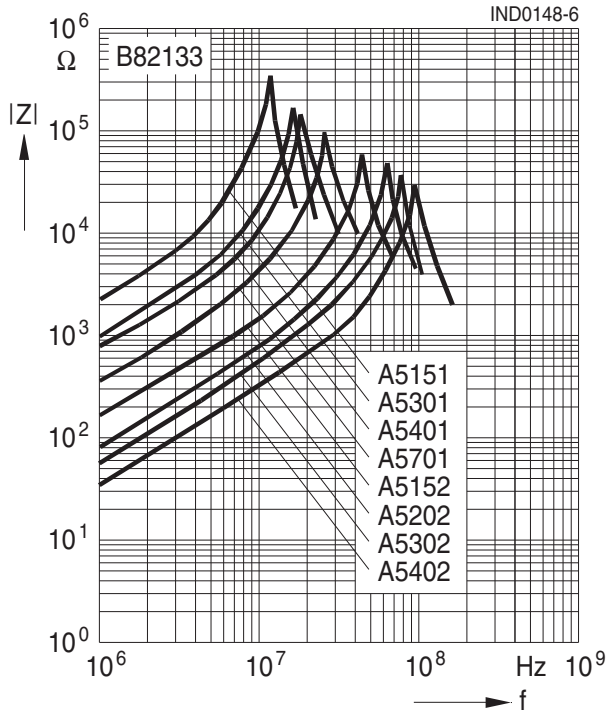
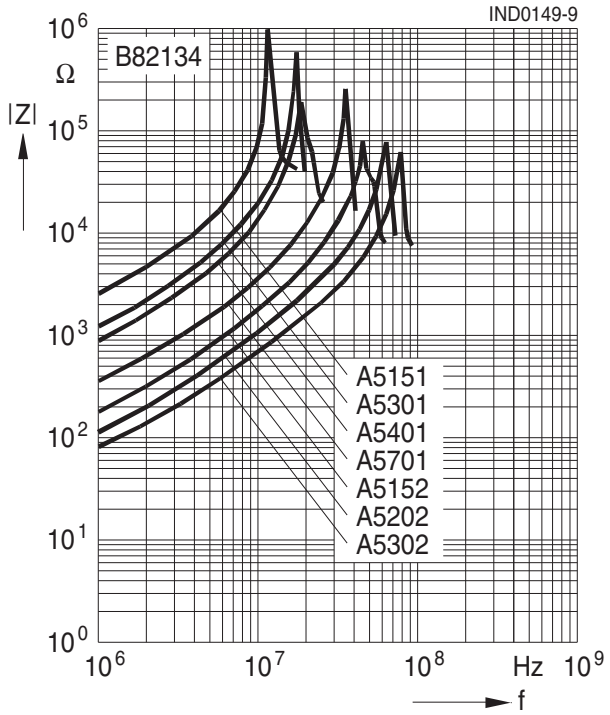
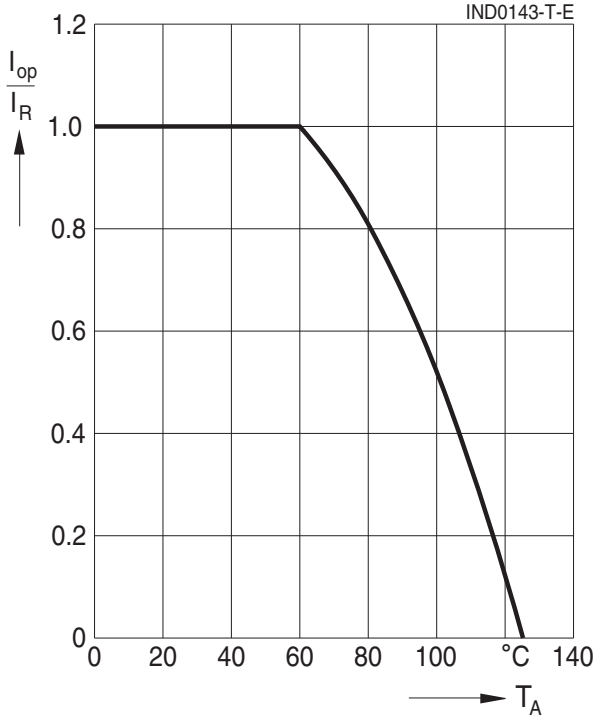


B82134A5***M000



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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