



SMT power inductors

Size $6.1 \times 5.5 \times 4.9$ (mm)

Series/Type: **B82471B1**

Date: **March 2008**

SMD

Rated inductance 10 μH to 220 μH

Rated current 0.35 A to 1.44 A



Construction

- Ferrite core with metallization on the bottom side
- Winding: enamel copper wire
- Winding soldered to terminals

Features

- Temperature range up to 150 °C
- High rated current
- Low DC resistance
- Suitable for lead-free reflow soldering as referenced in JEDEC J-STD 020C
- Qualified to AEC-Q200
- RoHS-compatible

Applications

- Filtering of supply voltages
- Coupling, decoupling
- DC/DC converters
- Automotive electronics
- Industrial electronics
- Consumer electronics

Terminals

- Base material Silver plated core
- Layer composition B1Sn (lead-free)
- Hot-dipped

Marking

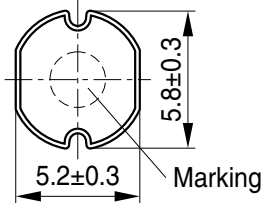
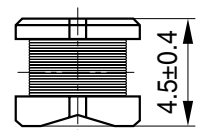
- Marking on component:
L value (μH, coded),
manufacturing date (YWWDD)
- Minimum data on reel:
Manufacturer, ordering code, L value,
quantity, date of packing

Delivery mode and packing unit

- 12-mm blister tape, wound on 330-mm Ø reel
- Packing unit: 1500 pcs./reel

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Dimensional drawing and layout recommendation

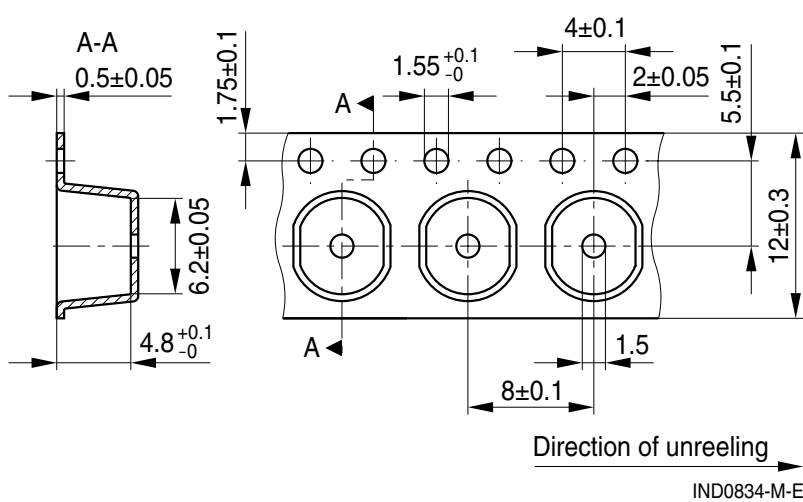


Dimensions in mm

1) Soldering area
IND0842-K-E

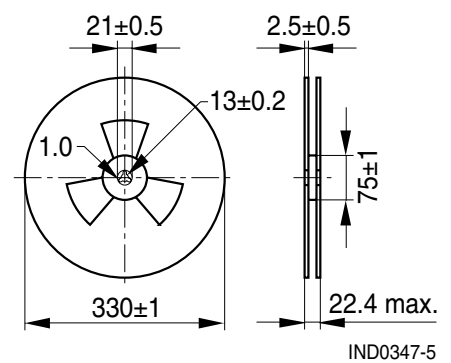
Taping and packing

Blister tape



Dimensions in mm

Reel



Technical data and measuring conditions

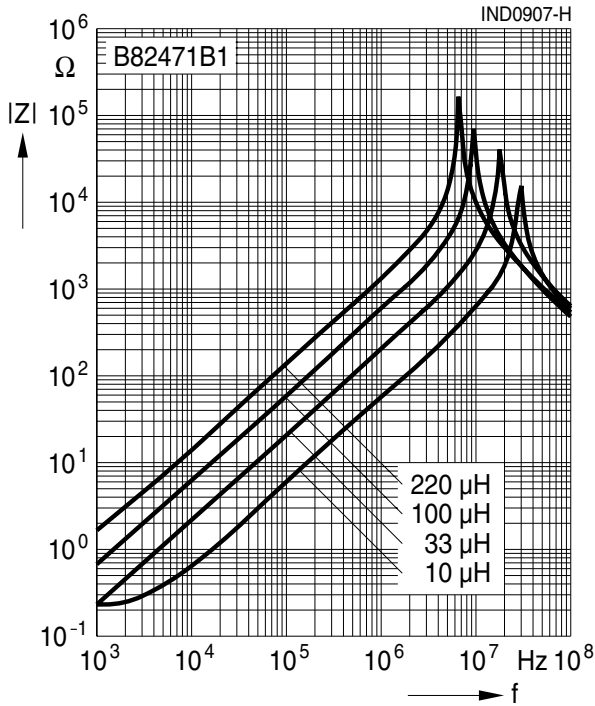
Rated inductance L_R	Measured with LCR meter Agilent 4284A at frequency L_R , 0.1 V, 20 °C
Rated temperature T_R	85 °C
Rated current I_R	Max. permissible DC with temperature increase of ≤ 40 K at rated temperature
Saturation current I_{sat}	Max. permissible DC with inductance decrease $\Delta L/L_0$ of approx. 10%
DC resistance R_{max}	Measured at 20 °C
Solderability (lead-free)	Dip and look method Sn95.5Ag3.8Cu0.7: (245 \pm 5) °C, (5 \pm 0.3) s Wetting of soldering area $\geq 90\%$ (based on IEC 60068-2-58)
Resistance to soldering heat	260 °C, 40 s as referenced in JEDEC J-STD 020C
Climatic category	55/150/56 (to IEC 60068-1)
Storage conditions	Mounted: -55 °C ... +150 °C Packaged: -25 °C ... +40 °C, $\leq 75\%$ RH
Weight	Approx. 1 g

Characteristics and ordering codes

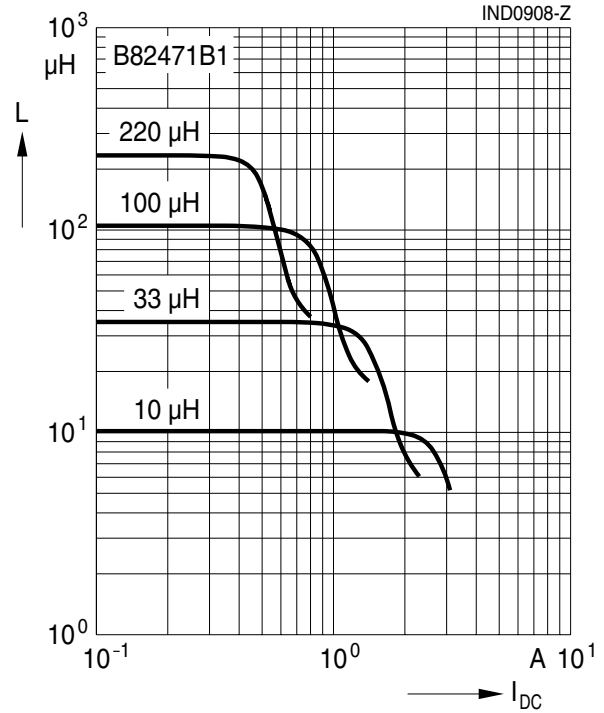
L_R μH	Tolerance	f_L MHz	I_R A	I_{sat} A	R_{max} Ω	Ordering code
10	$\pm 10\% \triangleq K$	0.1	1.44	1.80	0.10	B82471B1103K000
15		0.1	1.30	1.45	0.14	B82471B1153K000
22		0.1	1.11	1.20	0.18	B82471B1223K000
33		0.1	0.88	1.00	0.23	B82471B1333K000
47		0.1	0.72	0.85	0.37	B82471B1473K000
68		0.1	0.61	0.70	0.46	B82471B1683K000
100		0.1	0.52	0.60	0.70	B82471B1104K000
150		0.1	0.40	0.48	1.10	B82471B1154K000
220		0.1	0.35	0.38	1.57	B82471B1224K000

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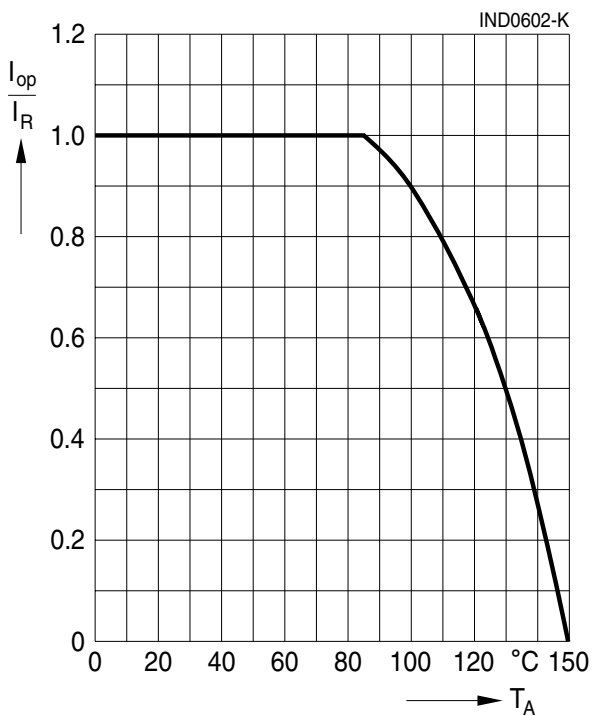
Impedance |Z| versus frequency f
measured with impedance analyzer
Agilent 4294A, typical values at 20 °C



Inductance L versus DC load current I_{DC}
measured with LCR meter Agilent 4284A,
typical values at 20 °C



Current derating I_{op}/I_R
versus ambient temperature T_A
(rated temperature T_R = 85 °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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The following applies to all products named in this publication:

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