



SMT power inductors

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

Series/Type: B82471B1

Date: March 2008

SMD

Rated inductance 10 μ H to 220 μ H

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

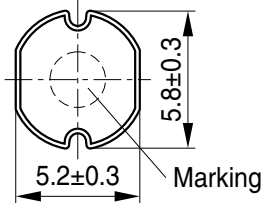
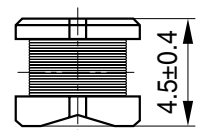
- Marking on component:
L value (μ H, coded),
manufacturing date (YWWDD)
- Minimum data on reel:
Manufacturer, ordering code, L value,
quantity, date of packing

Delivery mode and packing unit

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

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Dimensional drawing and layout recommendation



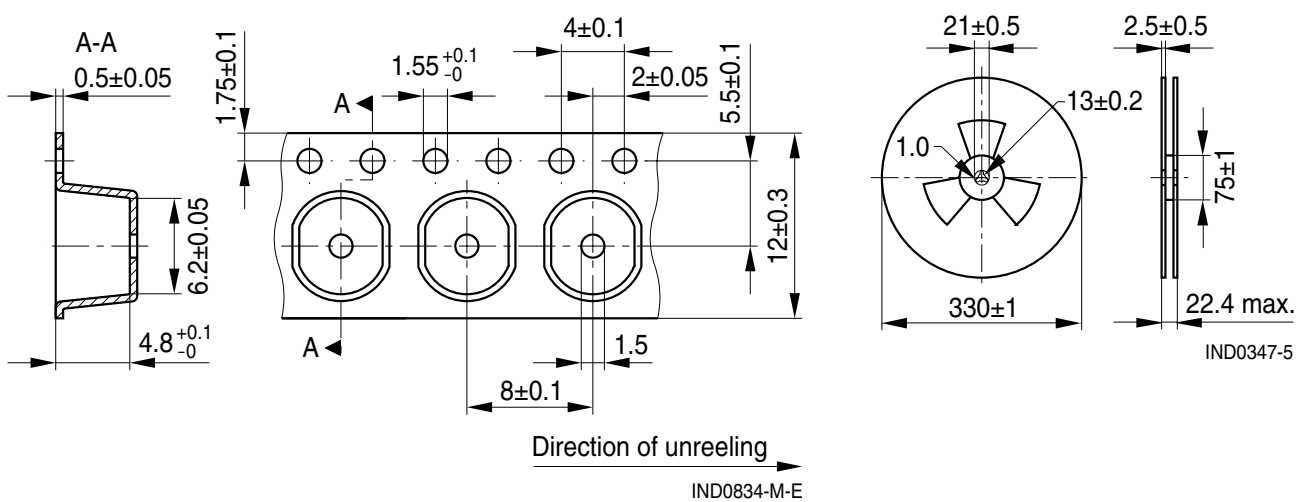
Dimensions in mm

1) Soldering area
IND0842-K-E

Taping and packing

Blister tape

Reel



Dimensions in mm

Technical data and measuring conditions

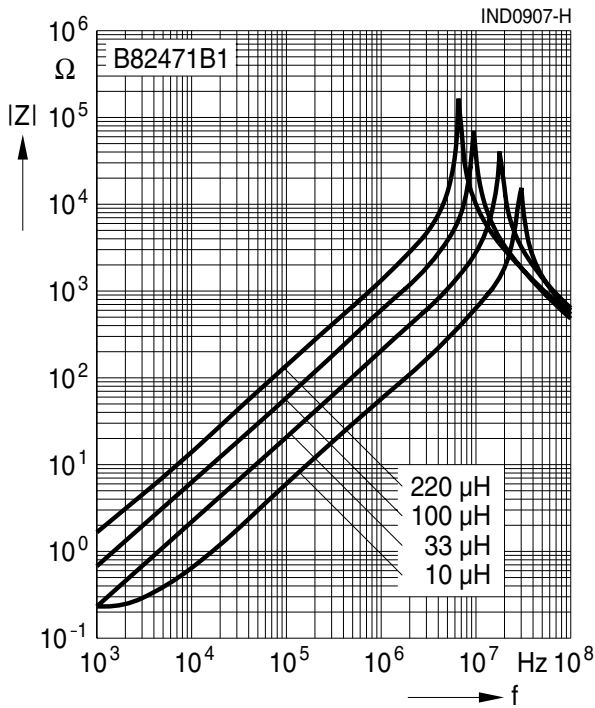
| | |
|------------------------------|--|
| Rated inductance L_R | Measured with LCR meter Agilent 4284A at frequency L_R , 0.1 V, 20 °C |
| Rated temperature T_R | 85 °C |
| Rated current I_R | Max. permissible DC with temperature increase of ≤ 40 K at rated temperature |
| Saturation current I_{sat} | 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

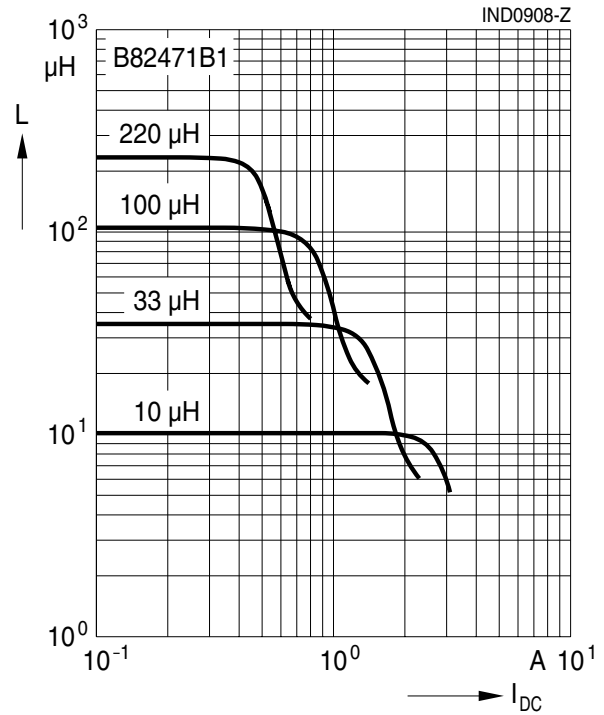
| L_R μH | Tolerance | f_L MHz | I_R A | I_{sat} A | R_{max} Ω | Ordering code |
|------------------------|-------------------------|--------------|------------|----------------|-----------------------|-----------------|
| 10 | $\pm 10\% \triangleq K$ | 0.1 | 1.44 | 1.80 | 0.10 | B82471B1103K000 |
| 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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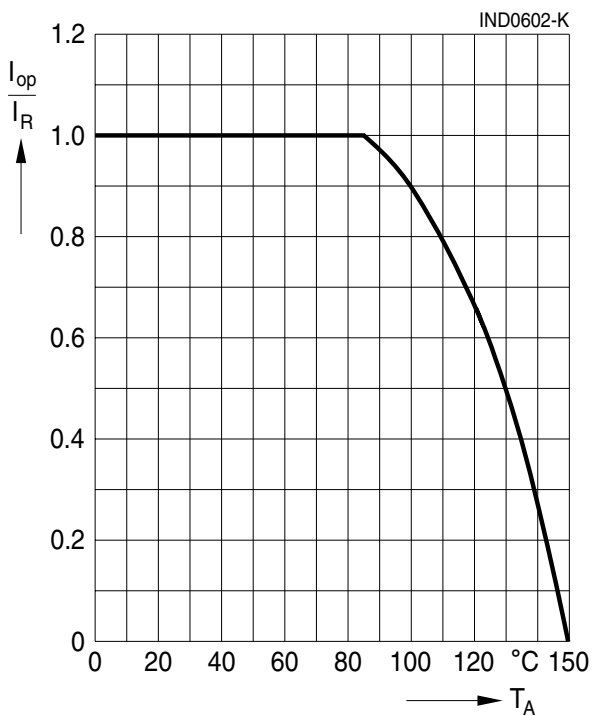
Impedance |Z| versus frequency f
measured with impedance analyzer
Agilent 4294A, typical values at 20 °C



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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