



SMT power inductors

Size $6.1 \times 5.6 \times 4.9$ (mm)

Series/Type: **B82471A1**
Date: March 2008

SMT power inductors

B82471A1

Size 6.1 × 5.6 × 4.9 (mm)

SMD

Rated inductance 10 µH to 220 µH

Rated current 0.35 A to 1.44 A

Construction

- Ferrite core
- Winding: enamel copper wire
- Winding soldered to terminals
- Plastic terminal carrier



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
- Qualification based on AEC-Q200
- RoHS-compatible

Applications

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

Terminals

- Base material CuSn6P
- Layer composition Ni-Sn (lead-free)
- Electro-plated

Marking

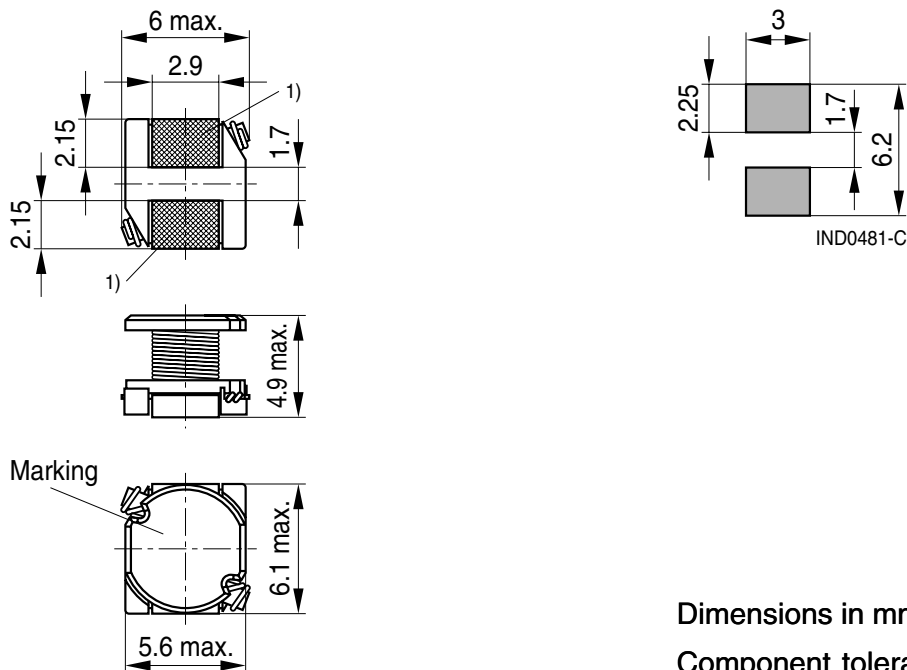
- Marking on component:
L value (µH, coded),
manufacturing date (YWWD)
- Minimum data on reel:
Manufacturer, ordering code,
L value, quantity, date of packing

Delivery mode and packing unit

- 16-mm blister tape, wound on 330-mm Ø reel
- Packing unit: 1000 pcs./reel

SMD

Dimensional drawing and layout recommendation



Dimensions in mm

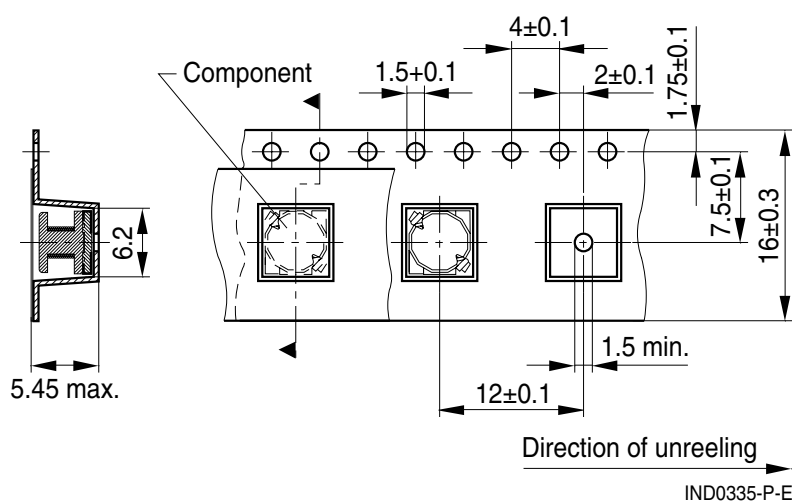
Component tolerances ± 0.2 mm unless otherwise noted.

1) Soldering area

IND0480-Z-E

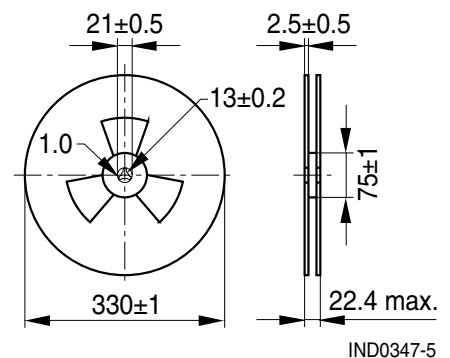
Taping and packing

Blister tape



IND0335-P-E

Reel



IND0347-5

Dimensions in mm

Technical data and measuring conditions

Rated inductance L_R	Measured with LCR meter Agilent 4284A at frequency f_L , 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 ± 5) °C, (5 ± 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

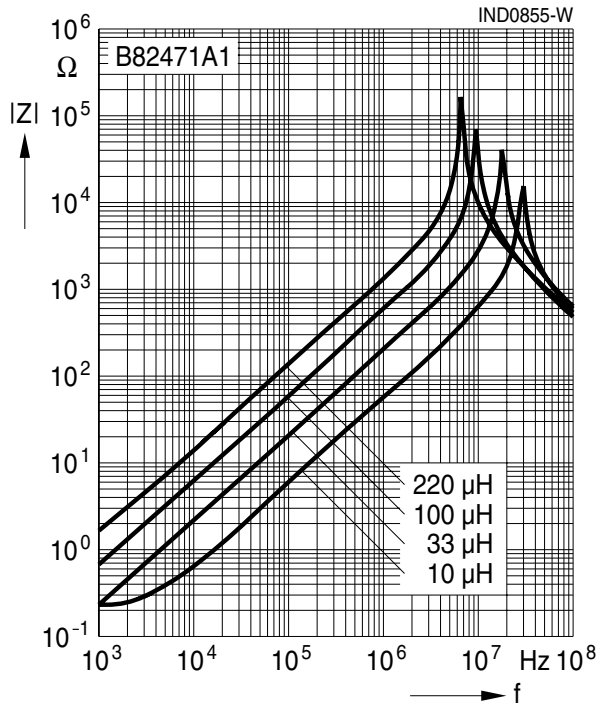
Characteristics and ordering codes

L_R μH	Tolerance	f_L MHz	I_R A	I_{sat} A	R_{max} Ω	Ordering code
10	$\pm 20\% \triangleq M$	0.1	1.44	1.80	0.10	B82471A1103M000
15		0.1	1.30	1.45	0.14	B82471A1153M000
22		0.1	1.11	1.20	0.18	B82471A1223M000
33		0.1	0.88	1.00	0.23	B82471A1333M000
47		0.1	0.72	0.85	0.37	B82471A1473M000
68	$\pm 10\% \triangleq K$	0.1	0.61	0.70	0.46	B82471A1683K000
100		0.1	0.52	0.60	0.70	B82471A1104K000
150		0.1	0.40	0.48	1.10	B82471A1154K000
220		0.1	0.35	0.38	1.57	B82471A1224K000

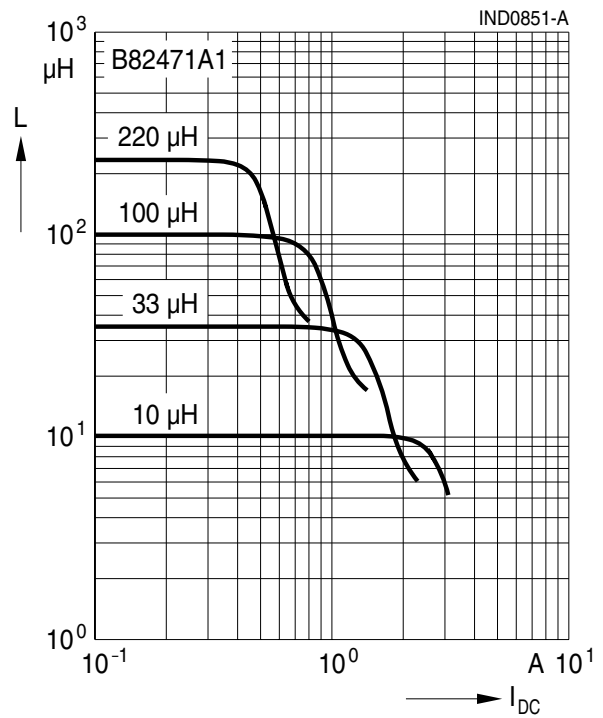
Sample kit available. Ordering code: B8247XX001
For more information refer to chapter "Sample kits".

SMD

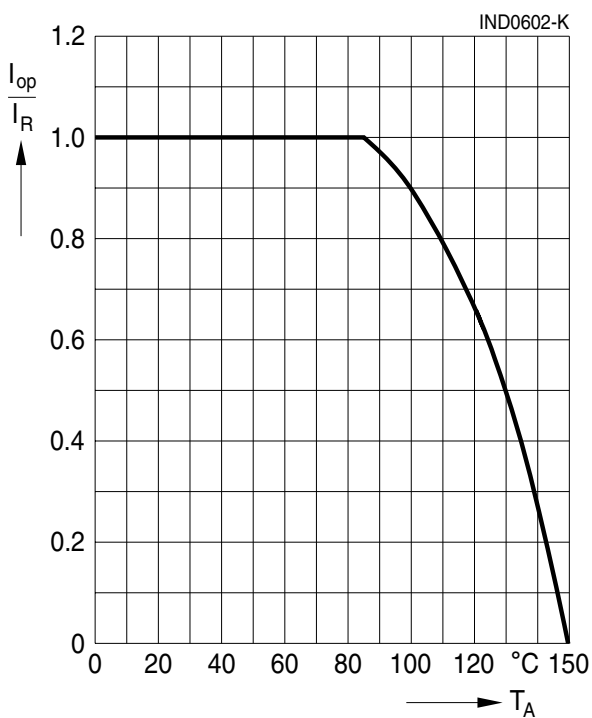
Impedance $|Z|$ versus frequency f
measured with impedance analyzer
Agilent 4294A, typical values at 20 °C



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



Current derating $I_{\text{op}}/I_{\text{R}}$
versus ambient temperature T_{A}
(rated temperature $T_{\text{R}} = 85$ °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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