



SMT power inductors

Size 12.5 × 12.5 × 8.5 (mm)

Series/Type: **B82477D4**

Date: October 2008

SMD

Rated inductance 10 μ H to 100 μ H

Rated current 0.96 A to 2.7 A



Construction

- Ferrite core
- Magnetically shielded
- Winding: enamel copper wire
- Special winding technology for low stray inductance
- Winding soldered to terminals

Features

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

Applications

- Common mode choke
- DC/DC converters
- 1:1 transformer

Terminals

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

Marking

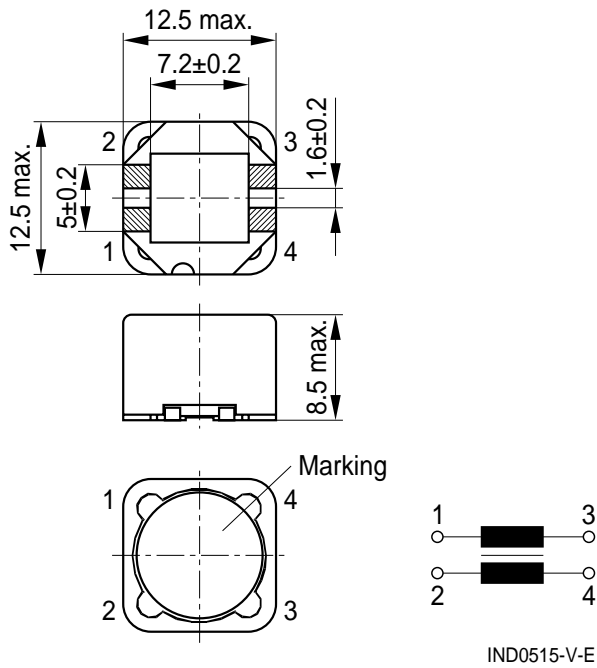
- Marking on component:
Manufacturer, L value (μ H, coded),
manufacturing date (YWWD)
- Minimum data on reel:
Manufacturer, ordering code, L value,
quantity, date of packing

Delivery mode and packing unit

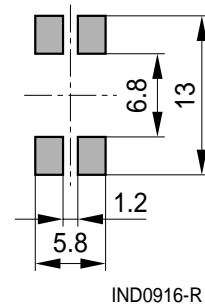
- 24-mm blister tape, wound on 330-mm \varnothing reel
- Packing unit: 350 pcs./reel

SMD

Dimensional drawing and pin configuration



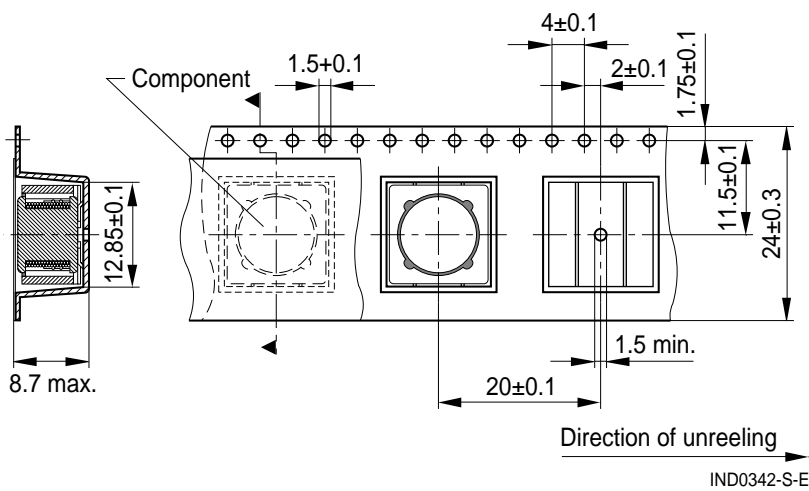
Layout recommendation



Dimensions in mm

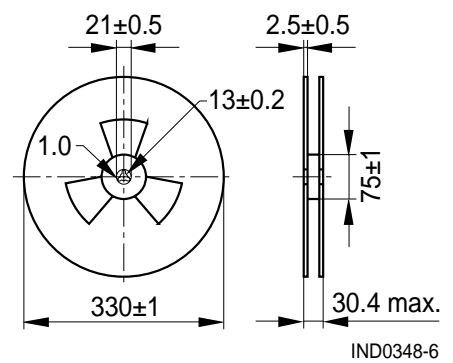
Taping and packing

Blister tape



Dimensions in mm

Reel



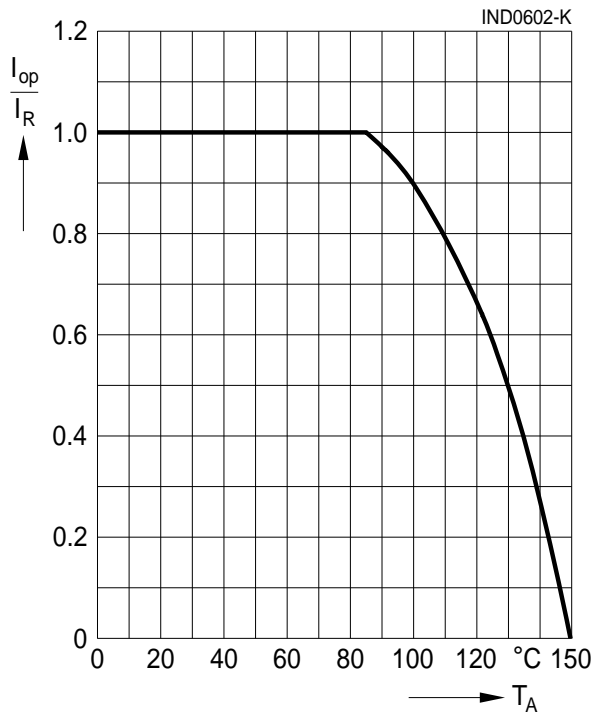
Technical data and measuring conditions

Rated inductance L_R	Measured with LCR meter Agilent 4284A at frequency 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 or inductance decrease $\Delta L/L_0 \leq 10\%$ (per winding)
Stray inductance $L_{\text{stray,typ}}$	Measured with Agilent 4284A at 100 kHz, 0.1 V, 20 °C, typical values
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. 4 g

Characteristics and ordering codes

L_{R1}, L_{R2} μH	Tolerance	$L_{\text{stray,typ}}$ μH	f_L MHz	I_{R1}, I_{R2} A	$R_{1\text{max}}, R_{2\text{max}}$ Ω	Ordering code
10	$\pm 20\% \triangleq M$	0.20	0.1	2.70	0.043	B82477D4103M000
15		0.25	0.1	2.30	0.060	B82477D4153M000
22		0.30	0.1	2.05	0.080	B82477D4223M000
33		0.50	0.1	1.65	0.130	B82477D4333M000
100		0.60	0.1	0.96	0.280	B82477D4104M000

**Current derating I_{op}/I_R
versus ambient temperature T_A**
(rated temperature $T_R = 85\text{ °C}$)



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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