



SMT power inductors

Size 12.5 × 12.5 × 8.5 (mm)

Series/Type: B82477D4

Date: June 2012

SMD

Rated inductance 10 ... 100 μ H

Rated current 0.96 ... 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 020D
- 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

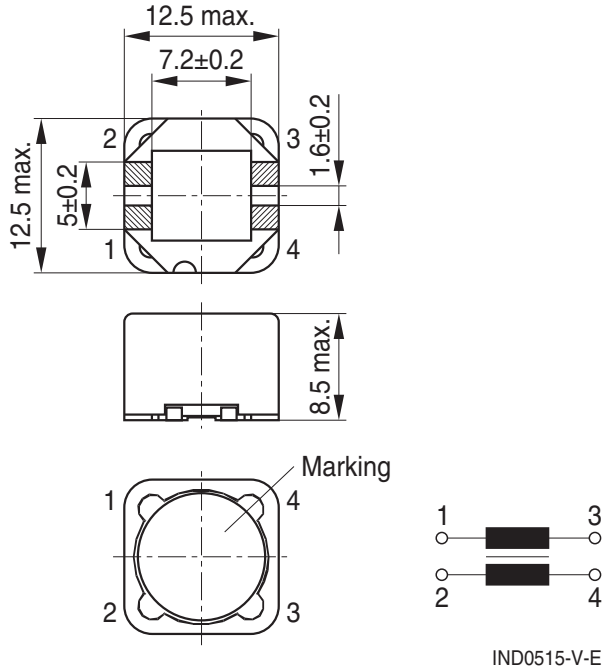
- Marking on component:
Manufacturer, L value (μ H, coded),
manufacturing date (YWWD)
- Minimum data on reel:
Manufacturer, ordering code, L value,
quantity, date of packing

Delivery mode and packing unit

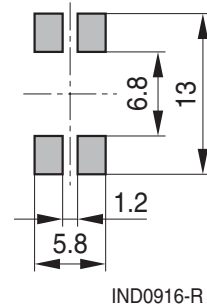
- 24-mm blister tape, wound on 330-mm \varnothing reel
- Packing unit: 350 pcs./reel

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Dimensional drawing and pin configuration



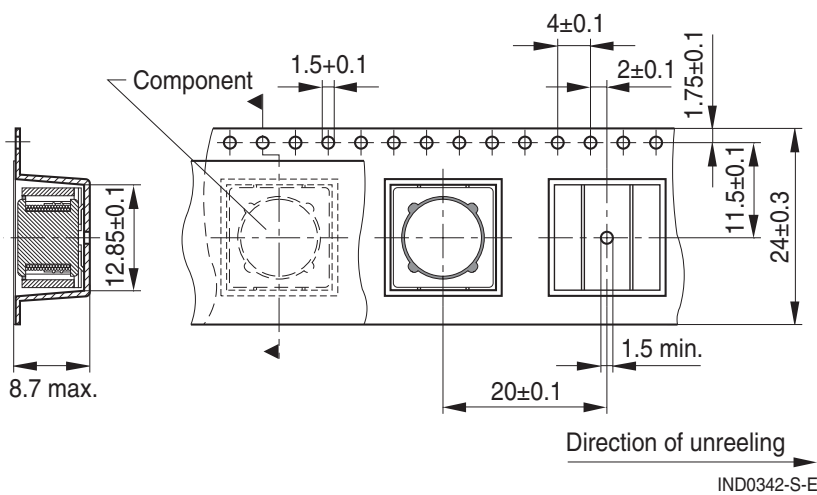
Layout recommendation



Dimensions in mm

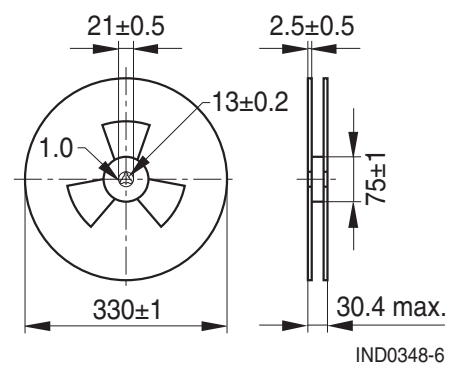
Taping and packing

Blister tape



Dimensions in mm

Reel



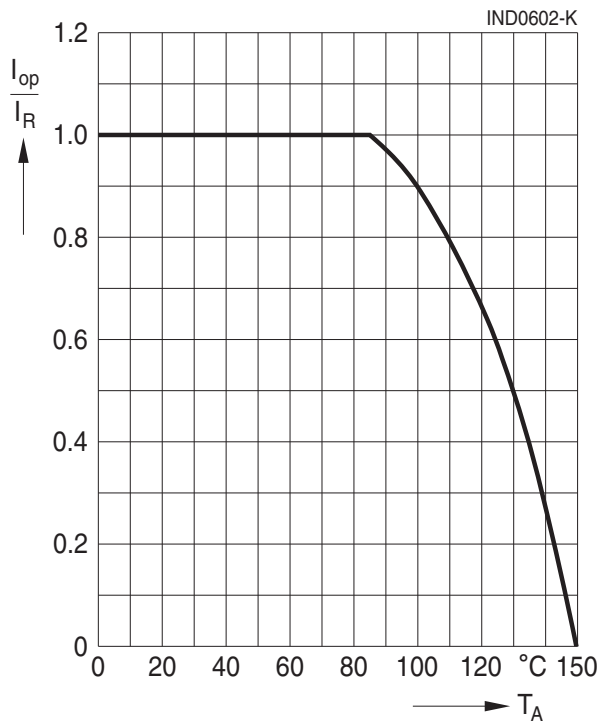
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Technical data and measuring conditions

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 \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 020D)
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. 4.2 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.
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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