SMT Power Inductors

Size 12.8 x 12.8 x 8.0 (mm)

Series/Type: **B82477G**
Ordering code: **B82477G4473M003**
Date: June 2012

EPCOS AG is a TDK Group Company.

Rated inductance 47 µH

Construction
- Ferrite core
- Magnetically shielded
- Winding: enamel copper wire
- Winding: soldered to terminals

Features
- High mechanical stability
- Temperature range up to +125 °C
- Increased current handling capability compared to standard device B82477G4473M000 (I_{sat} +30%)
- Low DC resistance
- Suitable for lead-free reflow soldering
- RoHS-compatible

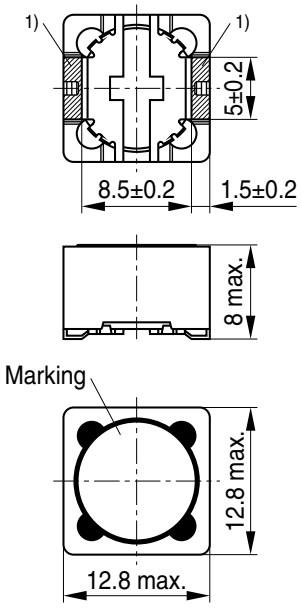
Applications
- Filtering of supply voltages
- Coupling, decoupling
- DC/DC converters

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

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

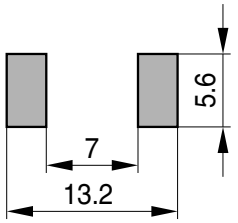
Delivery mode and packing unit
- 24-mm blister tape, wound on 330-mm reel
- Packing unit: 400 pcs./reel

Dimensional Drawing and layout recommendation



1) Soldering area

IND0492-V-E



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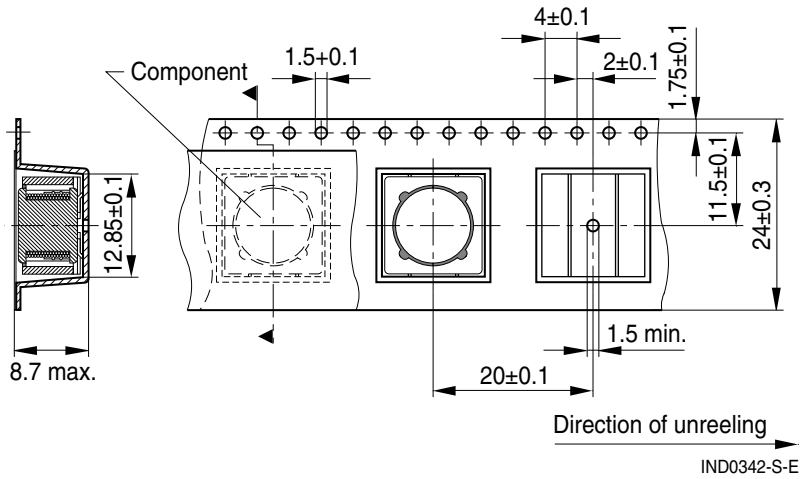
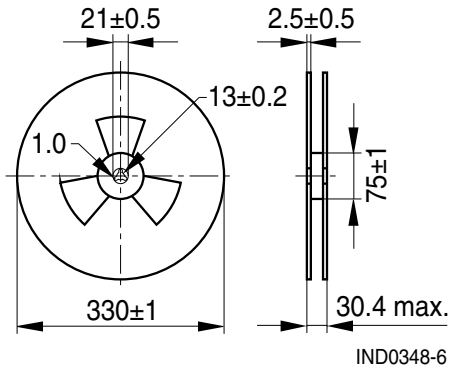
Dimensions in mm

Taping and packing

Blister tape and reel



IND0342-S-E



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Dimensions in mm

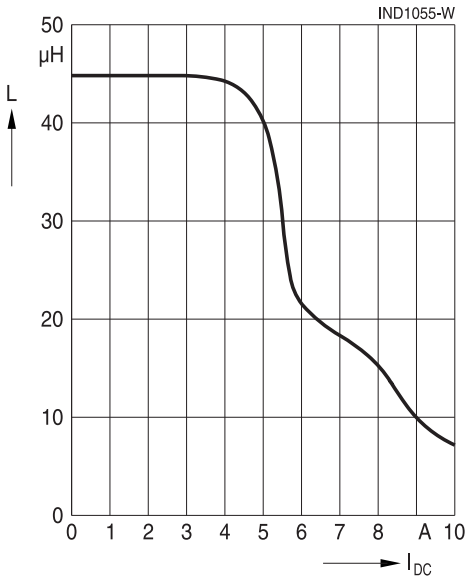
Technical data and measuring conditions

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}	Permissible DC with inductance decrease $\Delta L/L_0$ of approx. 10%
DC resistance R_{typ}	Measured at +20 °C
Solderability (lead-free)	Dip and look method Sn95.5Ag3.8Cu0.7: +(245 ±5) °C, (3 ±0.3) s Wetting of soldering area ≥ 90% (based on IEC 60068-2-58)
Resistance to soldering heat	+260 °C, 10 s
Climatic category	55/125/56 (to IEC 60068-1)
Storage conditions	Mounted: –55 °C … +125 °C Packaged: –25 °C … +40 °C, ≤ 75% RH
Weight	Approx. 4 g

Characteristics and ordering codes

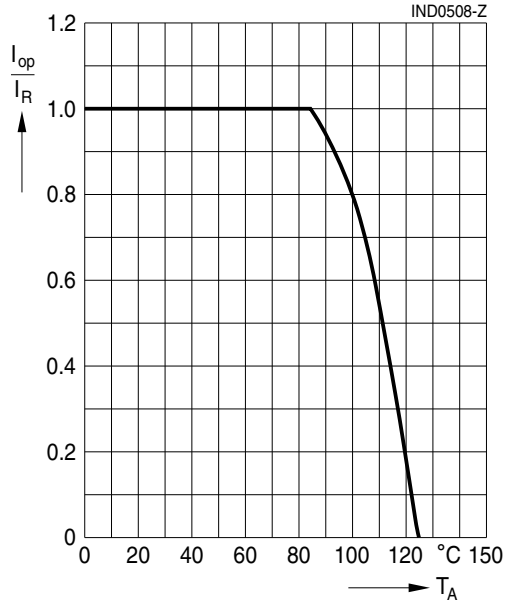
L_R µH	Tolerance	f_L MHz	I_R A	I_{sat} A	R_{typ} Ω	R_{max} Ω	Ordering code
47	20% = M	0.1	3.00	5.00	0.051	0.055	B82477G4473M003

Inductance derating versus DC superposition



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
  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.

Important notes

The following applies to all products named in this publication:

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