SMT power inductors

Size 12.3 × 12.3 × 6.0 (mm)

Series/Type: **B82477G2**

Date: March 2008

SMD

Rated inductance 1 µH to 1000 µH
Rated current 0.4 A to 9 A

Construction

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

Features

- Temperature range up to 125 °C
- High rated current
- Low DC resistance
- Suitable for lead-free reflow soldering
- Qualification based on AEC-Q200
- RoHS-compatible

Applications

- Filtering of supply voltages
- Coupling, decoupling
- DC/DC converters
- Industrial electronics
- EDP (Electronic Data Processing)
- Consumer electronics

Terminals

- Base material
  Cu (L ≤ 10 µH), CuSn6P (L ≥ 15 µH)
- Layer composition Ni, Sn (lead-free)
- Electro-plated

Marking

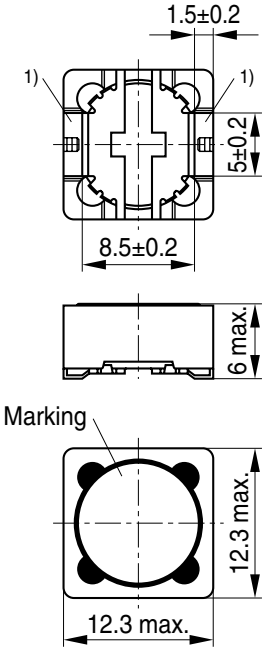
- Marking on component:
  Manufacturer, L value (µH, coded),
  manufacturing date (YWWD)
- Minimum data on reel:
  Manufacturer, ordering code, L value,
  quantity, date of packing

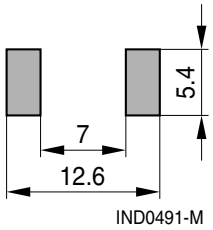
Delivery mode and packing unit

- 24-mm blister tape, wound on 330-mm ∅ reel.
- Packing unit: 600 pcs./reel

SMD

Dimensional drawing and layout recommendation





IND0491-M

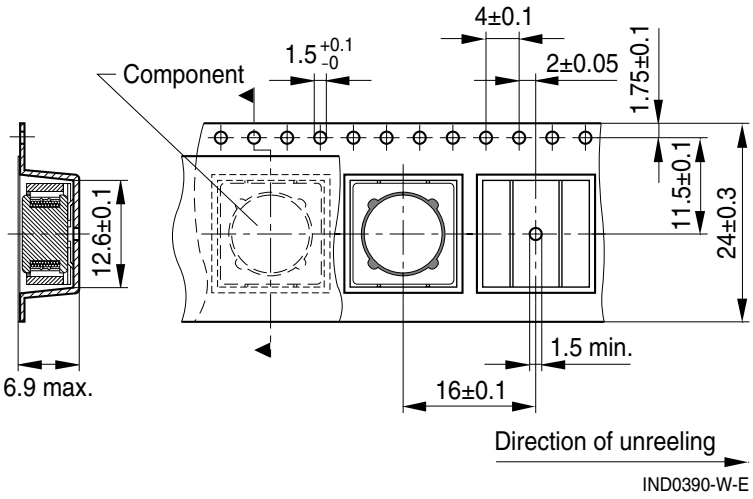
1) Soldering area

IND0490-H-E

Dimensions in mm

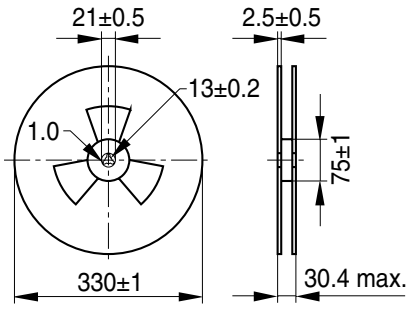
Taping and packing

Blister tape



IND0390-W-E

Reel



IND0348-6

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
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 ≥ 90% (based on IEC 60068-2-58)
Resistance to soldering heat	260 °C, 10 s (based on IEC 60068-2-58)
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	R_{max} Ω	Ordering code
1.0	±20% ≙ M	0.001	9.0	0.009	B82477G2102M000
1.3		0.001	8.7	0.010	B82477G2132M000
2.2		0.001	7.0	0.014	B82477G2222M000
3.3		0.001	6.0	0.017	B82477G2332M000
4.7		0.001	5.0	0.020	B82477G2472M000
6.8		0.001	4.4	0.022	B82477G2682M000
7.5		0.001	4.2	0.023	B82477G2752M000
10		0.001	4.0	0.025	B82477G2103M000
12		0.001	3.5	0.027	B82477G2123M000
15		0.001	3.3	0.030	B82477G2153M000
22		0.001	2.8	0.036	B82477G2223M000
33		0.001	2.1	0.057	B82477G2333M000
47		0.001	1.8	0.075	B82477G2473M000
68		0.001	1.5	0.120	B82477G2683M000
100		0.001	1.3	0.160	B82477G2104M000

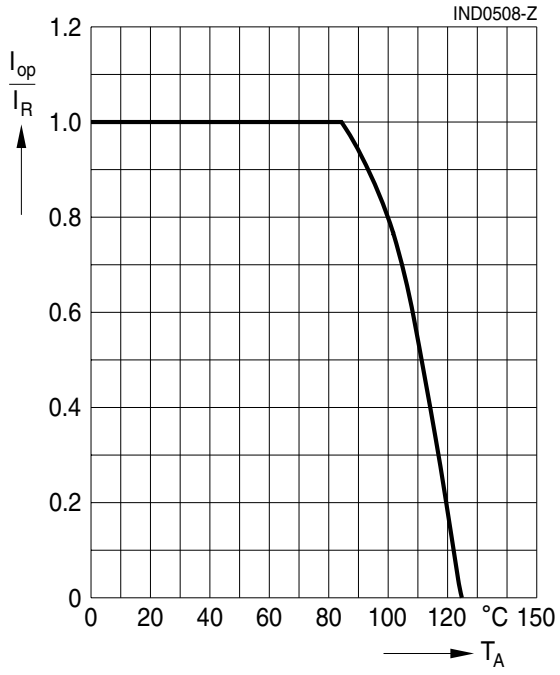
→

Characteristics and ordering codes

L_R µH	Tolerance	f_L MHz	I_R A	R_{max} Ω	Ordering code
150	±20% ≙ M	0.001	1.0	0.23	B82477G2154M000
220		0.001	0.80	0.40	B82477G2224M000
330		0.001	0.68	0.51	B82477G2334M000
470		0.001	0.58	0.77	B82477G2474M000
680		0.001	0.48	1.20	B82477G2684M000
1000		0.001	0.40	1.53	B82477G2105M000

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

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.

Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application.**

   As a rule, EPCOS is either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether an EPCOS product with the properties described in the product specification is suitable for use in a particular customer application.

2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified.** In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.

3. **The warnings, cautions and product-specific notes must be observed**.

4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as hazardous)**. Useful information on this will be found in our Material Data Sheets on the Internet (www.epcos.com/material). Should you have any more detailed questions, please contact our sales offices.

5. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order.

   We also **reserve the right to discontinue production and delivery of products**. Consequently, we cannot guarantee that all products named in this publication will always be available.

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