SMT power inductors

Size 12.8 × 12.8 × 8.0 (mm)

Series/Type: **B82477G4**

Date: June 2012

SMD

Rated inductance 1 ... 1000 µH
Rated current 0.55 ... 9.8 A

Construction

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

Features

- Temperature range up to +125 °C
- Very high rated current
- Low DC resistance
- Suitable for lead-free reflow soldering
- RoHS-compatible

Applications

- DC/DC converters
- EDP (Electronic Data Processing)
- Consumer electronics
- Industrial 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: 400 pcs./reel

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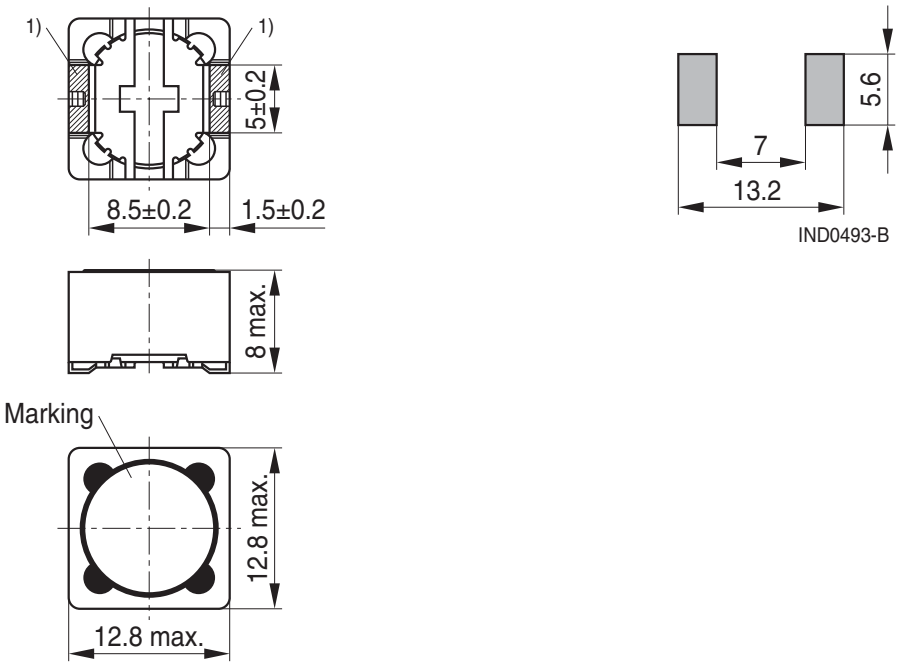
Dimensional drawing and layout recommendation



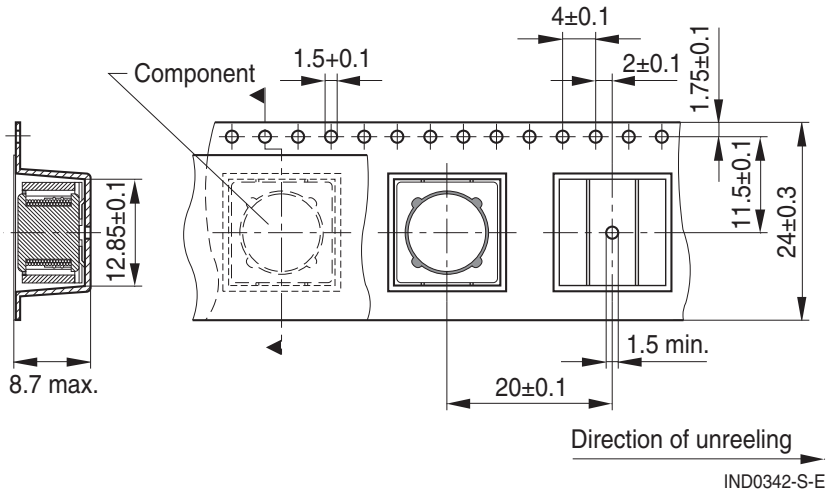
1) Soldering area

IND0492-V-E

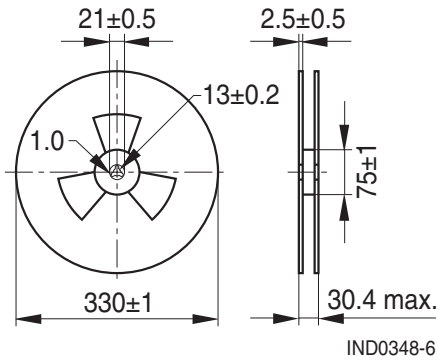
Dimensions in mm

Taping and packing

Blister tape



Reel



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 ≥ 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. 4.2 g

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Characteristics and ordering codes

L_R µH	Tolerance	f_L MHz	I_R A	I_{sat} A	R_{max} Ω	Ordering code
1.0	±20% ≙ M	0.1	9.80	15.00	0.0070	B82477G4102M000
2.2		0.1	8.00	11.00	0.0100	B82477G4222M000
3.9		0.1	7.50	9.50	0.0125	B82477G4392M000
4.7		0.1	6.80	8.60	0.0140	B82477G4472M000
5.6		0.1	6.70	8.40	0.0142	B82477G4562M000
6.8		0.1	6.50	7.30	0.0185	B82477G4682M000
10		0.1	5.40	6.40	0.022	B82477G4103M000
15		0.1	4.50	5.25	0.027	B82477G4153M000
22		0.1	3.60	4.25	0.038	B82477G4223M000
33		0.1	3.00	3.50	0.053	B82477G4333M000
47		0.1	2.50	3.00	0.082	B82477G4473M000
68		0.1	2.10	2.45	0.120	B82477G4683M000
82		0.1	1.90	2.25	0.145	B82477G4823M000
100		0.1	1.70	1.95	0.165	B82477G4104M000
150		0.1	1.42	1.70	0.225	B82477G4154M000
220		0.1	1.16	1.35	0.380	B82477G4224M000
330		0.1	0.95	1.15	0.600	B82477G4334M000
470		0.1	0.80	0.95	0.790	B82477G4474M000
680		0.1	0.68	0.78	1.24	B82477G4684M000
1000		0.1	0.55	0.65	1.68	B82477G4105M000

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

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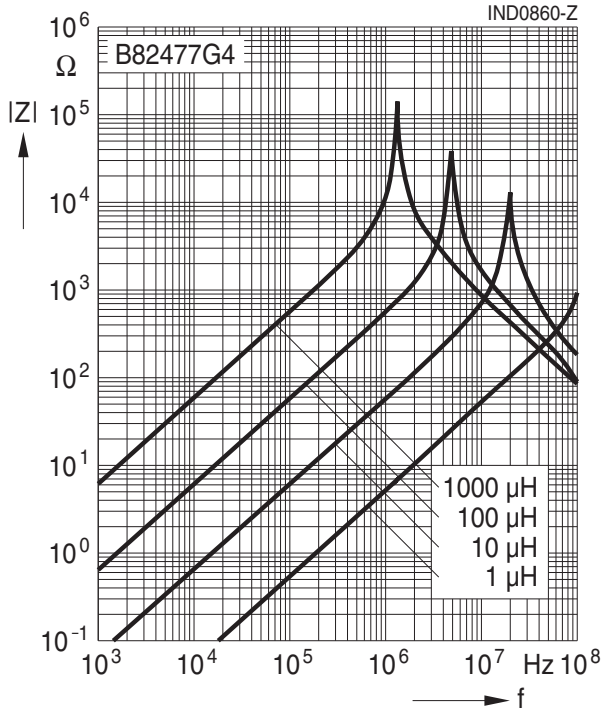
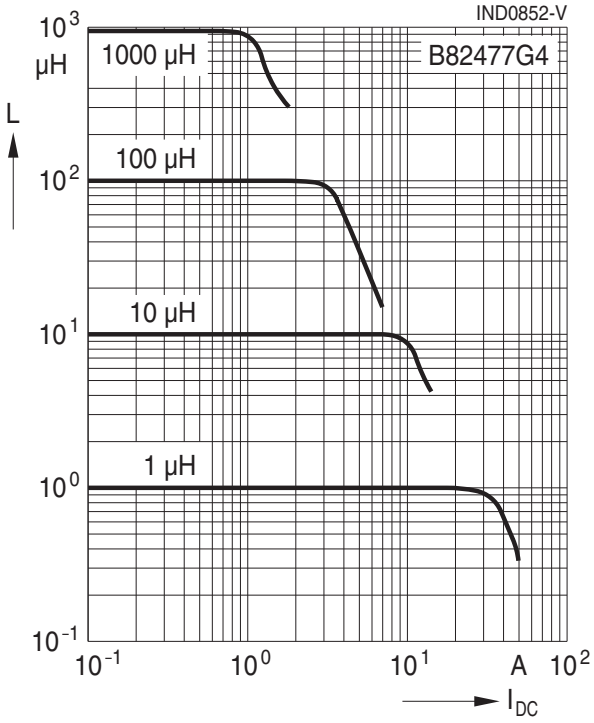
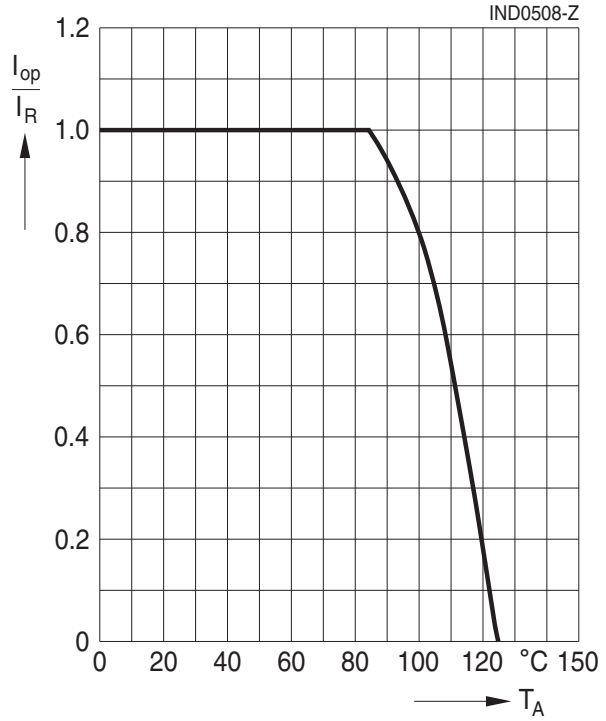
Impedance |Z| versus frequency f
measured with impedance analyzer Agilent 4294A, typical values at +20 °C



Inductance L versus DC load current I_{DC}
measured with LCR meter Agilent 4275A, typical values at +20 °C



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:

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.

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