SMT power inductors

Size 12.8 × 12.8 × 8.0 (mm)

Series/Type: B82477G4
Date: June 2012
SMT power inductors
B82477G4
Size 12.8 x 12.8 x 8.0 (mm)

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 Ø reel
- Packing unit: 400 pcs./reel
SMT power inductors

Size 12.8 x 12.8 x 8.0 (mm)

**SMD**

**Dimensional drawing and layout recommendation**

1) Soldering area

**Dimensions in mm**

**Taping and packing**

Blister tape

Reel

**Dimensions in mm**

Please read *Cautions and warnings* and *Important notes* at the end of this document.
### Technical data and measuring conditions

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated inductance ( L_R )</td>
<td>Measured with LCR meter Agilent 4284A at frequency ( f_L ), 0.1 V, (+20^\circ C)</td>
</tr>
<tr>
<td>Rated temperature ( T_R )</td>
<td>(+85^\circ C)</td>
</tr>
<tr>
<td>Rated current ( I_R )</td>
<td>Max. permissible DC with temperature increase of ( \leq 40 ) K at rated temperature</td>
</tr>
<tr>
<td>Saturation current ( I_{sat} )</td>
<td>Max. permissible DC with inductance decrease ( \Delta L/L_0 ) of approx. 10%</td>
</tr>
<tr>
<td>DC resistance ( R_{max} )</td>
<td>Measured at (+20^\circ C)</td>
</tr>
<tr>
<td>Solderability (lead-free)</td>
<td>Dip and look method Sn95.5Ag3.8Cu0.7: (+245 \pm 5^\circ C), ((5 \pm 0.3)) s (\geq 90%) (wetting of soldering area) (based on IEC 60068-2-58)</td>
</tr>
<tr>
<td>Resistance to soldering heat</td>
<td>(+260^\circ C), 10 s (based on IEC 60068-2-58)</td>
</tr>
<tr>
<td>Climatic category</td>
<td>55/125/56 (to IEC 60068-1)</td>
</tr>
<tr>
<td>Storage conditions</td>
<td>Mounted: (-55^\circ C \ldots +125^\circ C) Packaged: (-25^\circ C \ldots +40^\circ C), (\leq 75%) RH</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 4.2 g</td>
</tr>
</tbody>
</table>
**SMT power inductors**

B82477G4

**Size 12.8 x 12.8 x 8.0 (mm)**

### Characteristics and ordering codes

<table>
<thead>
<tr>
<th>L_R (μH)</th>
<th>Tolerance</th>
<th>f_L (MHz)</th>
<th>I_R (A)</th>
<th>I_sat (A)</th>
<th>R_max (Ω)</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>±20% ± M</td>
<td>0.1</td>
<td>9.80</td>
<td>15.00</td>
<td>0.0070</td>
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<td>2.2</td>
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<td>8.00</td>
<td>11.00</td>
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<td>3.9</td>
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<td>6.80</td>
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<td>5.6</td>
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<td>2.50</td>
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<td>68</td>
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<td>2.10</td>
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<td>1.90</td>
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<tr>
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<tr>
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<td>0.95</td>
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<tr>
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<td>0.68</td>
<td>0.78</td>
<td>1.24</td>
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<td>1000</td>
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<td>0.55</td>
<td>0.65</td>
<td>1.68</td>
<td>B82477G4105M000</td>
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Sample kit available. Ordering code: B8247XX001

For more information refer to chapter “Sample kits”.

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Please read **Cautions and warnings** and **Important notes** at the end of this document.
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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)
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.
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 we are 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 a 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.

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