SMT power inductors

Size $6.0 \times 6.0 \times 3.0$ (mm)

Series/Type: B82462A4
Date: June 2012
SMT power inductors

**Rated inductance** 1 ... 1000 μH
**Rated current** 0.11 ... 3 A

**Construction**
- Ferrite core
- Winding: enamel copper wire
- Winding welded to terminals

**Features**
- Temperature range up to +150 °C
- High rated current
- Low DC resistance
- Suitable for lead-free reflow soldering as referenced in JEDEC J-STD 020D
- Qualified to AEC-Q200
- RoHS-compatible

**Applications**
- Filtering of supply voltages
- Coupling, decoupling
- DC/DC converters
- Automotive electronics
- Industrial electronics

**Terminals**
- Base material CuSn6
- Layer composition Ag, Sn (lead-free)\(^1\)
- Electro-plated

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

**Delivery mode and packing unit**
- 12-mm blister tape, wound on 330-mm Ø reel
- Packing unit: 2500 pcs./reel

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1) Ni-barrier-plated terminals on request (B82462A4*50).

Please read Cautions and warnings and Important notes at the end of this document.
SMT power inductors  
B82462A4  
Size 6.0 x 6.0 x 3.0 (mm)

**SMD**

Dimensional drawing and layout recommendation

[Image of dimensional drawing]

1) Soldering area

IND0471-F-E

**Taping and packing**

**Blister tape**

[Image of blister tape]

Dimensions in mm

**Reel**

[Image of reel]

Dimensions in mm

Please read **Cautions and warnings** and **Important notes** at the end of this document.
<table>
<thead>
<tr>
<th>Technical data and measuring conditions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated inductance $L_R$</td>
<td>Measured with impedance analyzer Agilent 4294A at frequency $f_L$, 0.1 V, +20 °C</td>
</tr>
<tr>
<td>Rated temperature $T_R$</td>
<td>+85 °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 $R_{\text{max}}$</td>
<td>Measured at +20 °C</td>
</tr>
<tr>
<td>Solderability (lead-free)</td>
<td>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)</td>
</tr>
<tr>
<td>Resistance to soldering heat</td>
<td>+260 °C, 40 s as referenced in JEDEC J-STD 020D</td>
</tr>
<tr>
<td>Climatic category</td>
<td>55/150/56 (to IEC 60068-1)</td>
</tr>
<tr>
<td>Storage conditions</td>
<td>Mounted: $-55$ °C ... +150 °C Packaged: $-25$ °C ... +40 °C, $\leq 75%$ RH</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 0.2 g</td>
</tr>
</tbody>
</table>
### Characteristics and ordering codes

<table>
<thead>
<tr>
<th><strong>L_R</strong></th>
<th><strong>Tolerance</strong></th>
<th><strong>f_L</strong></th>
<th><strong>I_R</strong></th>
<th><strong>I_sat</strong></th>
<th><strong>R_max</strong></th>
<th><strong>Ordering code</strong></th>
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<tbody>
<tr>
<td><strong>µH</strong></td>
<td>MHz</td>
<td>A</td>
<td>Ω</td>
<td></td>
<td></td>
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<tr>
<td>1.0</td>
<td>±20% M</td>
<td>0.1</td>
<td>3.00</td>
<td>5.8</td>
<td>0.024</td>
<td>B82462A4102M000</td>
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<tr>
<td>1.5</td>
<td>±20% M</td>
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<td>2.60</td>
<td>4.6</td>
<td>0.030</td>
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<tr>
<td>2.2</td>
<td>±20% M</td>
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<td>2.30</td>
<td>3.8</td>
<td>0.042</td>
<td>B82462A4222M000</td>
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<tr>
<td>3.3</td>
<td>±20% M</td>
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<td>2.00</td>
<td>3.2</td>
<td>0.060</td>
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<tr>
<td>4.7</td>
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<td>1.65</td>
<td>2.8</td>
<td>0.080</td>
<td>B82462A4472M000</td>
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<tr>
<td>6.8</td>
<td>±20% M</td>
<td>0.1</td>
<td>1.40</td>
<td>2.3</td>
<td>0.10</td>
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<tr>
<td>10</td>
<td>±20% M</td>
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<td>1.15</td>
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<td>15</td>
<td>±10% K</td>
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<td>0.90</td>
<td>1.5</td>
<td>0.21</td>
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<tr>
<td>22</td>
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<td>0.80</td>
<td>1.28</td>
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<td>0.63</td>
<td>1.04</td>
<td>0.42</td>
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<tr>
<td>47</td>
<td>±10% K</td>
<td>0.1</td>
<td>0.54</td>
<td>0.82</td>
<td>0.64</td>
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<tr>
<td>68</td>
<td>±10% K</td>
<td>0.1</td>
<td>0.43</td>
<td>0.69</td>
<td>0.86</td>
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<tr>
<td>100</td>
<td>±10% K</td>
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<td>0.35</td>
<td>0.57</td>
<td>1.28</td>
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<tr>
<td>150</td>
<td>±10% K</td>
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<td>0.29</td>
<td>0.49</td>
<td>1.76</td>
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<tr>
<td>220</td>
<td>±10% K</td>
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<td>0.24</td>
<td>0.40</td>
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<tr>
<td>330</td>
<td>±10% K</td>
<td>0.1</td>
<td>0.20</td>
<td>0.34</td>
<td>3.90</td>
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<tr>
<td>470</td>
<td>±10% K</td>
<td>0.1</td>
<td>0.17</td>
<td>0.28</td>
<td>5.60</td>
<td>B82462A4474K000</td>
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<tr>
<td>680</td>
<td>±10% K</td>
<td>0.1</td>
<td>0.14</td>
<td>0.23</td>
<td>8.00</td>
<td>B82462A4684K000</td>
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<tr>
<td>1000</td>
<td>±10% K</td>
<td>0.1</td>
<td>0.11</td>
<td>0.18</td>
<td>13.00</td>
<td>B82462A4105K000</td>
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</table>

Sample kit available. Ordering code: B82462X004
For more information refer to chapter “Sample kits”.

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1) For Ni-barrier-plated terminals replace the last two digits “00” by “50”.

Please read **Cautions and warnings** and **Important notes** at the end of this document.
Impedance $|Z|$ versus frequency $f$
measured with impedance analyzer
Agilent 4294A, typical values at $+20 \, ^{\circ}\mathrm{C}$

Inductance $L$ versus DC load current $I_{DC}$
measured with LCR meter Agilent 4275A,
typical values at $+20 \, ^{\circ}\mathrm{C}$

Current derating $I_{op}/I_R$
versus ambient temperature $T_A$
(rated temperature $T_R = +85 \, ^{\circ}\mathrm{C}$)
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.
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 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.

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6. Unless otherwise agreed in individual contracts, all orders are subject to our General Terms and Conditions of Supply.

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