



## **SMT power inductors**

Size  $6.0 \times 6.0 \times 2.5$  (mm)

**Series/Type:**            **B82462A2**

**Date:**                    March 2008

**SMT power inductors**

**B82462A2**

**Size 6.0 × 6.0 × 2.5 (mm)**

**SMD**

**Rated inductance 1  $\mu$ H to 330  $\mu$ H**

**Rated current 0.17 A to 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 020C
- 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)<sup>1)</sup>
- Electro-plated

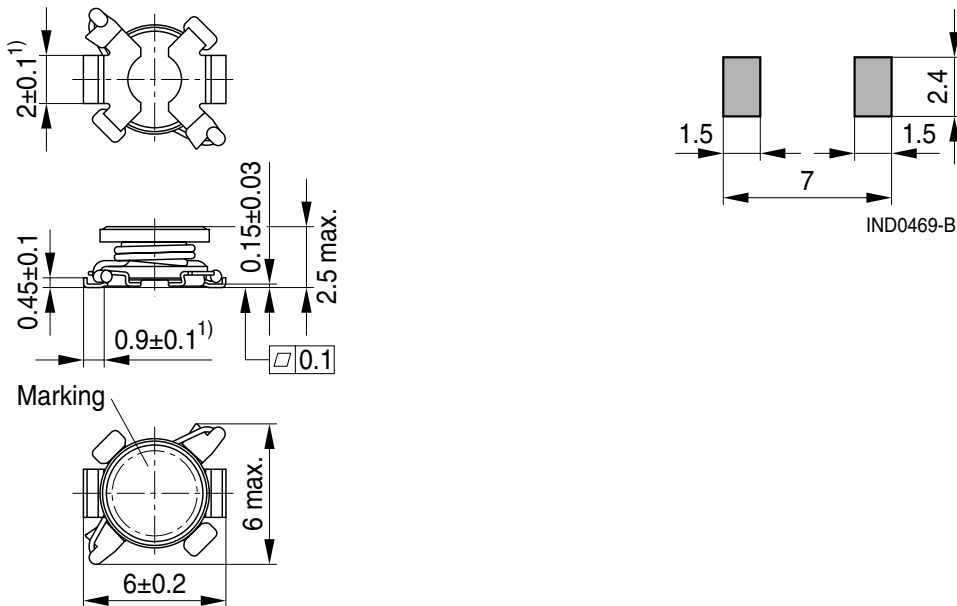
**Marking**

- 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  $\varnothing$  reel
- Packing unit: 2500 pcs./reel

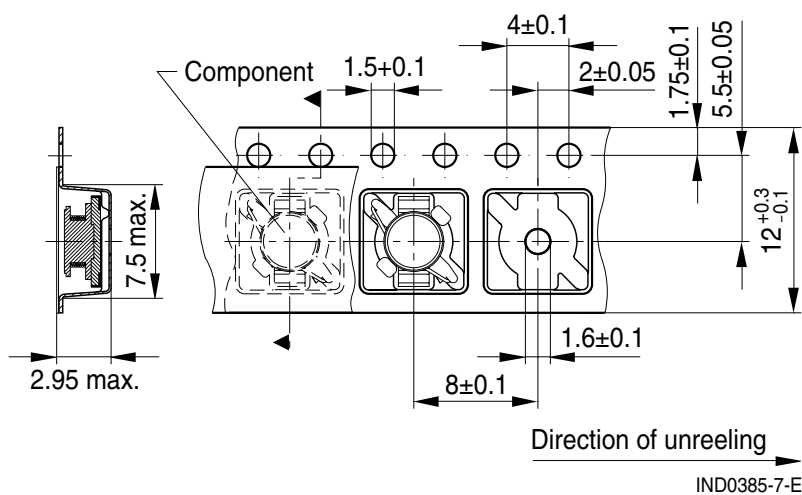
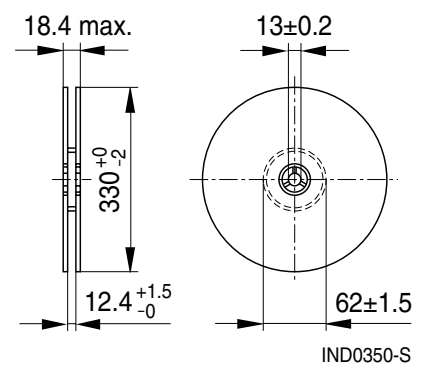
<sup>1)</sup> Ni-barrier-plated terminals on request (B82462A2\*50).

**SMD**
**Dimensional drawing and layout recommendation**


1) Soldering area

IND0468-C-E

Dimensions in mm

**Taping and packing**
**Blister tape**

**Reel**


Dimensions in mm

**Technical data and measuring conditions**

|                              |                                                                                                                                          |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Rated inductance $L_R$       | Measured with impedance analyzer Agilent 4294A 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 $\leq 40$ 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:<br>(245 ± 5) °C, (5 ± 0.3) s<br>Wetting of soldering area $\geq 90\%$<br>(based on IEC 60068-2-58) |
| Resistance to soldering heat | 260 °C, 40 s (as referenced in JEDEC J-STD 020C)                                                                                         |
| Climatic category            | 55/150/56 (to IEC 60068-1)                                                                                                               |
| Storage conditions           | Mounted: -55 °C ... +150 °C<br>Packaged: -25 °C ... +40 °C, $\leq 75\%$ RH                                                               |
| Weight                       | Approx. 0.75 g                                                                                                                           |

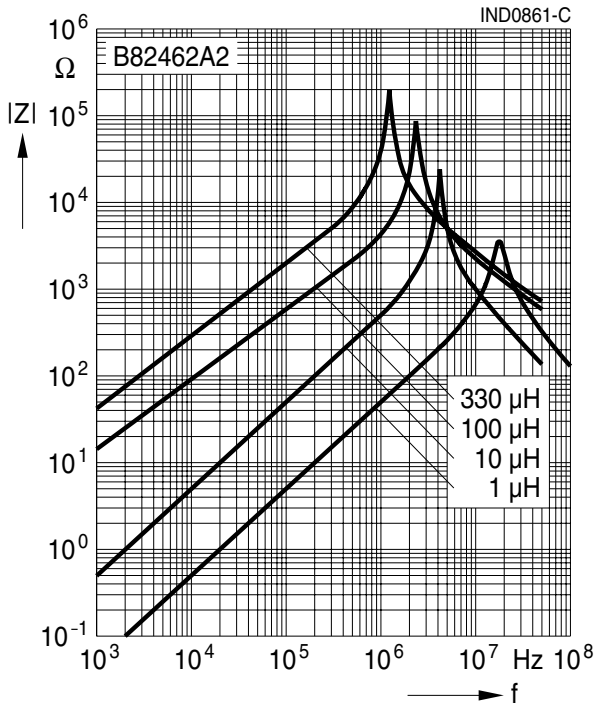
**Characteristics and ordering codes**

| $L_R$<br>$\mu H$ | Tolerance               | $f_L$<br>MHz | $I_R$<br>A | $I_{sat}$<br>A | $R_{max}$<br>$\Omega$ | Ordering code   |
|------------------|-------------------------|--------------|------------|----------------|-----------------------|-----------------|
| 1.0              | $\pm 20\% \triangleq M$ | 0.1          | 3.0        | 5.1            | 0.024                 | B82462A2102M000 |
| 1.5              |                         | 0.1          | 2.55       | 3.7            | 0.032                 | B82462A2152M000 |
| 2.2              |                         | 0.1          | 2.10       | 3.1            | 0.048                 | B82462A2222M000 |
| 3.3              |                         | 0.1          | 1.80       | 2.6            | 0.065                 | B82462A2332M000 |
| 4.7              |                         | 0.1          | 1.55       | 2.0            | 0.084                 | B82462A2472M000 |
| 6.8              |                         | 0.1          | 1.28       | 1.55           | 0.125                 | B82462A2682M000 |
| 10               |                         | 0.1          | 1.03       | 1.35           | 0.180                 | B82462A2103M000 |
| 15               | $\pm 10\% \triangleq K$ | 0.1          | 0.86       | 1.10           | 0.260                 | B82462A2153K000 |
| 22               |                         | 0.1          | 0.73       | 0.97           | 0.350                 | B82462A2223K000 |
| 33               |                         | 0.1          | 0.60       | 0.81           | 0.470                 | B82462A2333K000 |
| 47               |                         | 0.1          | 0.49       | 0.68           | 0.690                 | B82462A2473K000 |
| 68               |                         | 0.1          | 0.39       | 0.52           | 1.10                  | B82462A2683K000 |
| 100              |                         | 0.1          | 0.30       | 0.47           | 1.60                  | B82462A2104K000 |
| 150              |                         | 0.1          | 0.25       | 0.37           | 2.55                  | B82462A2154K000 |
| 220              |                         | 0.1          | 0.21       | 0.30           | 3.80                  | B82462A2224K000 |
| 330              |                         | 0.1          | 0.17       | 0.26           | 5.05                  | B82462A2334K000 |

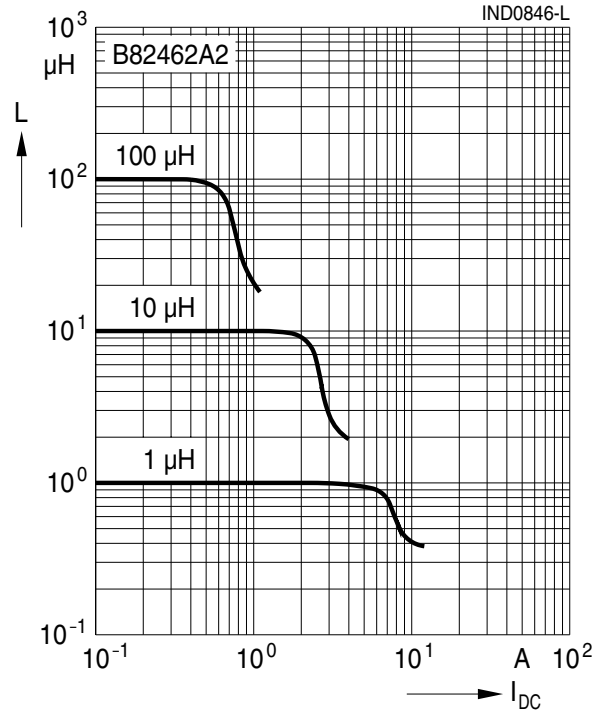
1) For Ni-barrier-plated terminals replace the last two digits "00" by "50".

**SMD**

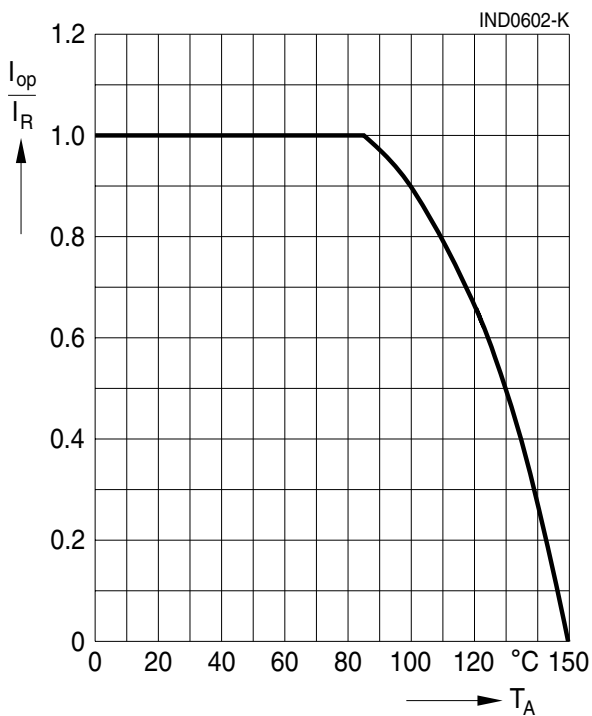
**Impedance  $|Z|$  versus frequency  $f$**   
measured with impedance analyzer  
Agilent 4294A, typical values at 20 °C



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



**Current derating  $I_{\text{op}}/I_{\text{R}}$**   
**versus ambient temperature  $T_{\text{A}}$**   
(rated temperature  $T_{\text{R}} = 85$  °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.

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