SMT power inductors

Size 6.0 × 6.0 × 2.5 (mm)

Series/Type: **B82462A2**

Date: March 2008

SMD

Rated inductance 1 µH to 330 µH
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)[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 ∅ reel
- Packing unit: 2500 pcs./reel

1) Ni-barrier-plated terminals on request (B82462A2*50).

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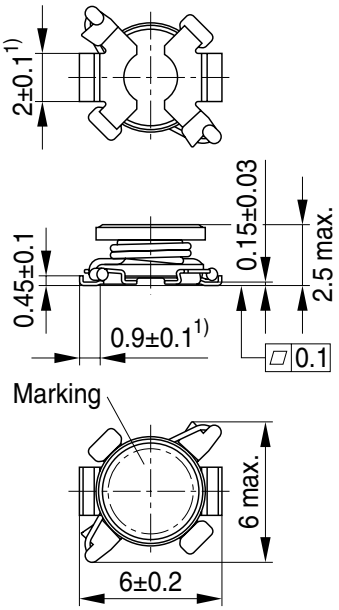
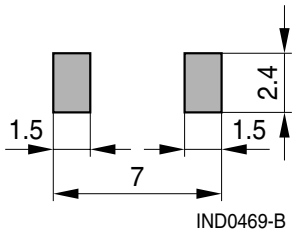
Dimensional drawing and layout recommendation





IND0469-B

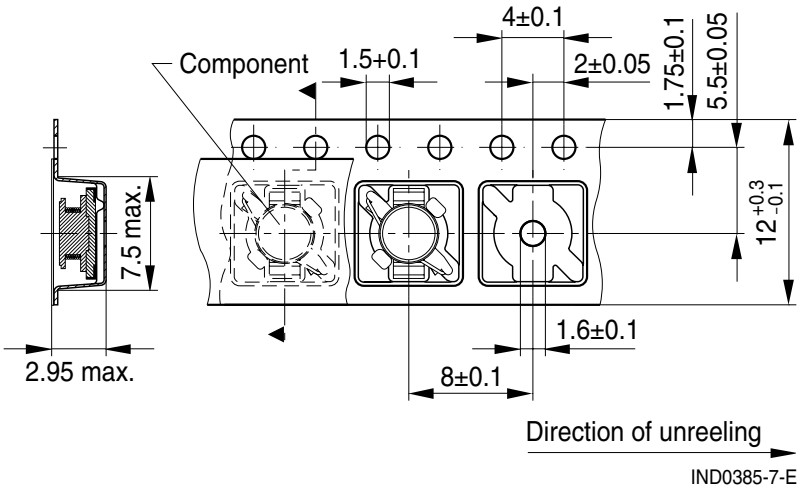
1) Soldering area

IND0468-C-E

Dimensions in mm

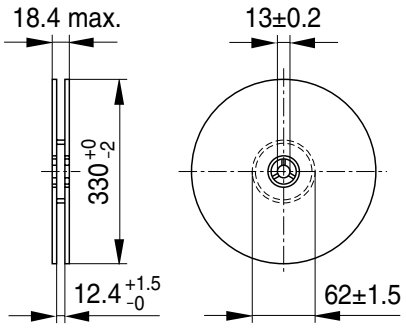
Taping and packing

Blister tape



IND0385-7-E

Reel



IND0350-S

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 ≤ 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, 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 Packaged: –25 °C … +40 °C, ≤ 75% RH
Weight	Approx. 0.75 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	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	±10% ≙ 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”.

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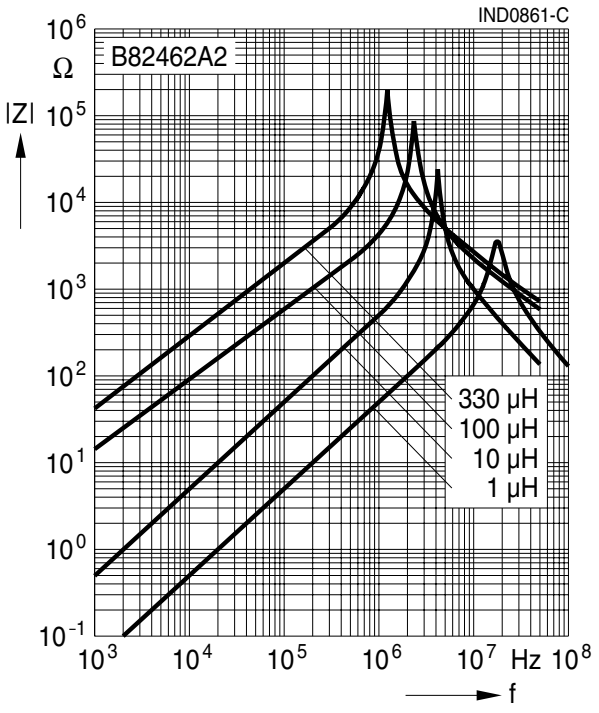
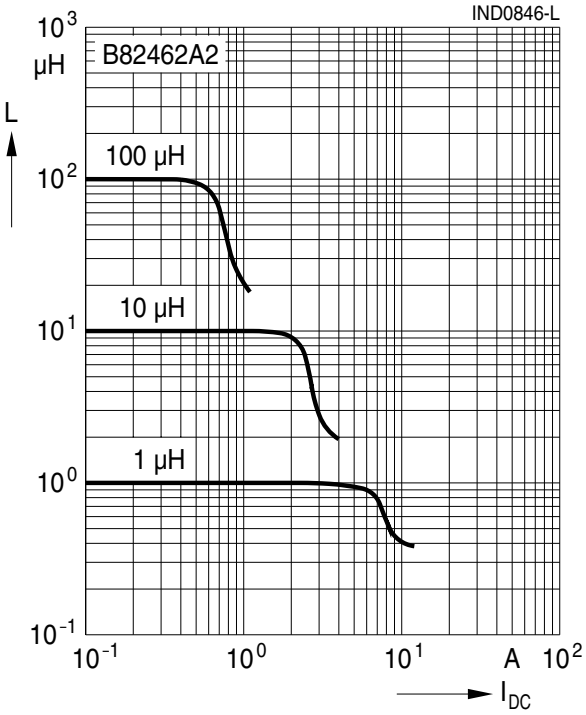
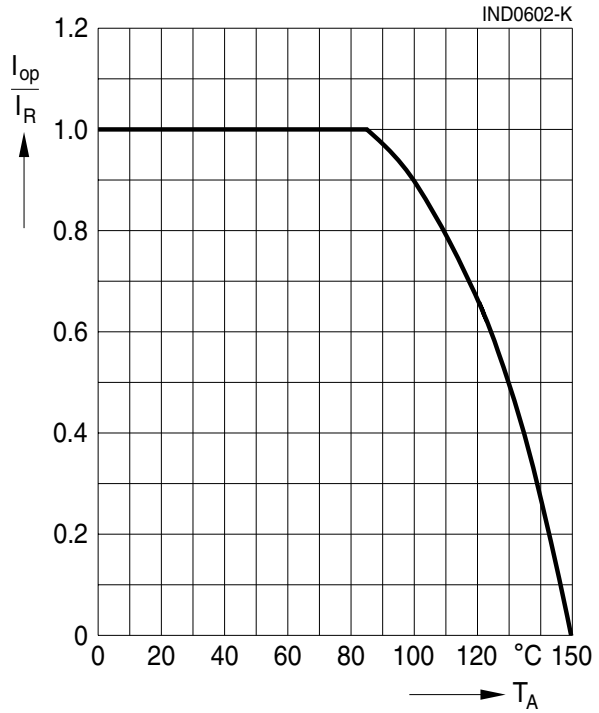
Impedance |Z| versus frequency f
measured with impedance analyzer Agilent 4294A, typical values at 20 °C



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.
- 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.**

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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**.

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