EPCOS

SMT power inductors

Size 6.3 × 6.3 × 3.0 (mm)

Series/Type: **B82462G4**

Date: March 2008

SMD

Rated inductance 0.82 µH to 1000 µH
Rated current 0.16 A to 3.45 A

Construction

- Ferrite core
- Magnetically shielded
- 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

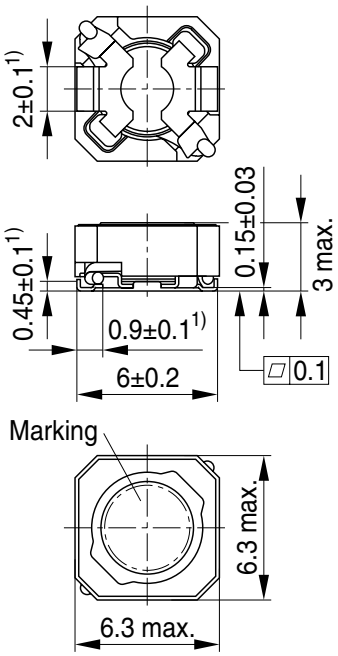
Delivery mode and packing unit

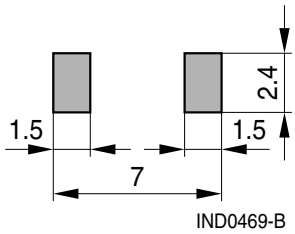
- 12-mm blister tape, wound on 330-mm ∅ reel
- Packing unit: 2500 pcs./reel

1) Ni-barrier-plated terminals on request (B82462G4*050).

SMD

Dimensional drawing and layout recommendation





IND0469-B

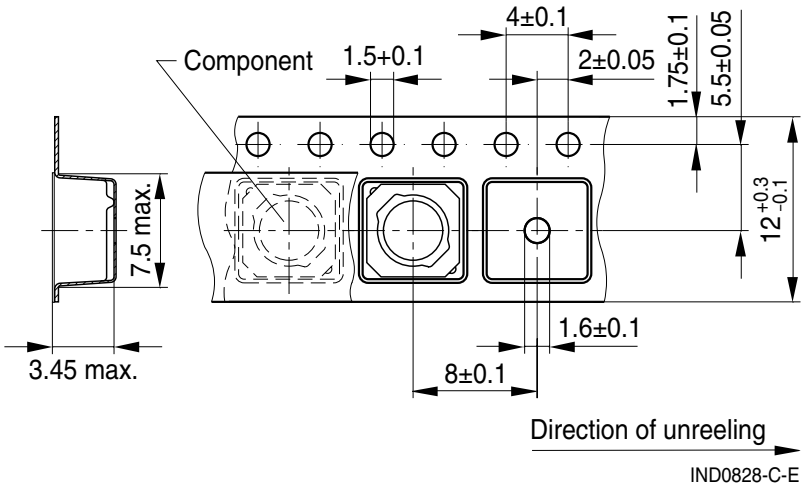
Dimensions in mm

1) Soldering area

IND0472-V-E

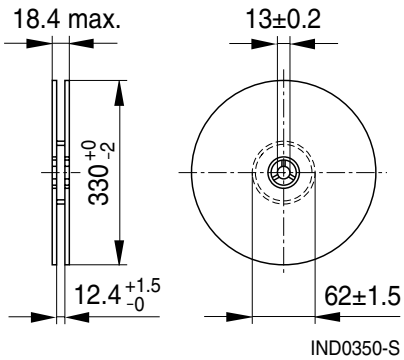
Taping and packing

Blister tape



IND0828-C-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. 1.5 g

SMD

Characteristics and ordering codes

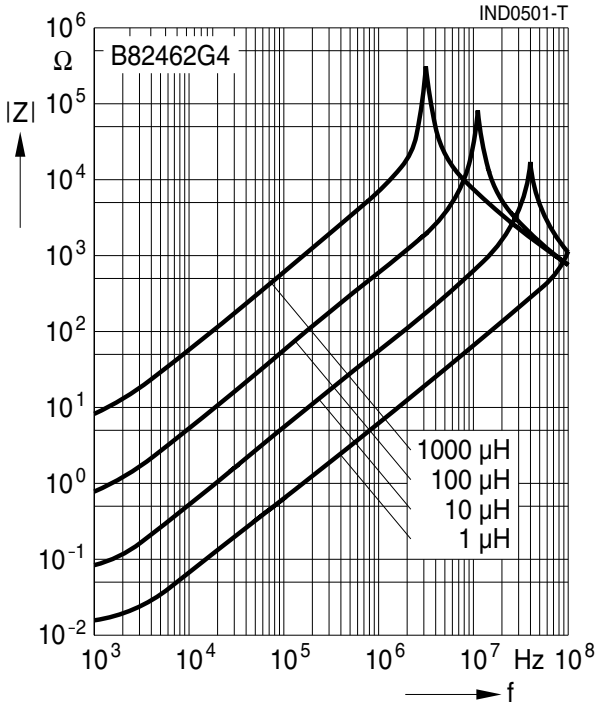
L_R µH	Tolerance	f_L MHz	I_R A	I_{sat} A	R_{max} Ω	Ordering code
0.82	±20% ≙ M	0.1	3.45	4.45	0.015	B82462G4821M000
1.0		0.1	3.40	4.40	0.016	B82462G4102M000
1.2		0.1	3.25	3.90	0.017	B82462G4122M000
1.5		0.1	3.10	3.60	0.020	B82462G4152M000
2.2		0.1	2.55	2.60	0.025	B82462G4222M000
3.3		0.1	2.30	2.10	0.031	B82462G4332M000
4.7		0.1	2.00	1.80	0.040	B82462G4472M000
6.8		0.1	1.65	1.50	0.050	B82462G4682M000
10		0.1	1.50	1.30	0.062	B82462G4103M000
15		0.1	1.25	1.05	0.097	B82462G4153M000
22		0.1	1.05	0.85	0.15	B82462G4223M000
33		0.1	0.85	0.72	0.23	B82462G4333M000
47		0.1	0.75	0.60	0.31	B82462G4473M000
68		0.1	0.65	0.50	0.41	B82462G4683M000
100		0.1	0.53	0.42	0.58	B82462G4104M000
150		0.1	0.38	0.33	1.05	B82462G4154M000
220		0.1	0.35	0.28	1.35	B82462G4224M000
330		0.1	0.27	0.22	2.30	B82462G4334M000
470		0.1	0.24	0.18	2.70	B82462G4474M000
680		0.1	0.20	0.15	4.05	B82462G4684M000
1000		0.1	0.16	0.13	6.00	B82462G4105M000

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

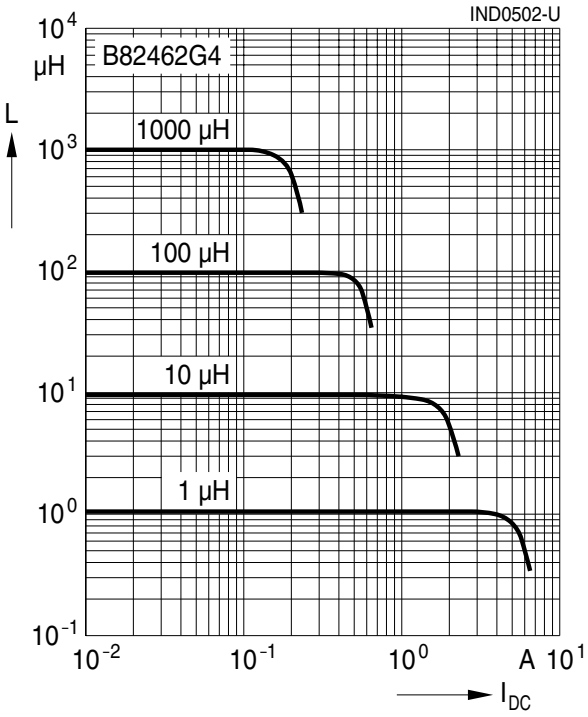
1) For Ni-barrier-plated terminals replace the last two digits “00” by “50”.

SMD

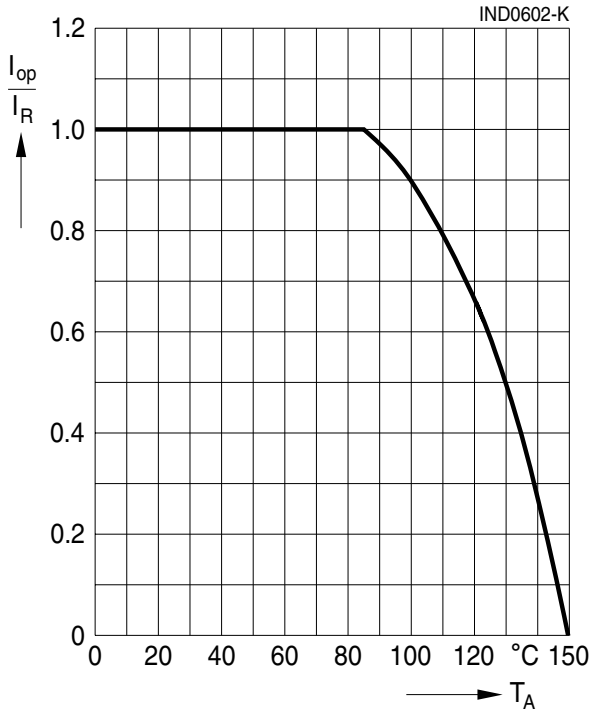
Impedance |Z| versus frequency f
measured with impedance analyzer Agilent 4294A, typical values at 20 °C



Inductance L versus DC load current I_{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.**

   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.

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**.

4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as hazardous)**. Useful information on this will be found in our Material Data Sheets on the Internet (www.epcos.com/material). Should you have any more detailed questions, please contact our sales offices.

5. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order.

   We also **reserve the right to discontinue production and delivery of products**. Consequently, we cannot guarantee that all products named in this publication will always be available.

   The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products.

6. Unless otherwise agreed in individual contracts, **all orders are subject to the current version of the "General Terms of Delivery for Products and Services in the Electrical Industry" published by the German Electrical and Electronics Industry Association (ZVEI)**.

7. The trade names EPCOS, BAOKE, Alu-X, CeraDiode, CSMP, CSSP, CTVS, DSSP, MiniBlue, MKK, MLSC, MotorCap, PCC, PhaseCap, PhaseCube, PhaseMod, SIFERRIT, SIFI, SIKOREL, SilverCap, SIMDAD, SIMID, SineFormer, SIOV, SIP5D, SIP5K, ThermoFuse, WindCap are **trademarks registered or pending** in Europe and in other countries. Further information will be found on the Internet at www.epcos.com/trademarks.