



## **SMT power inductors**

Size 6.3 × 6.3 × 3.0 (mm)

**Series/Type:**            **B82462G4**

**Date:**                    September 2019

**SMD**
**Rated inductance 0.82 ... 1000  $\mu$ H**
**Rated current 0.16 ... 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 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)<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

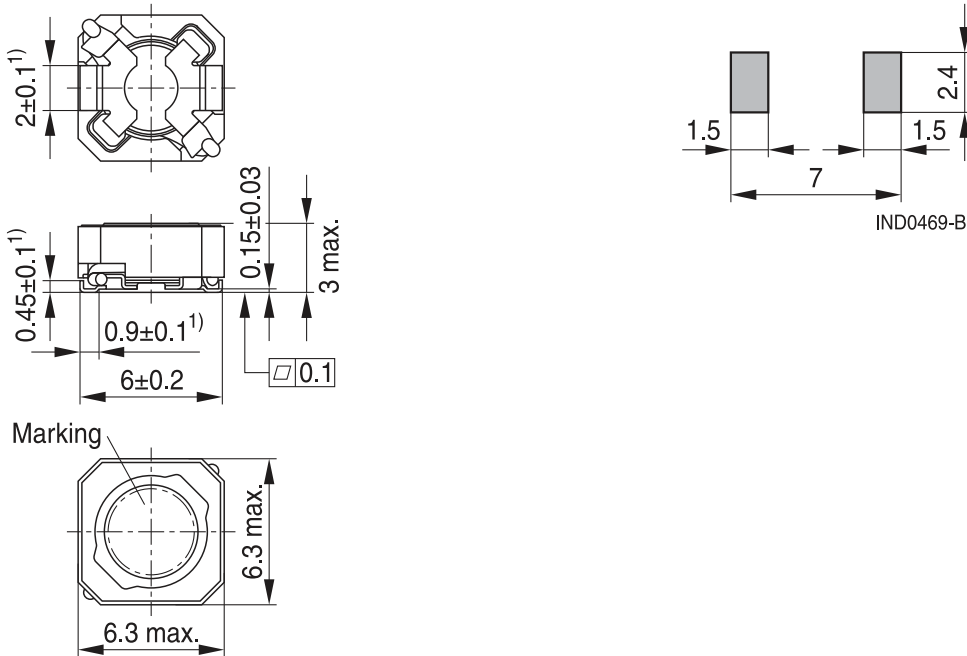
**Delivery mode and packing unit**

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

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

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**Dimensional drawing and layout recommendation**



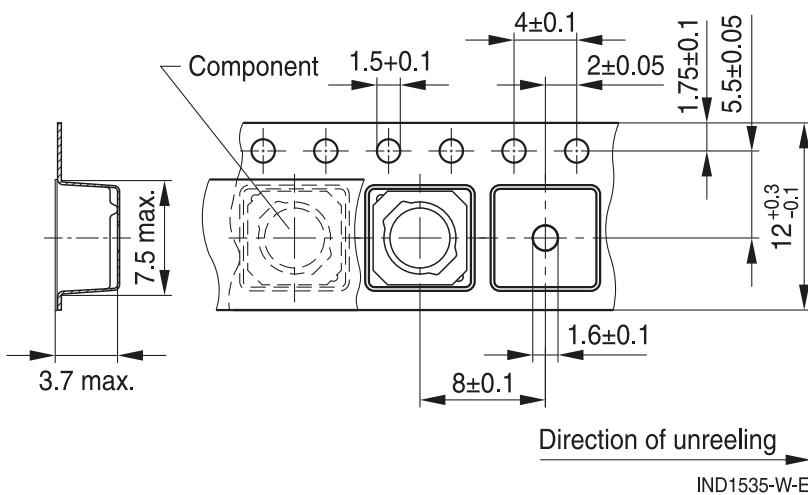
1) Soldering area

IND1118-C

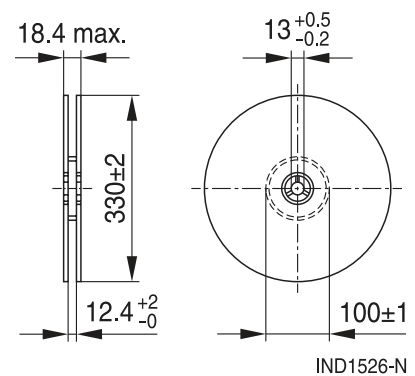
Dimensions in mm

**Taping and packing**

**Blister tape**



**Reel**



Dimensions in mm

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**Technical data and measuring conditions**

Rated inductance $L_R$	Measured with impedance analyzer Agilent 4294A or equivalent at frequency $f_L$ , 0.1 V, +20 °C
Operating temperature range	-55 ... + 150 °C
Rated current $I_{temp,typ}$	Max. permissible DC with temperature increase of $\leq 40$ K at +85 °C
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 $\geq 90\%$ (based on IEC 60068-2-58)
Resistance to soldering heat	+260 °C, 40 s as referenced in JEDEC J-STD 020D
Climatic category	55/150/56 (to IEC 60068-1)
Storage conditions	Mounted: -55 °C ... +150 °C Packaged: -25 °C ... +40 °C, $\leq 75\%$ RH
Weight	Approx. 0.4 g

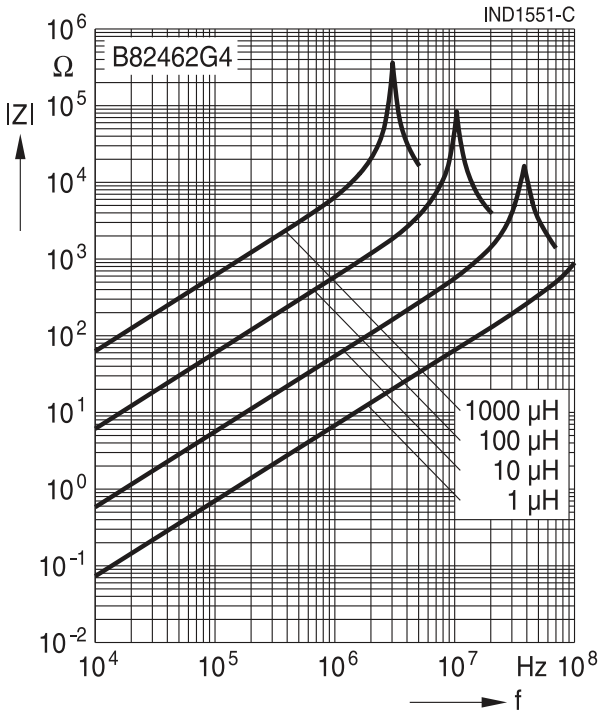
**SMD**
**Characteristics and ordering codes**

$L_R$ $\mu\text{H}$	Tolerance	$f_L$ MHz	$I_{\text{sat,typ}}$ A	$I_{\text{sat,min}}$ A	$I_{\text{temp,typ}}$ A	$R_{\text{max}}$ $\Omega$	$R_{\text{typ}}$ $\Omega$	Ordering code
0.82	$\pm 20\% \triangleq M$	0.1	5.10	4.45	3.45	0.0150	0.0136	B82462G4821M000
1.0		0.1	4.70	4.40	3.40	0.0160	0.0159	B82462G4102M000
1.2		0.1	4.20	3.90	3.25	0.0170	0.0161	B82462G4122M000
1.5		0.1	3.70	3.60	3.10	0.0200	0.0180	B82462G4152M000
2.2		0.1	3.05	2.60	2.55	0.0250	0.0215	B82462G4222M000
3.3		0.1	2.70	2.10	2.30	0.0310	0.0251	B82462G4332M000
4.7		0.1	2.20	1.80	2.00	0.0400	0.0350	B82462G4472M000
6.8		0.1	1.70	1.50	1.65	0.0500	0.0463	B82462G4682M000
10		0.1	1.45	1.30	1.50	0.0620	0.0580	B82462G4103M000
15		0.1	1.20	1.05	1.25	0.0970	0.0910	B82462G4153M000
22		0.1	0.93	0.85	1.05	0.1500	0.1350	B82462G4223M000
33		0.1	0.82	0.72	0.85	0.2300	0.2010	B82462G4333M000
47		0.1	0.68	0.60	0.75	0.3100	0.2860	B82462G4473M000
68		0.1	0.54	0.50	0.65	0.4100	0.3720	B82462G4683M000
100		0.1	0.57	0.42	0.53	0.5800	0.5610	B82462G4104M000
150	0.1	0.37	0.33	0.38	1.0500	0.8460	B82462G4154M000	
220	0.1	0.28	0.28	0.35	1.3500	1.2600	B82462G4224M000	
330	0.1	0.27	0.22	0.27	2.3000	1.8370	B82462G4334M000	
470	0.1	0.23	0.18	0.24	2.7000	2.5000	B82462G4474M000	
680	0.1	0.18	0.15	0.20	4.0500	3.7000	B82462G4684M000	
1000	0.1	0.15	0.13	0.16	6.0000	5.6000	B82462G4105M000	

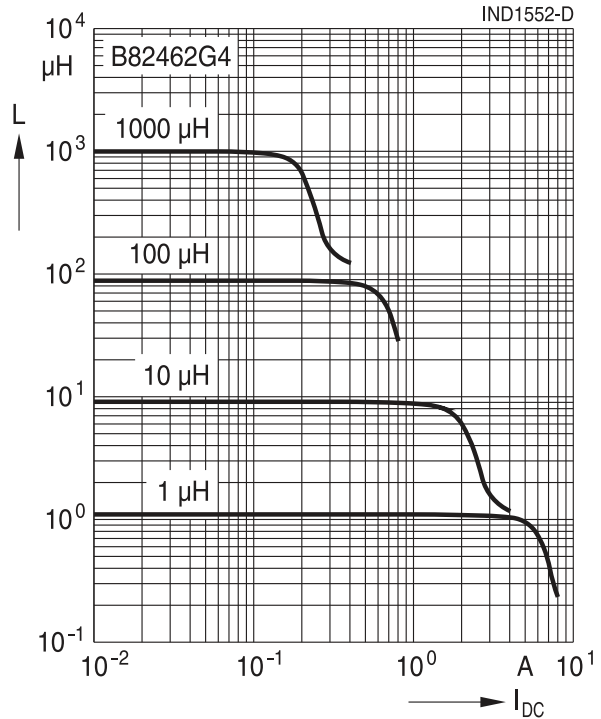
1) For Ni-barrier-plated terminals replace the last two digits "00" by "50".

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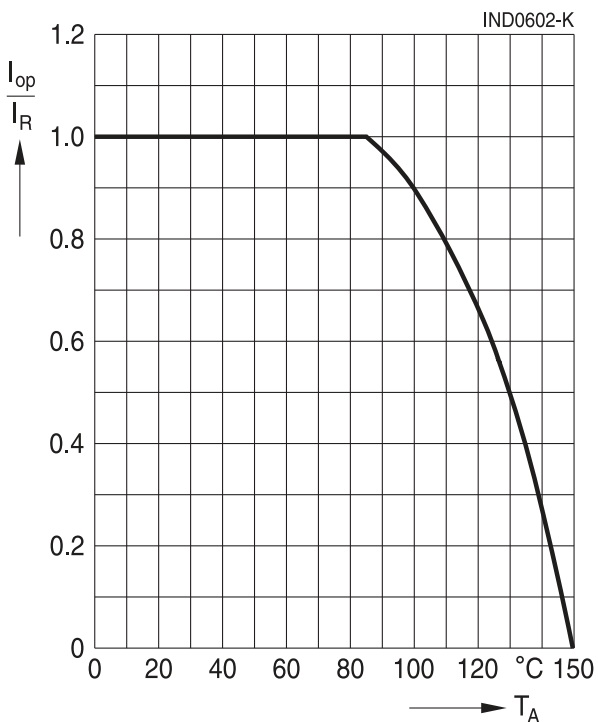
**Impedance  $|Z|$  versus frequency  $f$**   
 measured with impedance analyzer  
 Agilent 4294A, typical values at +20 °C



**Inductance  $L$  versus DC load current  $I_{DC}$**   
 measured with LCR meter Agilent 4285A,  
 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.  
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, wire insulation, plastics or glue.
  - The effect of the potting material can change the high-frequency behaviour of the components.
  - Many coating materials have a negative effect (chemically and mechanically) on the winding wires, insulation materials and connecting points. Customers are always obligated to determine whether and to what extent their coating materials influence the component.  
Customers are responsible and bear all risk for the use of the coating material. TDK Electronics does not assume any liability for failures of our components that are caused by the coating material.
- Ceramics / 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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The ordering code for one and the same product can be represented differently in data sheets, data books, other publications, on the company website, or in order-related documents such as shipping notes, order confirmations and product labels. **The varying representations of the ordering codes are due to different processes employed and do not affect the specifications of the respective products.** Detailed information can be found on the Internet under [www.tdk-electronics.tdk.com/orderingcodes](http://www.tdk-electronics.tdk.com/orderingcodes).

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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.
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## Important notes

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The IATF certifications confirm our compliance with requirements regarding the quality management system in the automotive industry. Referring to customer requirements and customer specific requirements (“CSR”) TDK always has and will continue to have the policy of respecting individual agreements. Even if IATF 16949 may appear to support the acceptance of unilateral requirements, we hereby like to emphasize that **only requirements mutually agreed upon can and will be implemented in our Quality Management System.** For clarification purposes we like to point out that obligations from IATF 16949 shall only become legally binding if individually agreed upon.
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