



## **SMT power inductors**

Size 6.3 × 6.3 × 3.0 (mm)

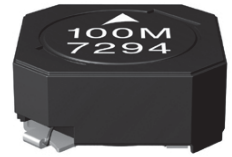
**Series/Type:**            **B82462G4**

**Date:**                    **June 2012**

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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 (YWWDD)
- Minimum data on reel:  
Manufacturer, ordering code,  
L value, quantity, date of packing

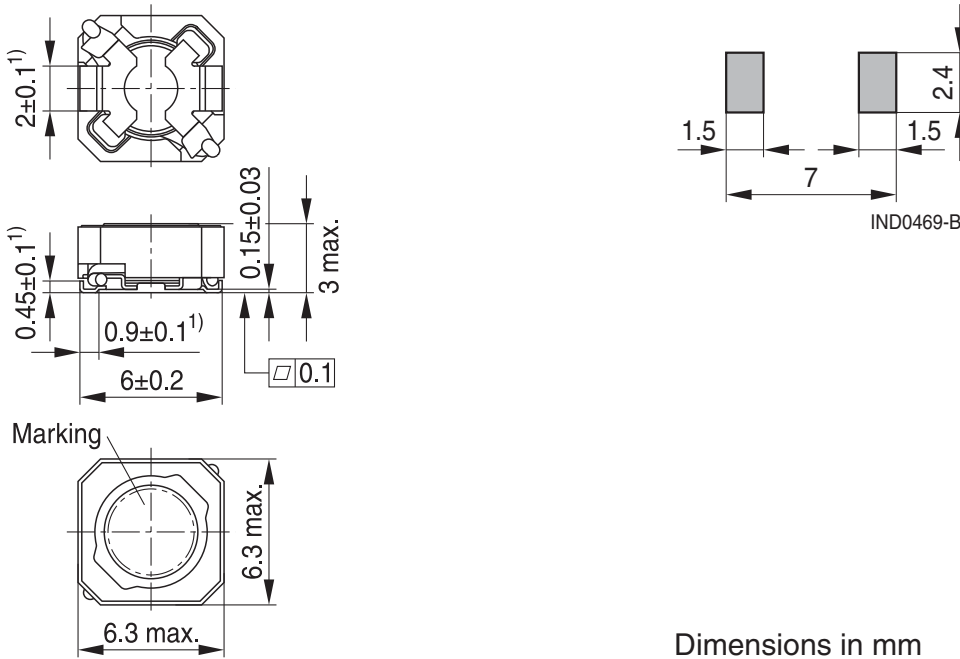
### Delivery mode and packing unit

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

<sup>1)</sup> Ni-barrier-plated terminals on request (B82462G4\*050).

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**Dimensional drawing and layout recommendation**

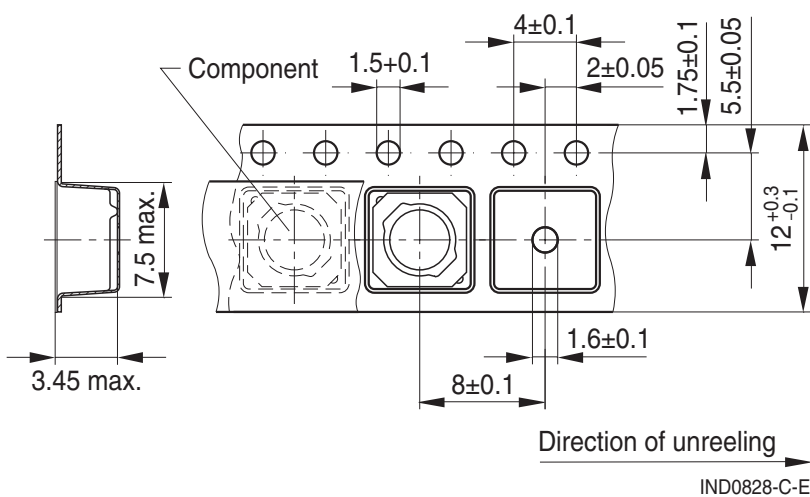


1) Soldering area

IND1118-C

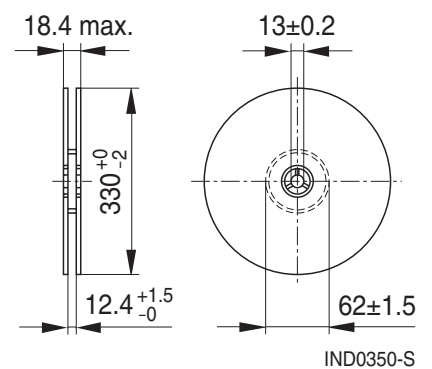
**Taping and packing**

Blister tape



Dimensions in mm

Reel



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**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: +(245 $\pm$ 5) °C, (5 $\pm$ 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

**Characteristics and ordering codes**

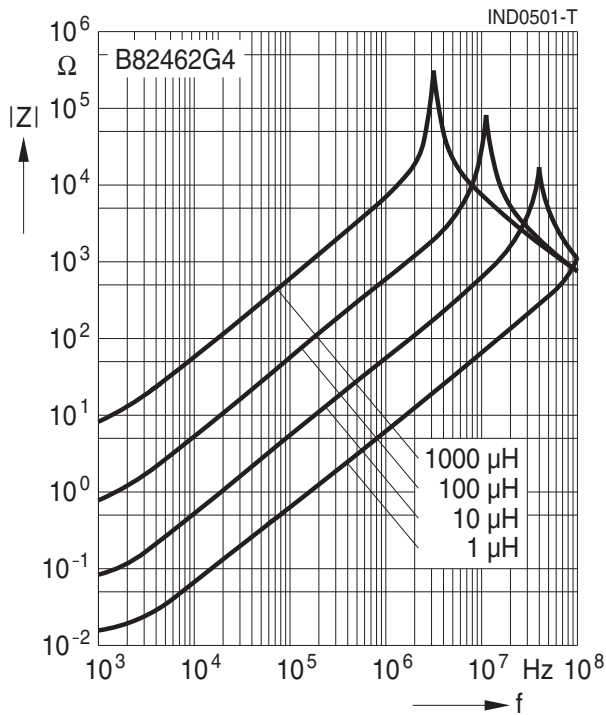
$L_R$ $\mu\text{H}$	Tolerance	$f_L$ MHz	$I_R$ A	$I_{\text{sat}}$ A	$R_{\text{max}}$ $\Omega$	Ordering code
0.82	$\pm 20\% \triangleq M$	0.1	3.45	4.45	0.015	B82462G4821M000
1.0		0.1	3.40	4.40	0.016	B82462G4102M000
1.2		0.1	3.25	3.90	0.017	B82462G4122M000
1.5		0.1	3.10	3.60	0.020	B82462G4152M000
2.2		0.1	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".

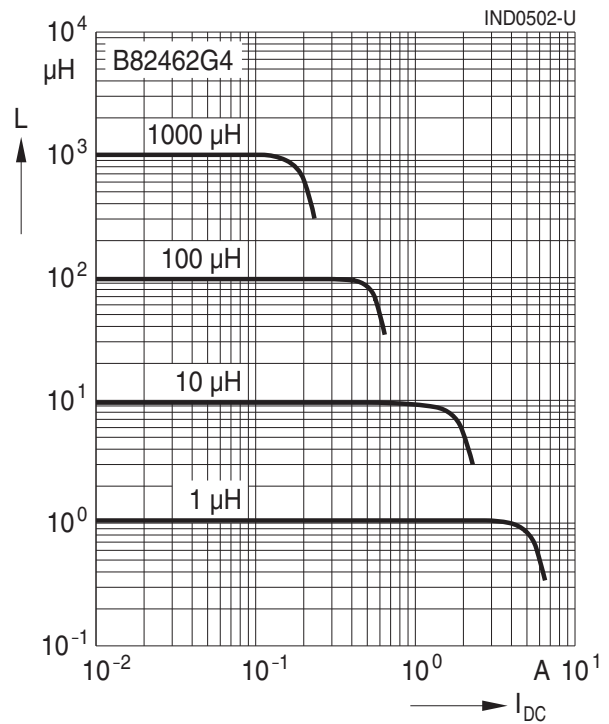
1) For Ni-barrier-plated terminals replace the last two digits "00" by "50".

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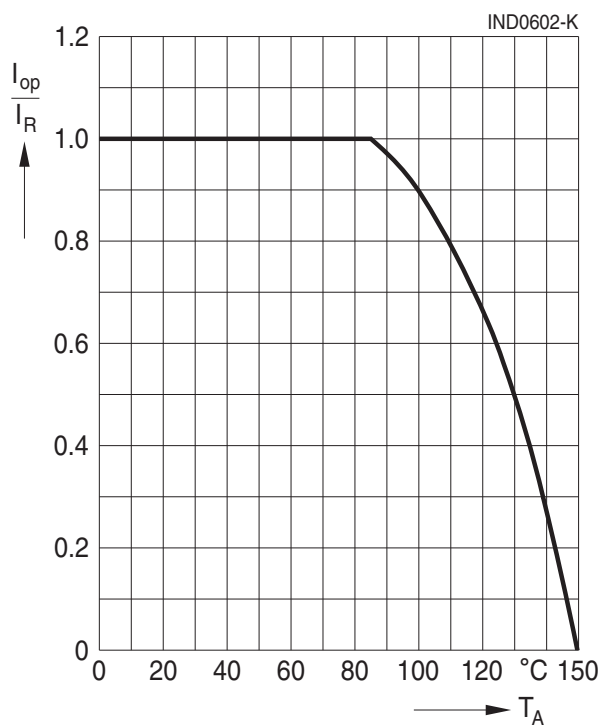
**Impedance  $|Z|$  versus frequency  $f$**   
 measured with impedance analyzer  
 Agilent 4294A, typical values at +20 °C



**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.  
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.

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