



## **SMT power inductors**

Size 7.3 Δ 7.3 Δ 3.5 (mm)

**Series/Type:**            **B82472G4**

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

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**SMD**

Rated inductance 1 ... 1000  $\mu$ H  
 Rated current 0.18 ... 3.45 A


**Construction**

- Ferrite core
- Magnetically shielded
- Winding: enamel copper wire
- Winding soldered to terminals

**Features**

- Temperature range up to +125 °C
- High rated current
- Low DC resistance
- Suitable for lead-free reflow soldering
- RoHS-compatible

**Applications**

- Filtering of supply voltages
- Coupling/decoupling
- DC/DC converters
- Industrial electronics
- Consumer electronics

**Terminals**

- Base material CuSn6P
- Layer composition Ni, Sn (lead-free)
- Electro-plated

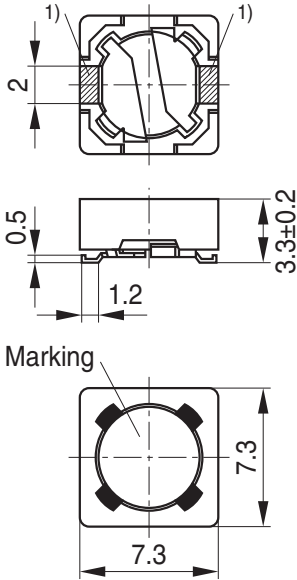
**Marking**

- Marking on component:  
 L value ( $\sigma$ H, coded),  
 manufacturing date (YWWD)
- Minimum data on reel:  
 Manufacturer, ordering code, L value,  
 quantity, date of packing

**Delivery mode and packing unit**

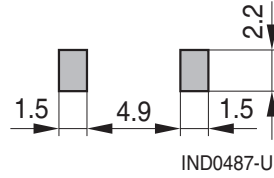
- 16-mm blister tape, wound on 330-mm  $\therefore$  reel
- Packing unit: 1000 pcs./reel

## Dimensional drawing and layout recommendation



1) Soldering area

IND0486-L-E

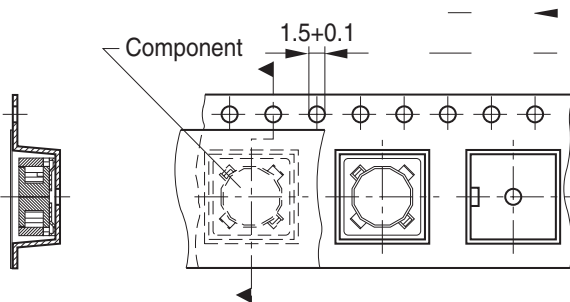


Dimensions in mm

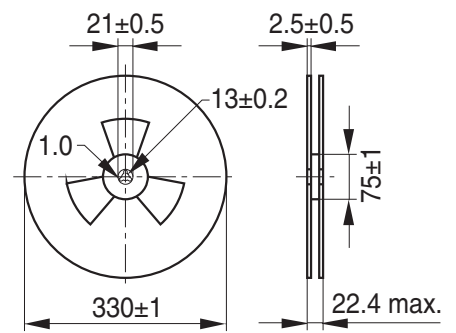
Component tolerances  $\pm 0.2$  mm unless otherwise noted.

## Taping and packing

Blister tape



Reel



IND0347-5

Dimensions in mm

**SMD**
**Technical data and measuring conditions**

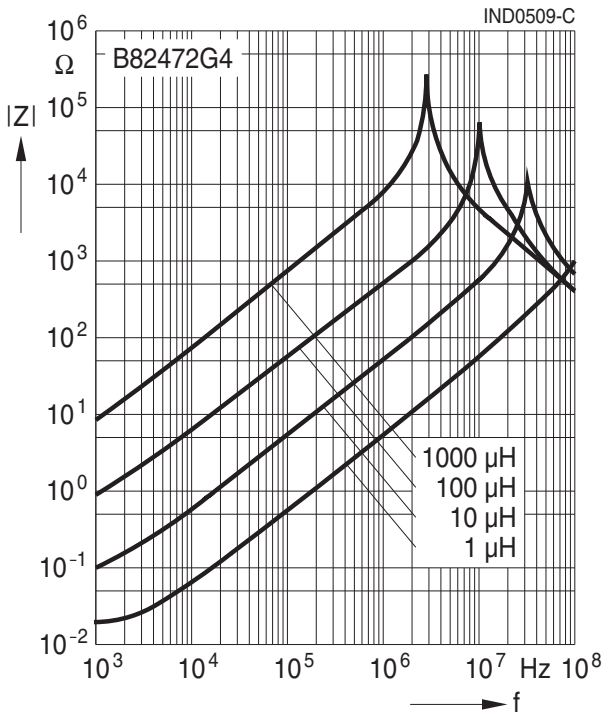
Rated inductance $L_R$	Measured with LCR meter Agilent 4284A at frequency $f_L$ , 0.1 V, +20 °C
Rated temperature $T_R$	+85 °C
Rated current $I_R$	Max. permissible DC with temperature increase of $\Delta 40$ K at rated temperature
Saturation current $I_{sat}$	Max. permissible DC with inductance decrease $\pm L/L_0$ 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, 10 s (based on IEC 60068-2-58)
Climatic category	55/125/56 (to IEC 60068-1)
Storage conditions	Mounted: -55 °C ... +125 °C Packaged: -25 °C ... +40 °C, $\Delta 75\%$ RH
Weight	Approx. 1.5 g

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

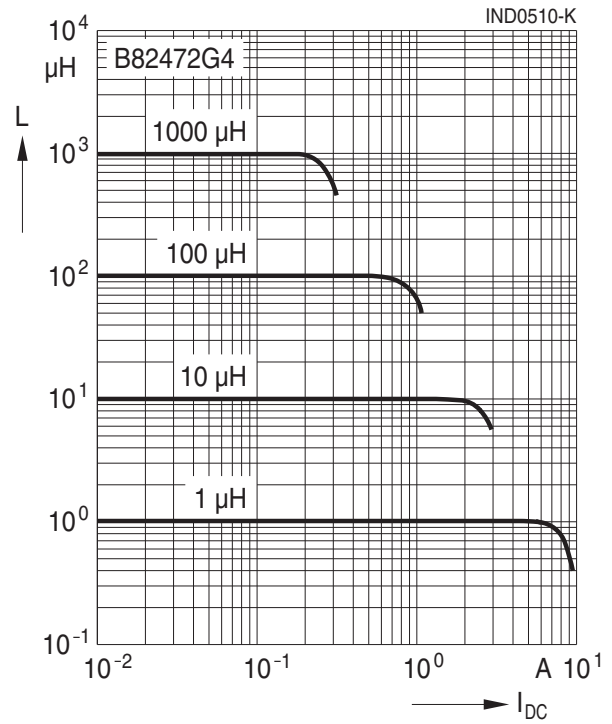
$L_R$ $\sigma_H$	Tolerance	$f_L$ MHz	$I_R$ A	$I_{sat}$ A	$R_{max}$ T	Ordering code
1.0	$\pm 20\% \triangleq M$	0.1	3.45	2.90	0.018	B82472G4102M000
1.5		0.1	3.35	2.60	0.020	B82472G4152M000
2.2		0.1	2.90	2.20	0.025	B82472G4222M000
3.3		0.1	2.60	1.90	0.035	B82472G4332M000
4.7		0.1	2.30	1.70	0.043	B82472G4472M000
6.8		0.1	2.05	1.40	0.055	B82472G4682M000
10		0.1	1.70	1.34	0.08	B82472G4103M000
15		0.1	1.40	1.10	0.12	B82472G4153M000
22		0.1	1.10	0.90	0.20	B82472G4223M000
33		0.1	0.94	0.72	0.25	B82472G4333M000
47		0.1	0.86	0.65	0.30	B82472G4473M000
56		0.1	0.84	0.63	0.31	B82472G4563M000
68		0.1	0.69	0.60	0.46	B82472G4683M000
100		0.1	0.56	0.45	0.70	B82472G4104M000
150		0.1	0.49	0.35	0.80	B82472G4154M000
180		0.1	0.47	0.32	0.95	B82472G4184M000
220		0.1	0.40	0.30	1.10	B82472G4224M000
330		0.1	0.29	0.26	1.98	B82472G4334M000
470		0.1	0.26	0.24	2.70	B82472G4474M000
680	0.1	0.23	0.19	3.65	B82472G4684M000	
820	0.1	0.20	0.17	3.90	B82472G4824M000	
1000	0.1	0.18	0.13	4.78	B82472G4105M000	

Sample kit available. Ordering code: B8247XX001  
 For more information refer to chapter "Sample kits".

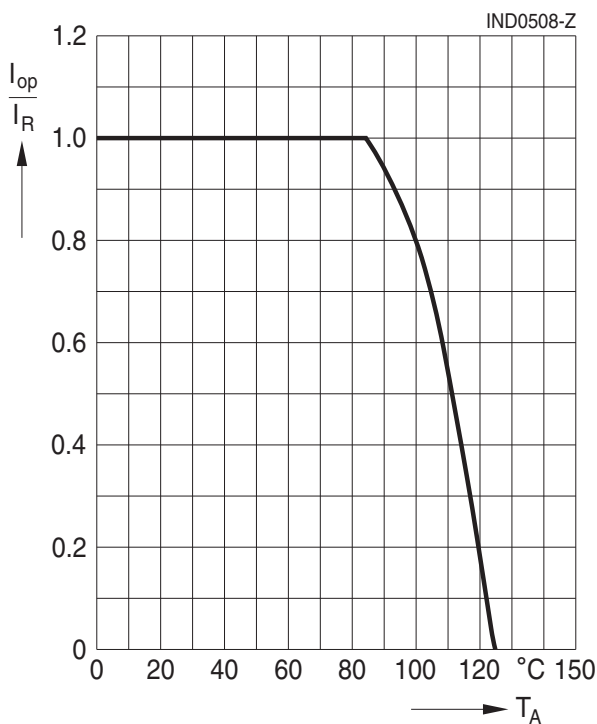
**Impedance  $|Z|$  versus frequency  $f$**   
 measured with impedance analyzer  
 Agilent 4294A, typical values at +20 °C



**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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Release 2018-10