



## **SMT power inductors**

Size 12.8 × 12.8 × 8.0 (mm)

**Series/Type:**            **B82477G4**

**Date:**                    **March 2008**

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Rated inductance 1  $\mu\text{H}$  to 1000  $\mu\text{H}$   
Rated current 0.55 A to 9.8 A



**Construction**

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

**Features**

- Temperature range up to 125 °C
- Very high rated current
- Low DC resistance
- Suitable for lead-free reflow soldering
- Qualification based on AEC-Q200
- RoHS-compatible

**Applications**

- DC/DC converters
- EDP (Electronic Data Processing)
- Consumer electronics
- Industrial electronics

**Terminals**

- Base material  
Cu ( $L \leq 10 \mu\text{H}$ ), CuSn6P ( $L \geq 15 \mu\text{H}$ )
- Layer composition Ni, Sn (lead-free)
- Electro-plated

**Marking**

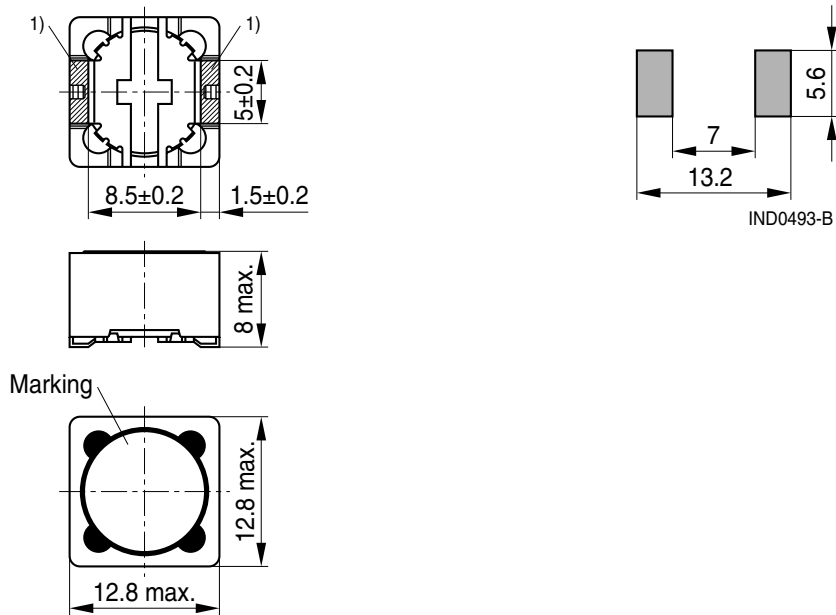
- Marking on component:  
Manufacturer, L value ( $\mu\text{H}$ , coded),  
manufacturing date (YWWD)
- Minimum data on reel:  
Manufacturer, ordering code, L value,  
quantity, date of packing

**Delivery mode and packing unit**

- 24-mm blister tape, wound on 330-mm  $\varnothing$  reel
- Packing unit: 400 pcs./reel

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**Dimensional drawing and layout recommendation**



1) Soldering area

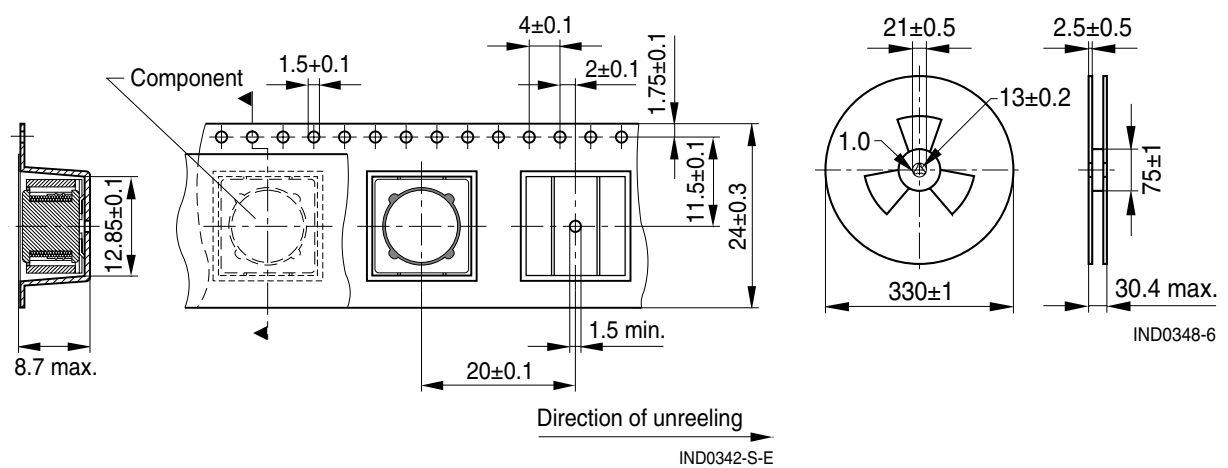
Dimensions in mm

IND0492-V-E

**Taping and packing**

Blister tape

Reel



Dimensions in mm

IND0342-S-E

IND0348-6

**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 $\leq 40$ 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 ±5) °C, (5 ±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, $\leq 75\%$ RH
Weight	Approx. 4 g

**Characteristics and ordering codes**

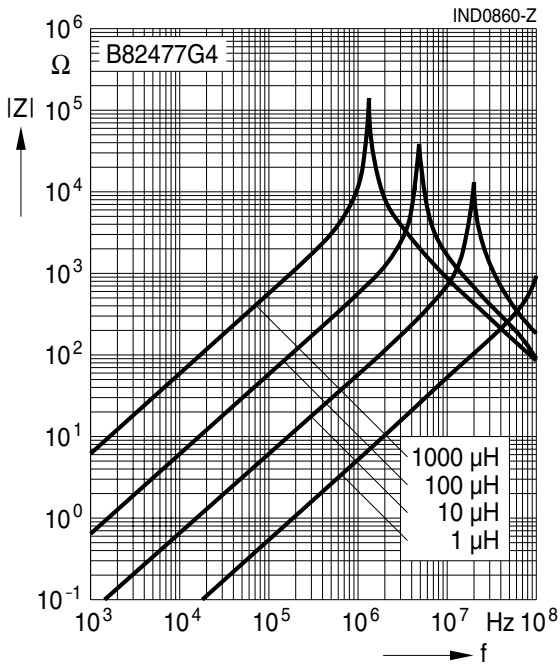
$L_R$ $\mu\text{H}$	Tolerance	$f_L$ MHz	$I_R$ A	$I_{\text{sat}}$ A	$R_{\text{max}}$ $\Omega$	Ordering code
1.0	$\pm 20\% \triangleq M$	0.1	9.80	15.00	0.0070	B82477G4102M000
2.2		0.1	8.00	11.00	0.0100	B82477G4222M000
3.9		0.1	7.50	9.50	0.0125	B82477G4392M000
4.7		0.1	6.80	8.60	0.0140	B82477G4472M000
5.6		0.1	6.70	8.40	0.0142	B82477G4562M000
6.8		0.1	6.50	7.30	0.0185	B82477G4682M000
10		0.1	5.40	6.40	0.022	B82477G4103M000
15		0.1	4.50	5.25	0.027	B82477G4153M000
22		0.1	3.60	4.25	0.038	B82477G4223M000
33		0.1	3.00	3.50	0.053	B82477G4333M000
47		0.1	2.50	3.00	0.082	B82477G4473M000
68		0.1	2.10	2.45	0.120	B82477G4683M000
82		0.1	1.90	2.25	0.145	B82477G4823M000
100		0.1	1.70	1.95	0.165	B82477G4104M000
150		0.1	1.42	1.70	0.225	B82477G4154M000
220		0.1	1.16	1.35	0.380	B82477G4224M000
330		0.1	0.95	1.15	0.600	B82477G4334M000
470		0.1	0.80	0.95	0.790	B82477G4474M000
680		0.1	0.68	0.78	1.24	B82477G4684M000
1000		0.1	0.55	0.65	1.68	B82477G4105M000

Sample kit available. Ordering code: B8247XX001

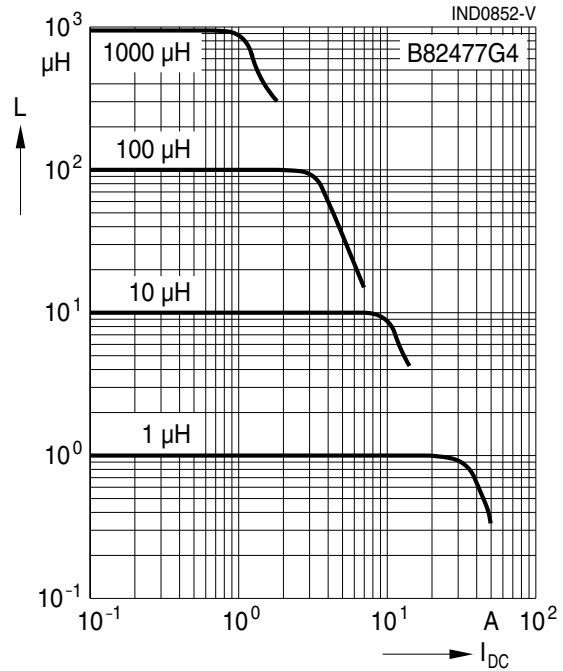
For more information refer to chapter "Sample kits".

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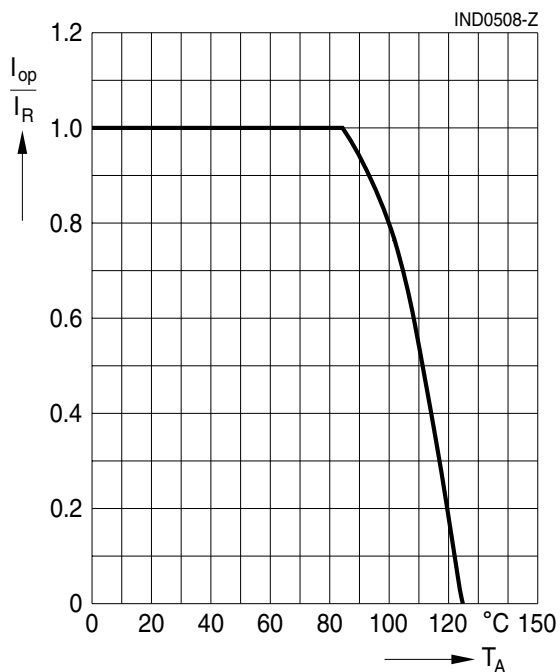
**Impedance  $|Z|$  versus frequency  $f$**   
 measured with impedance analyzer  
 Agilent 4294A, typical values at 20 °C



**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.

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