



## **SMT power inductors**

Size  $12.95 \times 9.4 \times 5.08$  (mm)

**Series/Type:**            **B82476A1**  
**Date:**                     March 2008

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SMD

Rated inductance 1  $\mu\text{H}$  to 1000  $\mu\text{H}$   
Rated current 0.3 A to 6.8 A



### Construction

- Ferrite core
- Winding: enamel copper wire
- Winding soldered to terminals
- Plastic terminal carrier

### 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
- Qualification based on AEC-Q200
- RoHS-compatible

### Applications

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

### Terminals

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

### Marking

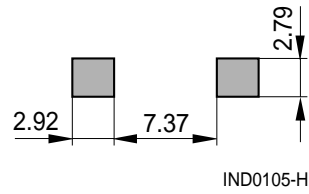
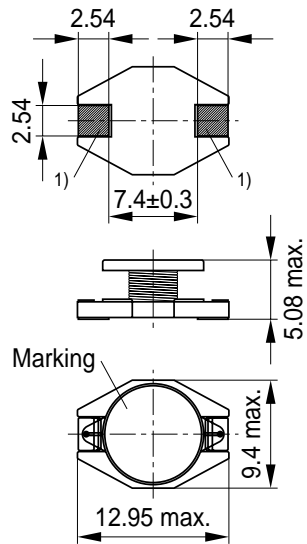
- Marking on component:  
Manufacturer, L value ( $\mu\text{H}$ , coded),  
manufacturing date (YWWDD)
- Minimum marking on reel:  
Manufacturer, ordering code, L value,  
quantity, date of packing

### Delivery mode and packing unit

- 24-mm blister tape, wound on 330-mm  $\varnothing$  reel
- Packing unit: 750 pcs./reel

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**Dimensional drawing and layout recommendation**



Dimensions in mm

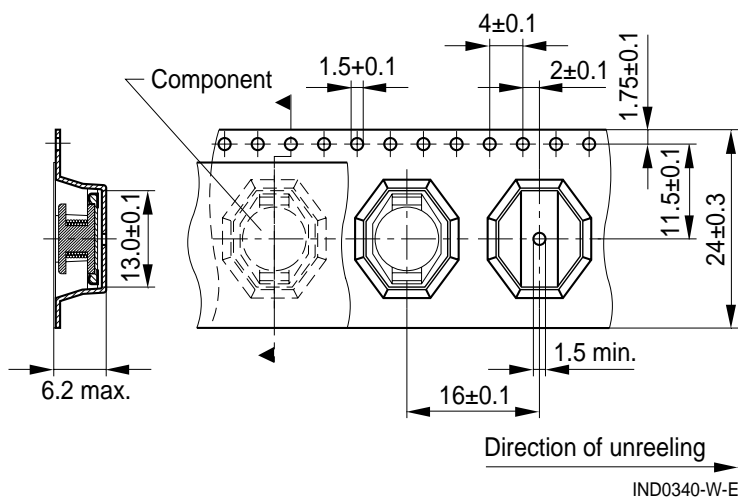
Component tolerances ±0.2 mm unless otherwise noted.

1) Soldering area

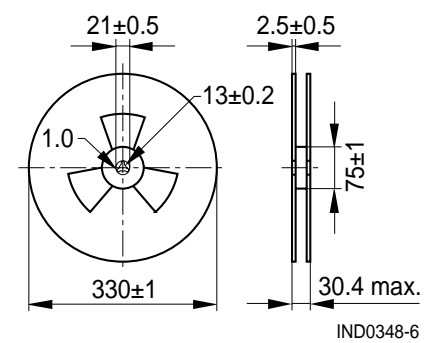
IND0489-B-E

**Taping and packing**

Blister tape



Reel



Dimensions in mm

**Technical data and measuring conditions**

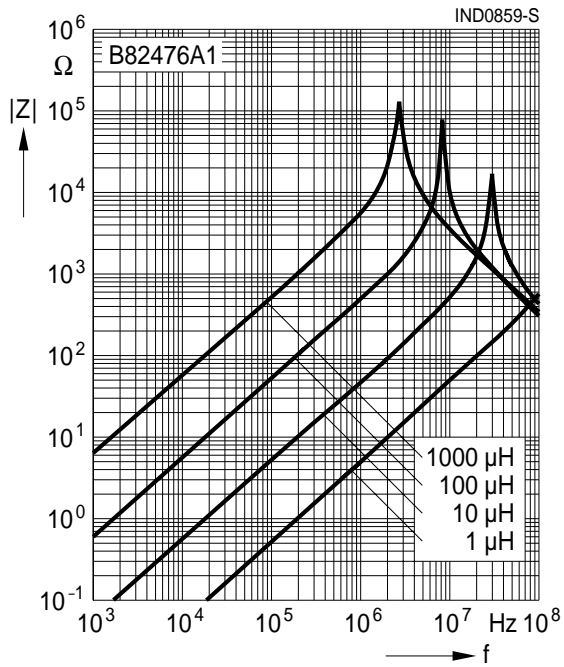
Rated inductance $L_R$	Measured with LCR meter Agilent 4284A at frequency $f_L$ , 0.1 V, 20 °C
Rated temperature $T_R$	85 °C
Rated current $I_R$	Max. permissible DC with temperature increase of $\leq 40$ K at rated temperature
Saturation current $I_{sat}$	Max. permissible DC with inductance decrease $\Delta L/L_0$ of approx. 10%
DC resistance $R_{max}$	Measured at 20 °C
Solderability (lead-free)	Dip and look method Sn95.5Ag3.8Cu0.7: (245 $\pm$ 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 020C)
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. 2 g

**Characteristics and ordering codes**

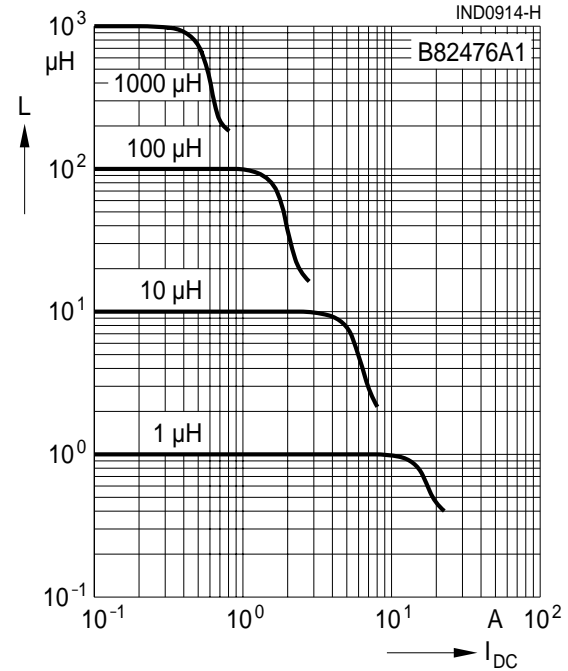
$L_R$ $\mu\text{H}$	Tolerance	$f_L$ MHz	$I_R$ A	$I_{sat}$ A	$R_{max}$ $\Omega$	Ordering code
1.0	$\pm 20\% \triangleq M$	0.1	6.8	9.0	0.0080	B82476A1102M000
1.5		0.1	6.4	8.0	0.0090	B82476A1152M000
2.2		0.1	6.1	7.0	0.0105	B82476A1222M000
3.3		0.1	5.4	6.4	0.0135	B82476A1332M000
4.7		0.1	4.8	5.4	0.0165	B82476A1472M000
6.8		0.1	4.4	4.6	0.0210	B82476A1682M000
10		0.1	3.9	3.8	0.0270	B82476A1103M000
15		0.1	3.1	3.0	0.0400	B82476A1153M000
22		0.1	2.7	2.6	0.0500	B82476A1223M000
33		0.1	2.1	2.0	0.0880	B82476A1333M000
47		0.1	1.8	1.6	0.120	B82476A1473M000
68		0.1	1.5	1.4	0.160	B82476A1683M000
100		0.1	1.3	1.2	0.230	B82476A1104M000
150		0.1	1.0	1.0	0.330	B82476A1154M000
220		0.1	0.8	0.8	0.530	B82476A1224M000
330		0.1	0.6	0.6	0.810	B82476A1334M000
470		0.1	0.5	0.5	1.10	B82476A1474M000
680		0.1	0.4	0.4	1.60	B82476A1684M000
1000		0.1	0.3	0.3	2.15	B82476A1105M000

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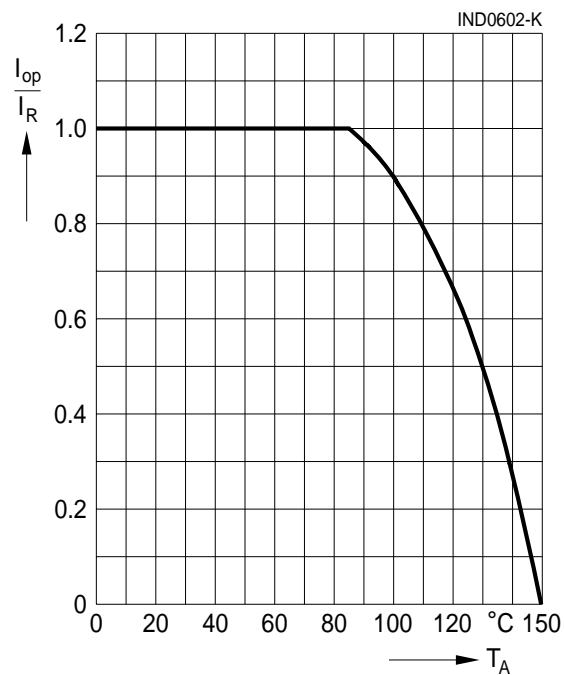
**Impedance  $|Z|$  versus frequency  $f$**   
 measured with impedance analyzer  
 Agilent 4294A, typical values at 20° C



**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  $T_R = 85^\circ\text{C}$ )



## 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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