SMT power inductors

Size 12.95 × 9.4 × 5.08 (mm)

Series/Type: **B82476B1**

Date: March 2008

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Rated inductance 1 µH to 1000 µH
Rated current 0.3 A to 6.8 A



Construction

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

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

Marking

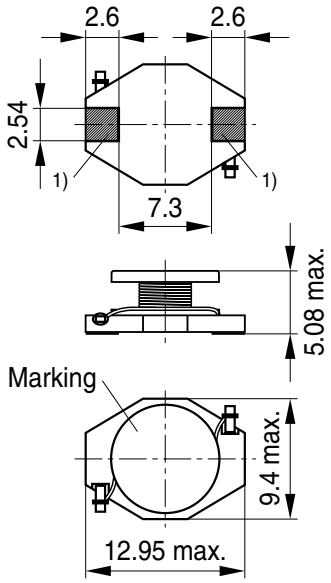
- Marking on component:
  L value (µH, coded), manufacturing date (YWWD)
- Minimum data on reel:
  Manufacturer, ordering code, L value, quantity, date of packing

Delivery mode and packing unit

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

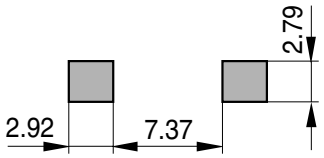
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Dimensional drawing and layout recommendation



1) Soldering area

IND0837-H-E



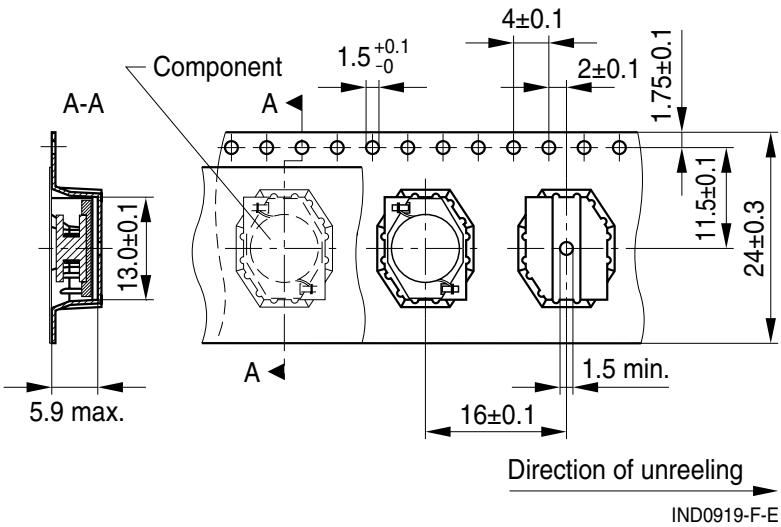
IND0105-H

Dimensions in mm

Component tolerances ±0.2 mm unless otherwise noted.

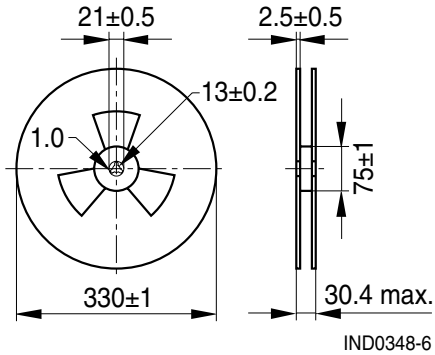
Taping and packing

Blister tape



IND0919-F-E

Reel



IND0348-6

Dimensions in mm

Technical data and measuring conditions

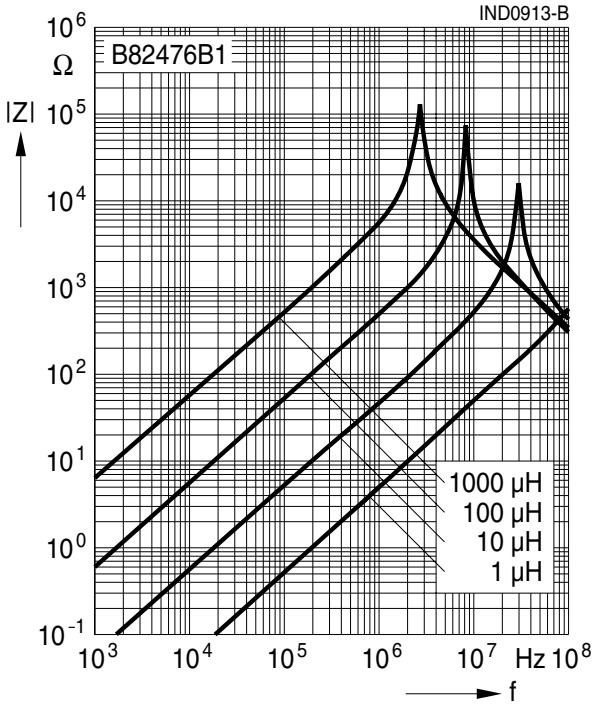
Rated inductance L_R	Measured with LCR meter 4284A at frequency f_L, 0.1 V, 20 °C
Rated temperature T_R	85 °C
Rated current I_R	Max. permissible DC with temperature increase of ≤ 40 K at rated temperature
Saturation current I_{sat}	Max. permissible DC with inductance decrease $\Delta L/L_0$ of approx. 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 ≥ 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, ≤ 75% RH
Weight	Approx. 2 g

Characteristics and ordering codes

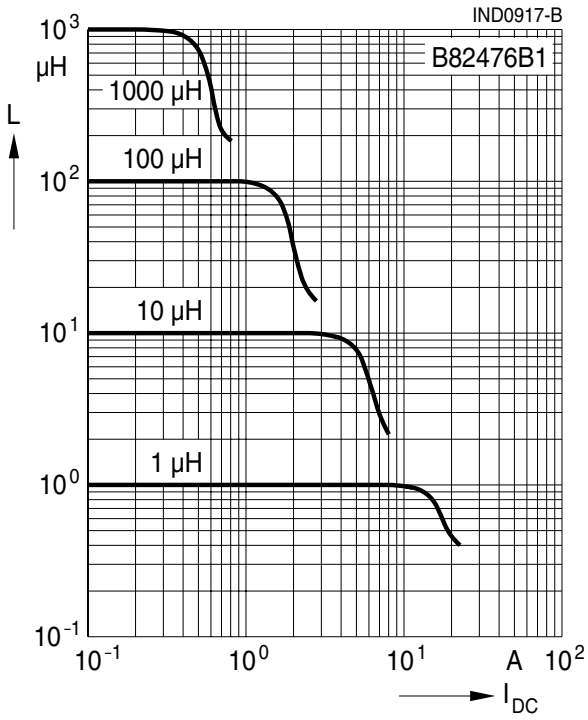
L_R µH	Tolerance	f_L MHz	I_R A	I_{sat} A	R_{max} Ω	Ordering code
1.0	±20% ≙ M	0.1	6.8	9.0	0.0080	B82476B1102M000
1.5		0.1	6.4	8.0	0.0090	B82476B1152M000
2.2		0.1	6.1	7.0	0.0105	B82476B1222M000
3.3		0.1	5.4	6.4	0.0135	B82476B1332M000
4.7		0.1	4.8	5.4	0.0165	B82476B1472M000
6.8		0.1	4.4	4.6	0.0210	B82476B1682M000
10		0.1	3.9	3.8	0.0270	B82476B1103M000
15		0.1	3.1	3.0	0.0400	B82476B1153M000
22		0.1	2.7	2.6	0.0500	B82476B1223M000
33		0.1	2.1	2.0	0.0880	B82476B1333M000
47		0.1	1.8	1.6	0.120	B82476B1473M000
68		0.1	1.5	1.4	0.160	B82476B1683M000
100		0.1	1.3	1.2	0.230	B82476B1104M000
150		0.1	1.0	1.0	0.330	B82476B1154M000
220		0.1	0.8	0.8	0.530	B82476B1224M000
330		0.1	0.6	0.6	0.810	B82476B1334M000
470		0.1	0.5	0.5	1.100	B82476B1474M000
680		0.1	0.4	0.4	1.600	B82476B1684M000
1000		0.1	0.3	0.3	2.150	B82476B1105M000

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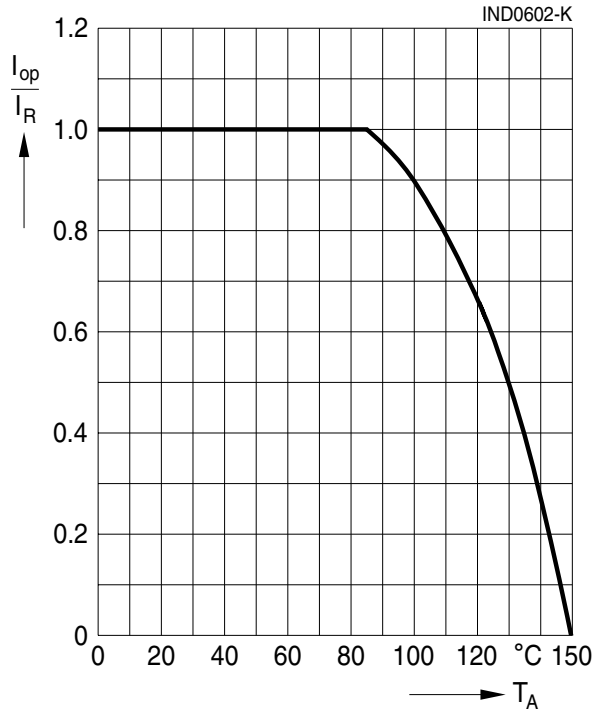
Impedance |Z| versus frequency f
measured with impedance analyzer Agilent 4294A, typical values at 20 °C



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.

Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application.**

   As a rule, EPCOS is either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether an EPCOS product with the properties described in the product specification is suitable for use in a particular customer application.

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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