



SMT power inductors

Size 12.95 × 9.4 × 5.08 (mm)

Series/Type: **B82476A1**

Date: **March 2008**

SMD

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

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

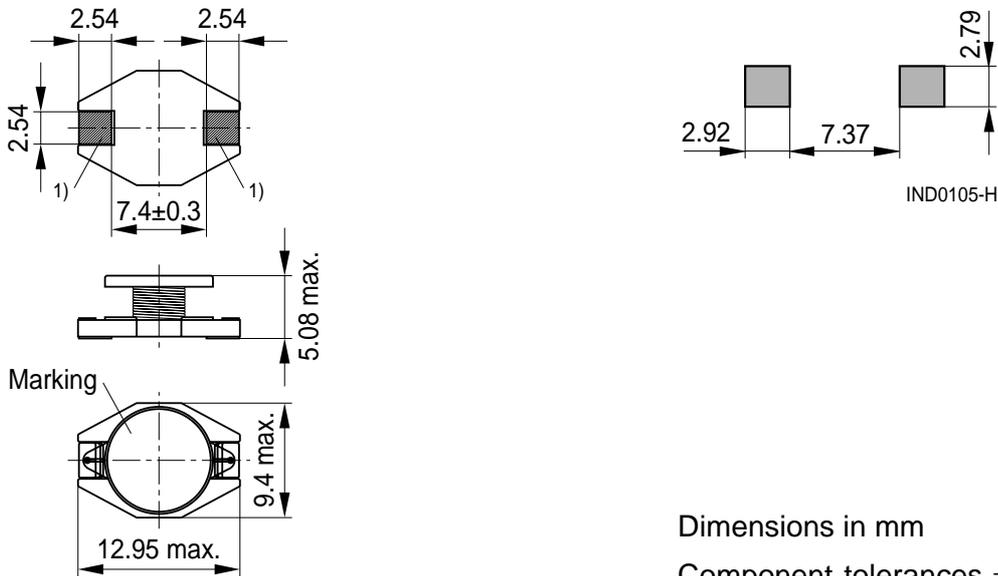
- Marking on component:
Manufacturer, L value (μH , coded),
manufacturing date (YWWDD)
- Minimum marking on reel:
Manufacturer, ordering code, L value,
quantity, date of packing

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



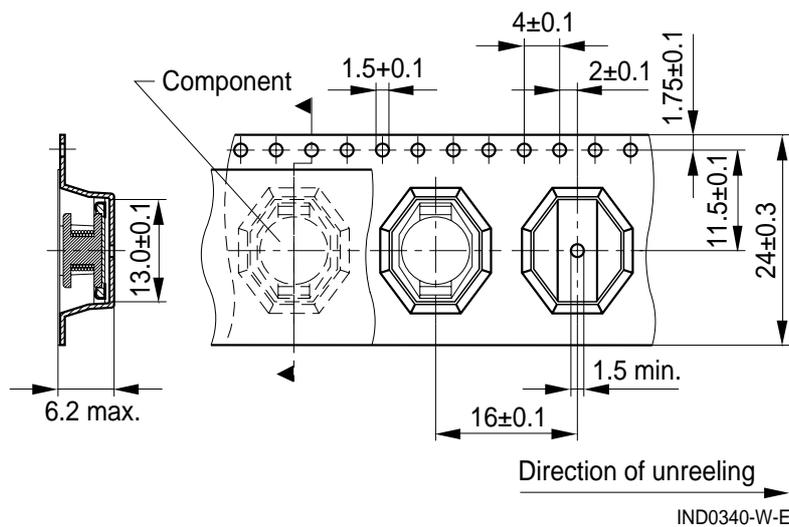
Dimensions in mm
 Component tolerances ±0.2 mm unless otherwise noted.

1) Soldering area

IND0489-B-E

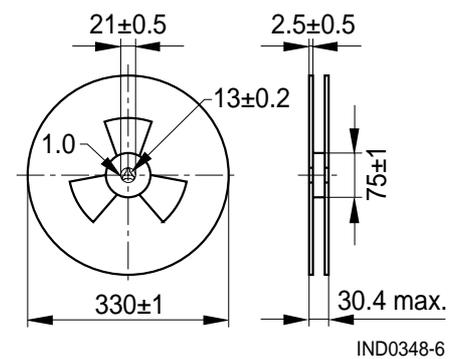
Taping and packing

Blister tape



IND0340-W-E

Reel



IND0348-6

Dimensions in mm

Technical data and measuring conditions

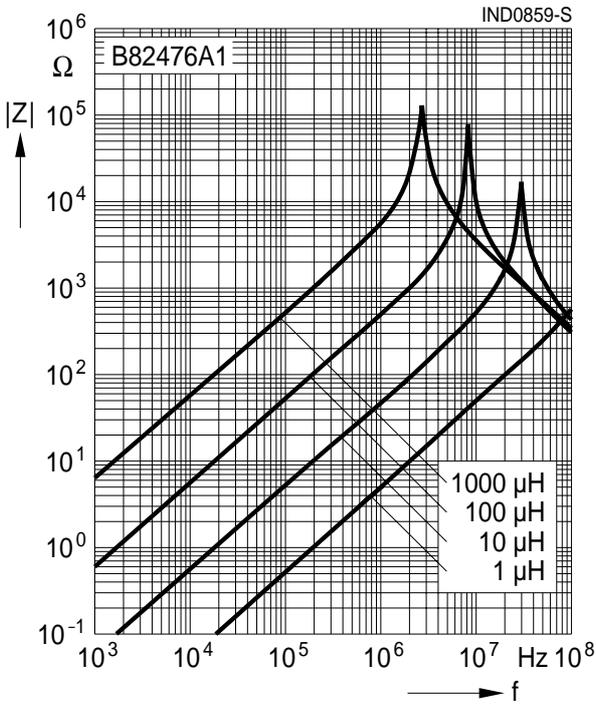
| | |
|------------------------------|---|
| Rated inductance L_R | Measured with LCR meter Agilent 4284A at frequency f_L , 0.1 V, 20 °C |
| Rated temperature T_R | 85 °C |
| Rated current I_R | Max. permissible DC with temperature increase of ≤ 40 K at rated temperature |
| Saturation current I_{sat} | 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, 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

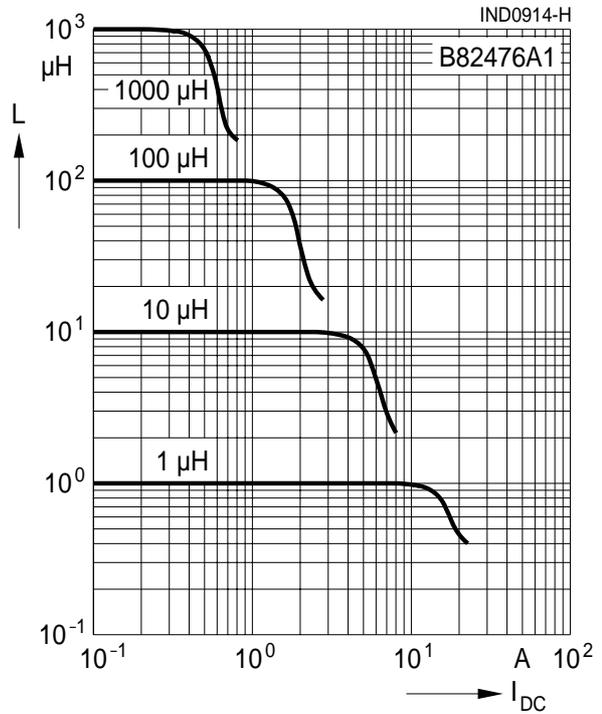
| L_R μH | Tolerance | f_L MHz | I_R A | I_{sat} A | R_{max} Ω | Ordering code |
|------------------------|-------------------------|--------------|------------|----------------|-----------------------|-----------------|
| 1.0 | $\pm 20\% \triangleq M$ | 0.1 | 6.8 | 9.0 | 0.0080 | B82476A1102M000 |
| 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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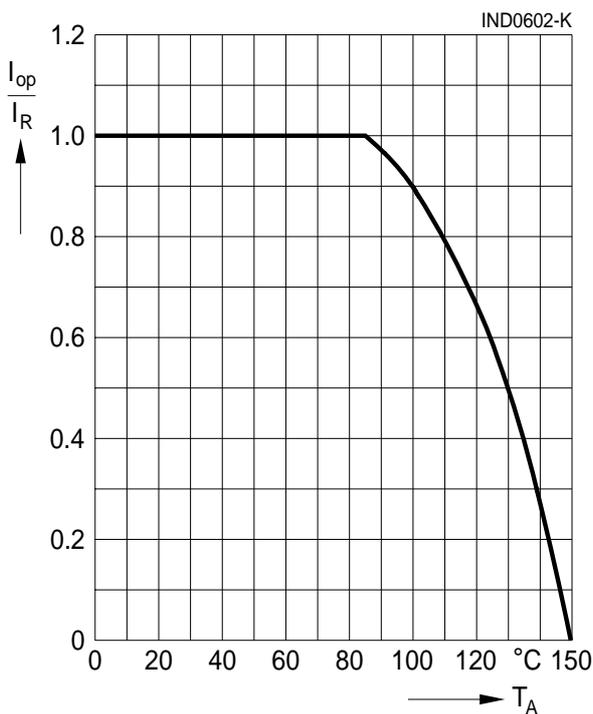
Impedance $|Z|$ versus frequency f
 measured with impedance analyzer
 Agilent 4294A, typical values at 20 °C



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 $T_R = 85$ °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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