

SMT power inductors

B82472P6

Size 7.3 x 7.3 x 4.5 (mm)

SMD

Rated inductance 1 ... 1000 μ H

Rated current 0.2 ... 3.6 A

Construction

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



Features

- High mechanical stability
- Temperature range up to +150 °C
- High rated current
- Low DC resistance
- Suitable for lead-free reflow soldering as referenced in JEDEC J-STD 020D
- Qualified to AEC-Q200
- RoHS-compatible

Applications

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

Terminals

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

Marking

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

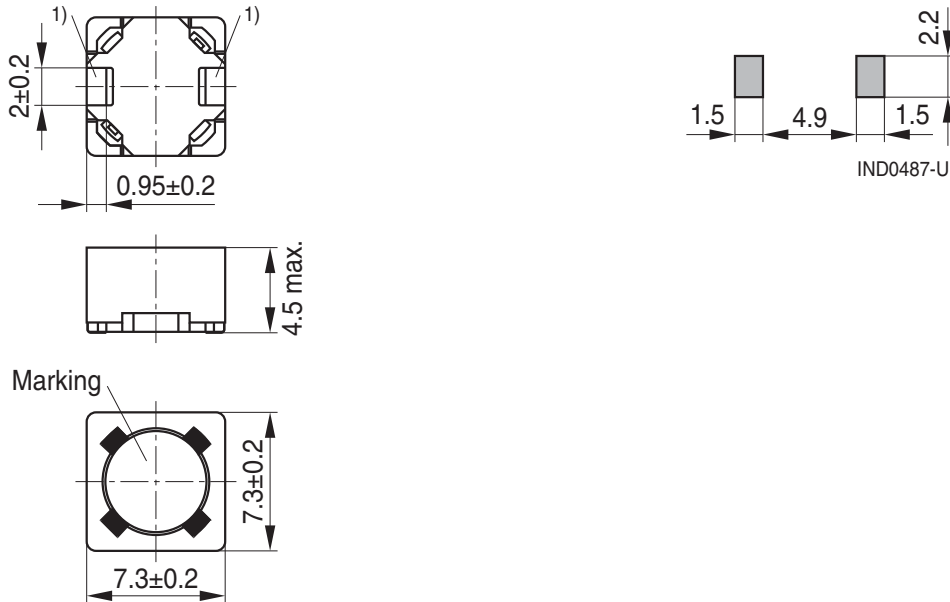
Delivery mode and packing unit

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

Size 7.3 x 7.3 x 4.5 (mm)

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Dimensional drawing and layout recommendation



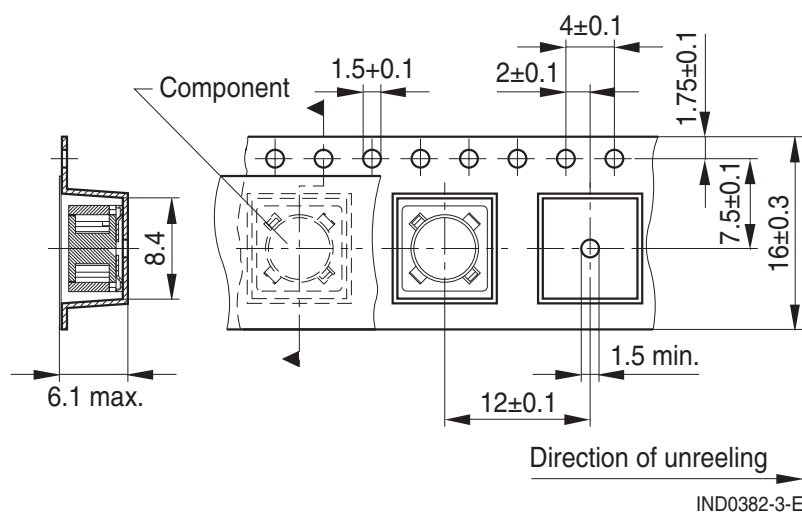
1) Soldering area

IND0835-W-E

Dimensions in mm

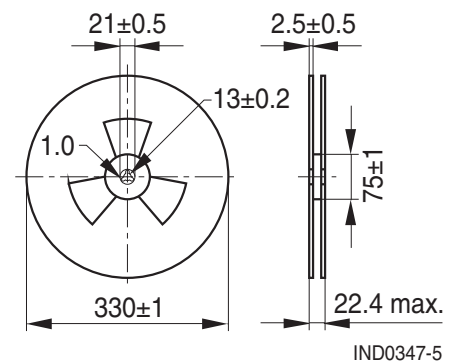
Taping and packing

Blister tape



Dimensions in mm

Reel



IND0347-5

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Size 7.3 x 7.3 x 4.5 (mm)
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Technical data and measuring conditions

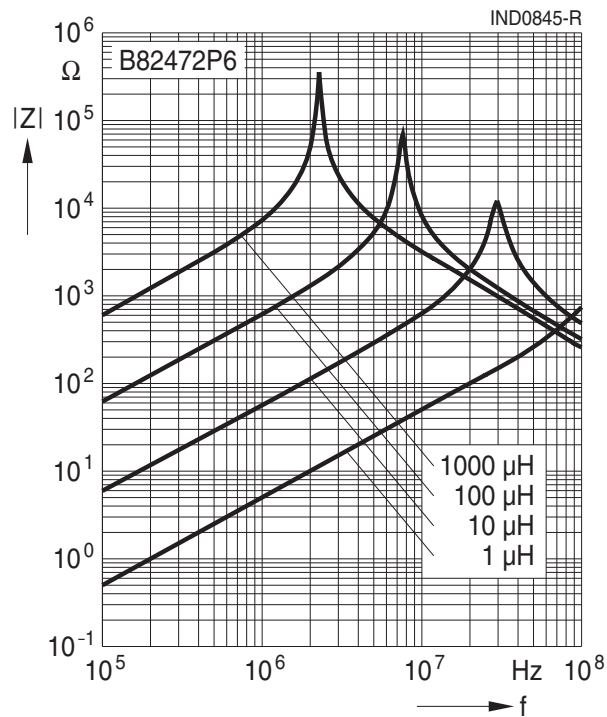
Rated inductance L_R	Measured with LCR meter Agilent 4284A at frequency f_L , 0.1 V, +20 °C
Rated temperature T_R	+85 °C
Rated current I_R	Max. permissible DC with temperature increase of ≤ 40 K at rated temperature
Saturation current I_{sat}	Max. permissible DC with inductance decrease $\Delta L/L_0$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

Characteristics and ordering codes

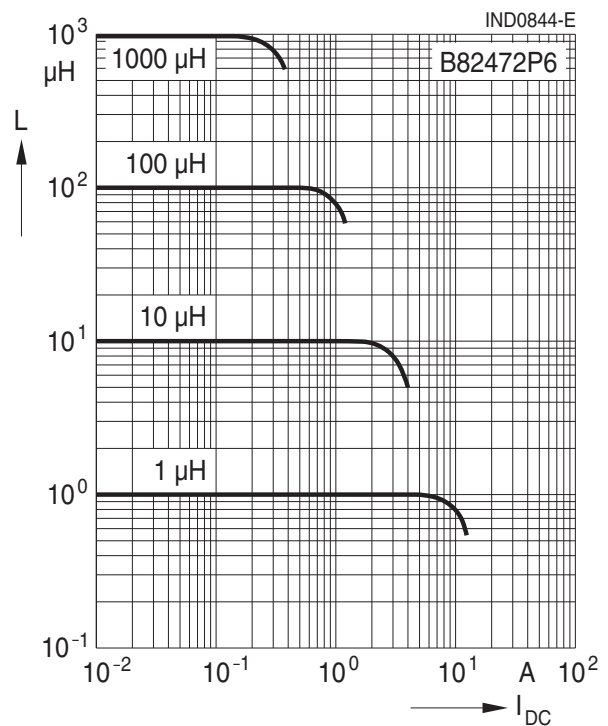
L_R μH	Tolerance	f_L MHz	I_R A	I_{sat} A	R_{max} Ω	Ordering code
1.0	$\pm 20\% \triangleq M$	0.1	3.60	3.30	0.017	B82472P6102M000
1.5		0.1	3.40	3.00	0.019	B82472P6152M000
2.2		0.1	3.00	2.80	0.022	B82472P6222M000
3.3		0.1	2.85	2.50	0.025	B82472P6332M000
4.7		0.1	2.50	2.00	0.033	B82472P6472M000
6.8		0.1	2.15	1.70	0.042	B82472P6682M000
10		0.1	1.90	1.40	0.055	B82472P6103M000
15		0.1	1.53	1.35	0.080	B82472P6153M000
22		0.1	1.45	1.30	0.091	B82472P6223M000
33		0.1	1.15	1.05	0.15	B82472P6333M000
47		0.1	1.00	0.90	0.20	B82472P6473M000
68		0.1	0.82	0.68	0.26	B82472P6683M000
100		0.1	0.67	0.55	0.39	B82472P6104M000
150		0.1	0.53	0.43	0.58	B82472P6154M000
220		0.1	0.43	0.36	0.88	B82472P6224M000
330		0.1	0.33	0.30	1.70	B82472P6334M000
470		0.1	0.29	0.25	2.00	B82472P6474M000
680		0.1	0.25	0.20	2.75	B82472P6684M000
1000		0.1	0.20	0.15	3.85	B82472P6105M000

SMD

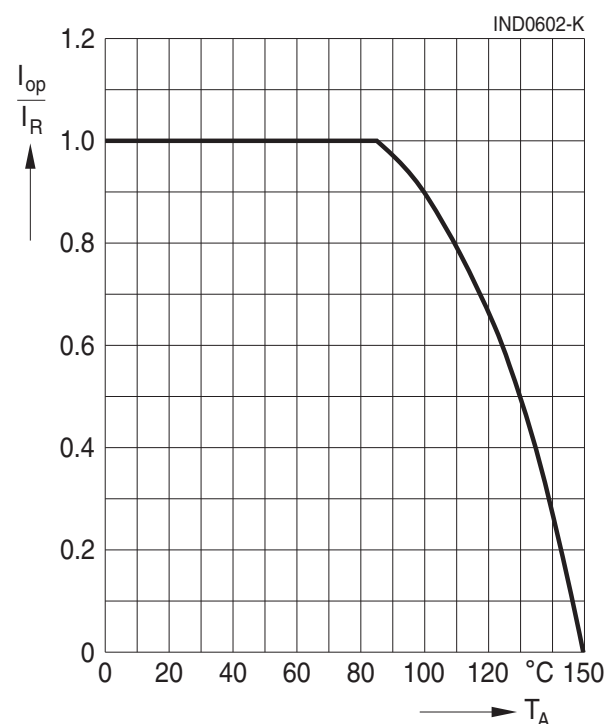
Impedance $|Z|$ versus frequency f
measured with impedance analyzer
Agilent 4294A, typical values at +20 °C



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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The following applies to all products named in this publication:

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