SMT power inductors

Size 12.5 x 12.5 x 6 (mm)

Series/Type: **B82477P2**
Ordering code:

Date: June 2012

Preliminary data

Rated inductance 1 ... 1000 µH
Rated current 0.53 ... 9.25 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
- Qualification to AEC-Q200
- RoHS-compatible

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

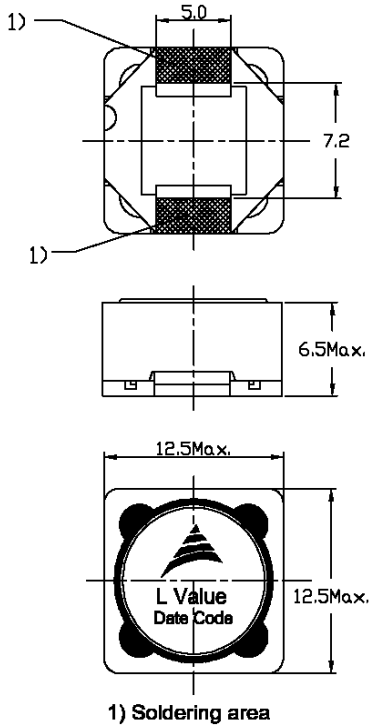
Terminals
- Base material
  Cu (L ≤ 10µH) CuSn6P (L ≥ 15µH)
- Layer composition Ni, Sn (lead-free)
- Electro-plated

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

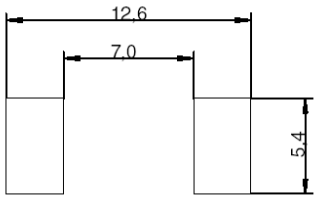
Delivery mode and packing unit
- 24-mm blister tape, wound on 330-mm reel
- Packing unit: 600 pcs./reel

Preliminary data

Dimensional drawing and layout recommendation



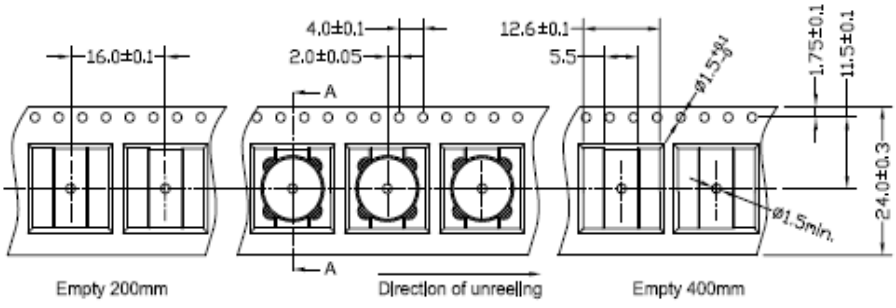
1) Soldering area

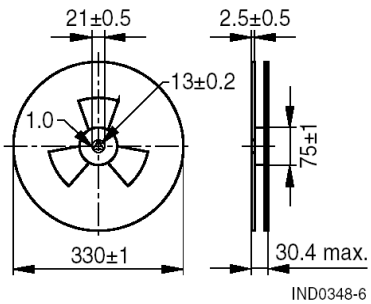


Dimensions in mm

Taping and packing

Blister tape and Reel





Dimensions in 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_{typ}	Measured at +20 °C
Solderability (lead-free)	Dip and look method Sn95.5Ag3.8Cu0.7: +(245 ±5) °C, (3 ±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 020D)
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. 3.3 g

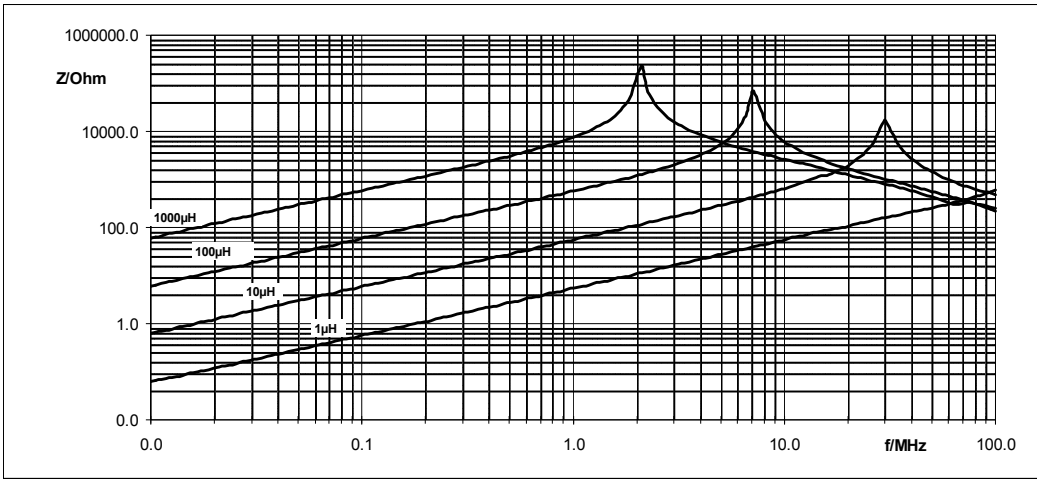
Preliminary data

Characteristics and ordering codes

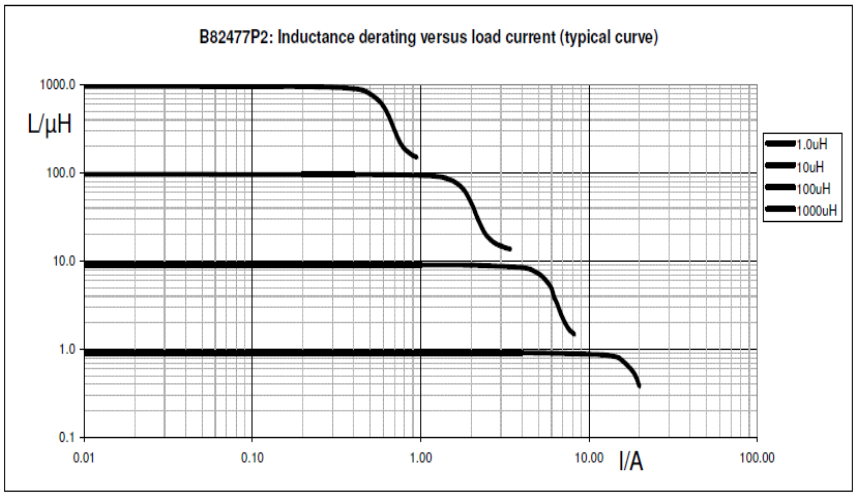
L_R	Tolerance	f_L	I_R	I_{sat}	R_{max}	Ordering code
µH		MHz	A	A	Ω	
1.0	20% = M	0.1	9.25	10.0	0,008	B82477P2102M000
1.5		0.1	8.70	8.70	0,010	B82477P2152M000
2.2		0.1	7.20	8.00	0,012	B82477P2222M000
3.3		0.1	6.70	7.20	0,014	B82477P2332M000
4.7		0.1	5.40	5.70	0,016	B82477P2472M000
6.8		0.1	4.80	4.80	0,020	B82477P2682M000
10		0.1	4.30	4.00	0,025	B82477P2103M000
15		0.1	3.70	3.30	0,030	B82477P2153M000
22		0.1	3.40	2.80	0,036	B82477P2223M000
33		0.1	2.70	2.20	0,055	B82477P2333M000
47		0.1	2.40	1.90	0,070	B82477P2473M000
68		0.1	1.85	1.50	0,110	B82477P2683M000
100		0.1	1.65	1.30	0,140	B82477P2104M000
150		0.1	1.35	1.00	0,210	B82477P2154M000
220		0.1	1.15	0.80	0,300	B82477P2224M000
330		0.1	0.95	0.68	0,460	B82477P2334M000
470		0.1	0.80	0.58	0,550	B82477P2474M000
680		0.1	0.62	0.48	1,050	B82477P2684M000
1000		0.1	0.53	0.40	1,300	B82477P2105M000

Preliminary data

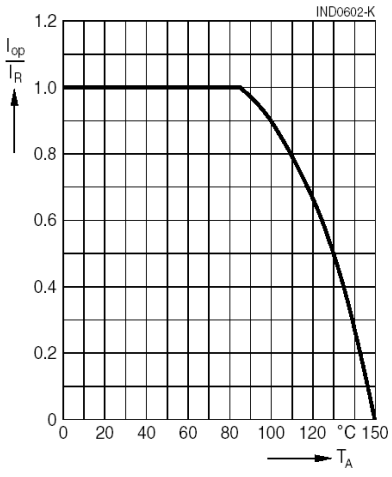
Impedance versus frequency (typical curve)



Inductance derating
versus load current (typical curve)



Current derating Iop/IR
versus ambient temperature TA
(rated temperature TR = +85 °C)



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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.

Important notes

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