



SMT power inductors

Size 10.4 x 10.0 x 5.8 (mm)

Series/Type: B82475M1

Ordering code:

Date: June 2012

SMT power inductors

Size 10.4 x 10.0 x 5.8 (mm)

B82475M1

Rated inductance 10 ... 680 μ H
Rated current 0.28... 2.6 A



Construction

- Ferrite core
- 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 CuSn6P
- Layer composition Ni, Sn (lead-free)
- Electro-plated

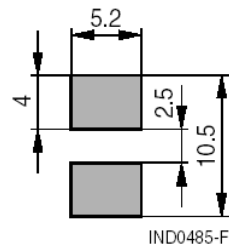
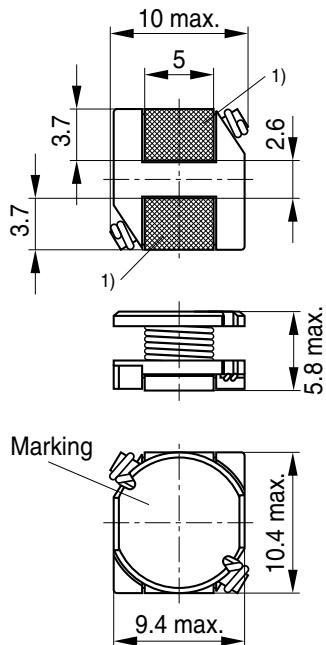
Marking

- Marking on component:
Manufacturer, letter "M", 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

- 24-mm blister tape, wound on 330-mm reel
- Packing unit: 500 pcs./reel

Dimensional drawing and layout recommendation



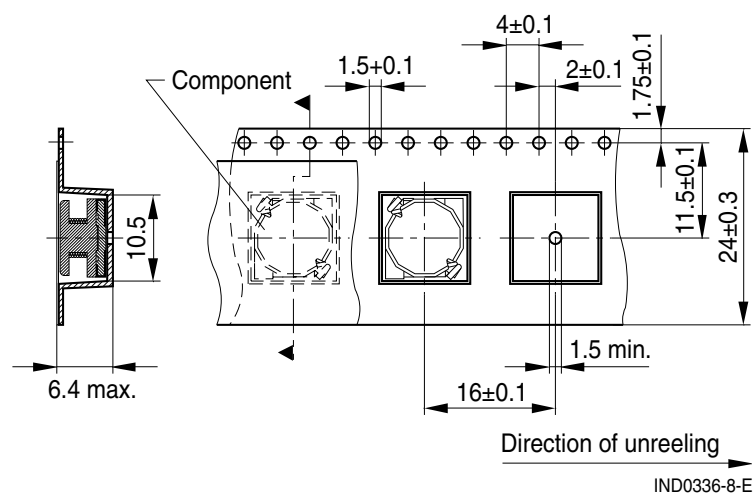
1) Soldering area

IND0484-A-E

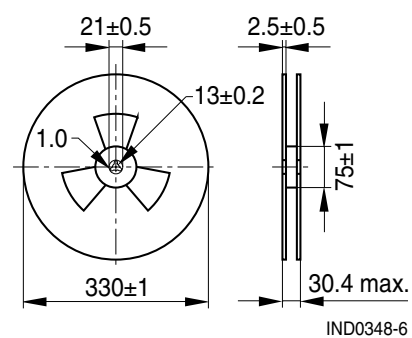
Dimensions in mm

Taping and packing

Blister tape



Reel



Dimensions in mm

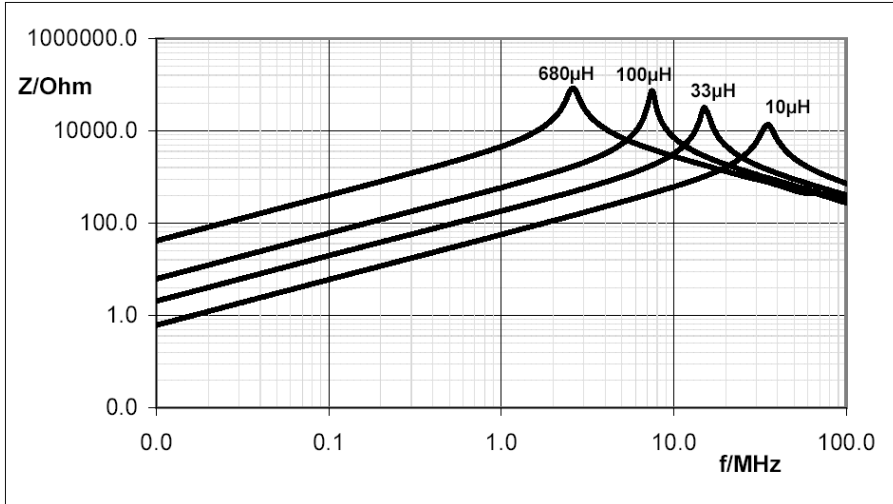
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Technical data and measuring conditions

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 \pm 5) °C, (3 \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

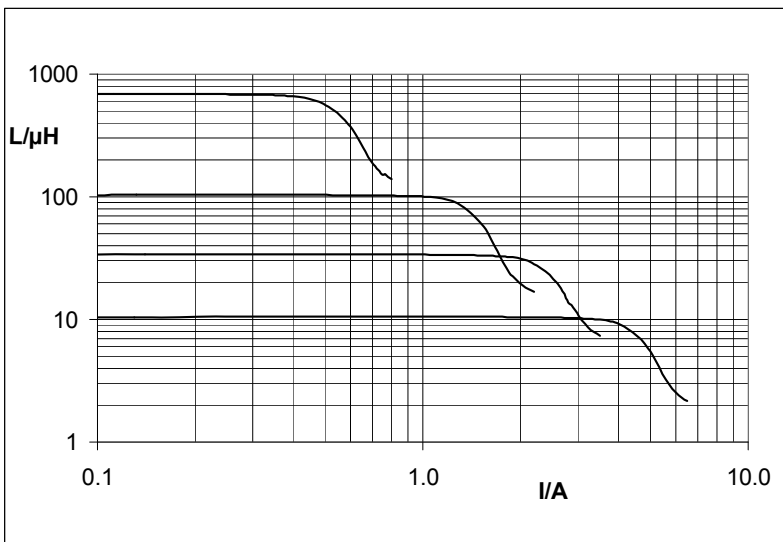
Characteristics and ordering codes

L_R μH	Tolerance	f_L MHz	I_R A	I_{sat} A	R_{max} Ω	Ordering code
10	20% = M	0.1	2.60	2.75	0.06	B82475M1103M000
15		0.1	2.27	2.35	0.08	B82475M1153M000
22		0.1	1.95	2.00	0.10	B82475M1223M000
33		0.1	1.50	1.60	0.12	B82475M1333M000
47	10% = K	0.1	1.28	1.35	0.17	B82475M1473K000
68		0.1	1.11	1.20	0.22	B82475M1683K000
100		0.1	0.97	1.00	0.35	B82475M1104K000
150		0.1	0.78	0.82	0.47	B82475M1154K000
220		0.1	0.66	0.70	0.73	B82475M1224K000
330		0.1	0.52	0.55	1.15	B82475M1334K000
470		0.1	0.42	0.45	1.48	B82475M1474K000
680		0.1	0.28	0.30	2.25	B82475M1684K000

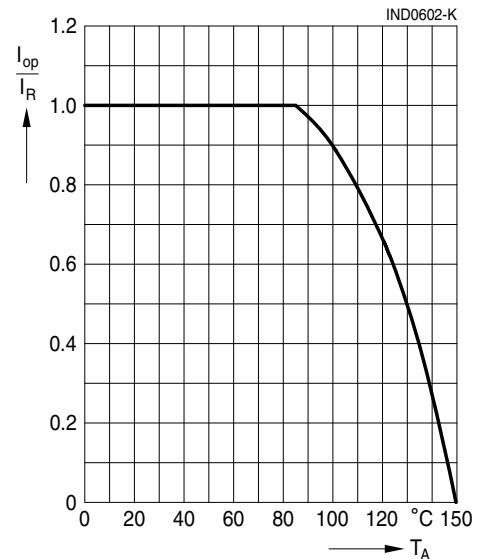
Impedance versus frequency (typical curve)



Inductance derating versus load current (typical curve)



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
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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