



## **SMT power inductors**

Size 12.95 x 9.40 x 5.08

**Series/Type:**            **B82476B1xxxM100**

**Date:**                    **June 2013**

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**Rated inductance 1 ... 1000  $\mu$ H**

**Construction**

- Ferrite core
- Winding: enamel copper wire
- Winding soldered to terminals
- Rugged design with 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 020D
- Qualified to 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 structure Ni, Sn (lead-free)
- Electro-plated

**Marking**

Marking on component:

Manufacturer, L value (in  $\mu$ H), date code

Minimum data on reel:

Manufacturer, part number, ordering code,

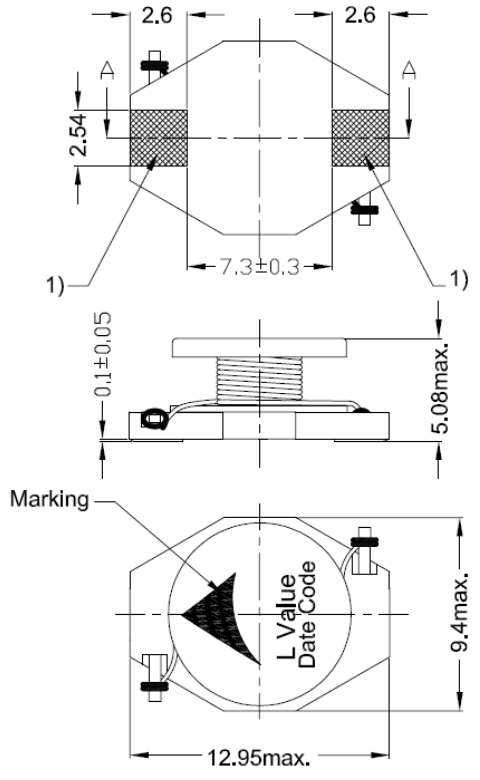
L value and tolerance

quantity, date of packing

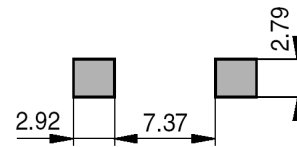
**Delivery mode and packaging unit**

- 24-mm blister tape, reel packing
- Packaging quantity: 750 pcs./reel

**Dimensional drawing and layout recommendation**



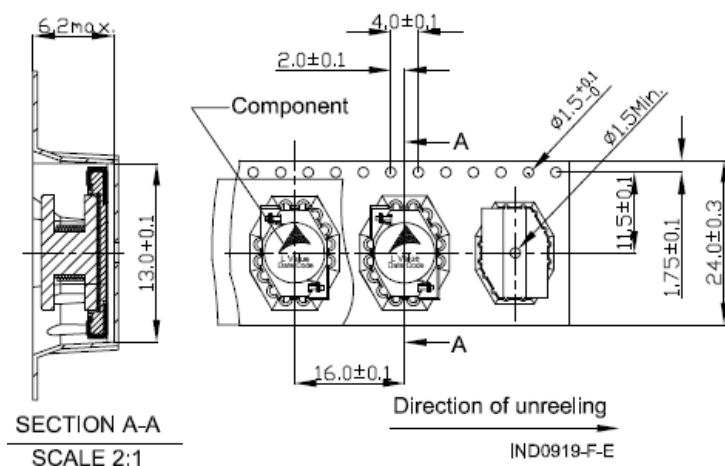
1) Soldering area



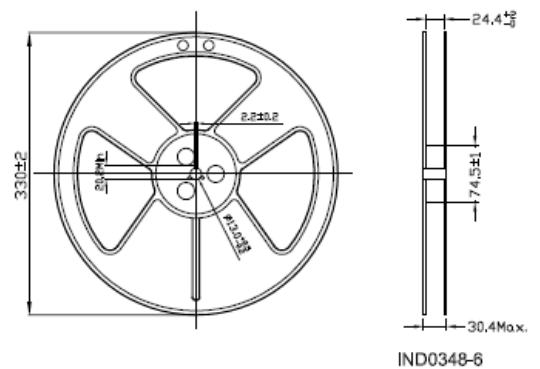
Dimensions in mm  
Component tolerances  $\pm 0.2\text{mm}$  unless otherwise noted

**Taping and packing**

**Blister tape**



**Reel**



**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
Operating temperature range	-55 °C .. +150 °C
Rated current $I_R$	Max. permissible DC with temperature increase of $\leq 40$ K at +20 °C
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. 2 g

**Characteristics and ordering codes**

$L_R$ $\mu\text{H}$	Tolerance	$f_L$ MHz	$I_R$ A	$I_{sat,min}$ A	$I_{sat,typ}$ A	$R_{max}$ $\Omega$	$R_{typ}$ $\Omega$	Ordering code
1.0	20% = M	0.1	7.50	9.0	12.5	0.0080	0.0060	B82476B1102M100
1.5			6.90	8.0	10.0	0.0090	0.0070	B82476B1152M100
2.2			6.70	7.0	8.00	0.0105	0.0090	B82476B1222M100
3.3			5.90	6.4	6.80	0.0135	0.0115	B82476B1332M100
4.7			5.30	5.4	5.60	0.0165	0.0145	B82476B1472M100
6.8			4.80	4.6	4.90	0.0210	0.0190	B82476B1682M100
10			4.30	3.8	4.25	0.0270	0.0245	B82476B1103M100
15			3.40	3.0	3.40	0.0400	0.0350	B82476B1153M100
22			2.95	2.6	2.80	0.0500	0.0450	B82476B1223M100
33			2.30	2.0	2.15	0.0880	0.0810	B82476B1333M100
47			1.95	1.6	2.05	0.120	0.110	B82476B1473M100
68			1.65	1.4	1.65	0.160	0.150	B82476B1683M100
100			1.40	1.2	1.35	0.230	0.215	B82476B1104M100
150			1.10	1.0	1.15	0.330	0.305	B82476B1154M100
220			0.88	0.8	0.88	0.530	0.480	B82476B1224M100
330			0.65	0.6	0.67	0.810	0.730	B82476B1334M100
470			0.55	0.5	0.56	1.100	1.010	B82476B1474M100
680	0.43	0.4	0.46	1.600	1.500	B82476B1684M100		
1000	0.33	0.3	0.42	2.150	1.950	B82476B1105M100		

**Typical curves:**

Inductance vs. DC superposition measured with LCR meter Agilent 4284A at  $T_a=20\text{ }^\circ\text{C}$



**Current derating versus ambient temperature**



#### 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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#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.