Inductors

Transponder coils
Size 11.4 × 3.5 × 2.4 (mm)

Series/Type: **B82450A*A**

Date: October 2008

SMD

Rated inductance 1 mH to 7 mH
Sensitivity 16 to 51 mV/µT

Construction

- Ferrite core
- Winding: enamel copper wire welded to terminals
- Flame-retardant molding

Features

- Robust construction for a high mechanical stability when exposed to shock, drop and bending tests
- Qualified to AEC-Q200
- High sensitivity
- Suitable for pick and place and AOI (Automatic Optical Inspection)
- Suitable for lead-free reflow soldering as referenced in JEDEC J-STD 020C
- RoHS-compatible

Applications

- Car access systems
  - immobilizer
  - PEPS (Passive Entry, Passive Start)
- TPMS (Tire Pressure Monitoring Systems)

Terminals

- Base material CuSn6
- Layer composition Ni, Sn (lead-free)
- Electro-plated

Marking

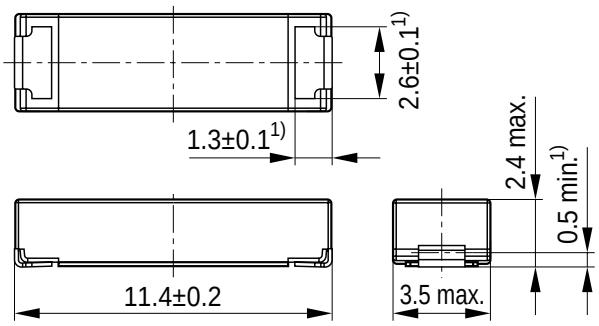
- Marking on component:
  Manufacturer, L value (nH, coded), letter “A”, date of manufacture (YWWD), last five digits of lot number, internal information
- Minimum data on reel:
  Manufacturer, ordering code, L value, quantity, date of packing

Delivery mode and packing unit

- 24-mm blister tape, wound on 330-mm ∅ reel
- Packing unit: 2500 pcs./reel

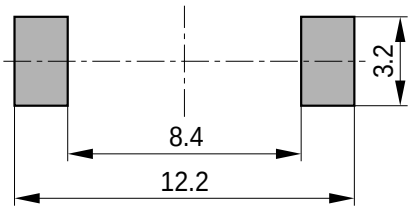
SMD

Dimensional drawing and layout recommendation



1) Soldering area

IND0636-Q-E



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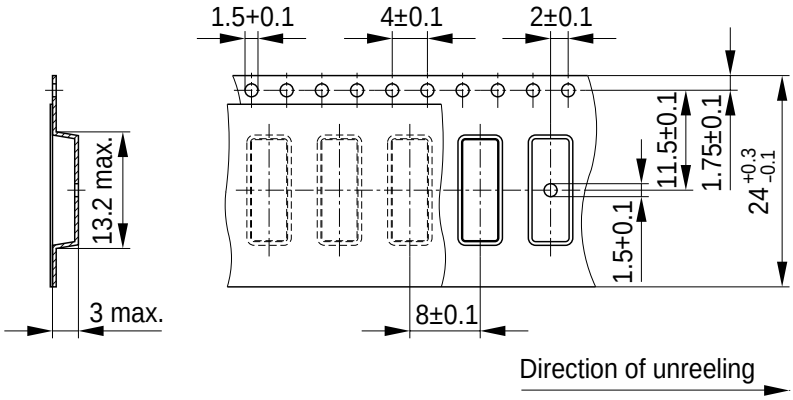
Dimensions in mm

Taping and packing

Blister tape



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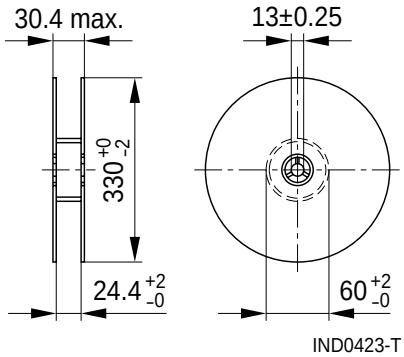
Reel



IND0423-T

Dimensions in mm

Technical data and measuring conditions

Rated inductance L_R	Measured with Agilent 4294A and test fixture Agilent 16034 at frequency f_L, RMS voltage 500 mV, 20 °C
Q factor Q_{min}	Measured with Agilent 4294A and test fixture Agilent 16034 at frequency f_Q, RMS voltage 500 mV, 20 °C
Sensitivity S_{typ}	Measured with Helmholtz coil test setup at 125 kHz
Resonance frequency f_{res}	Measuring with network analyzer Agilent 8753D, 20 °C
DC resistance R_{max}	Measured at 20 °C
Solderability (lead-free)	Sn95.5Ag3.8Cu0.7: (245 ±5) °C, 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 020C)
Climatic category	40/125/56 (to IEC 60068-1)
Storage conditions	Mounted: –40 °C … +125 °C Packaged: –25 °C … +40 °C, ≤ 75% RH
Weight	Approx. 0.32 g

Characteristics and ordering codes

L_R mH	L tolerance	f_L, f_Q kHz	Q_{min}	S_{typ} $\frac{mV}{\mu T}$	R_{max} Ω	f_{res} MHz	Ordering code
1.0	±3%	125	40	16	15	> 3.5	B82450A1004A000
2.36		125	50	30	25	> 2.0	B82450A2364A000
4.9		125	40	41	55	> 1.2	B82450A4904A000
7.0		125	40	51	85	> 1.1	B82450A7004A000

Characteristics and ordering codes for other L values available on request.

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.

Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application.**

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2. We also point out that **in individual cases, a malfunction of electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified.** In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of an electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of an electronic component.

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