

Inductors

Transponder coils
Size $7.8 \times 2.7 \times 2.7$ (mm)

Series/Type: **B82450A*E**

Date: August 2019

Transponder coils

B82450A*E

Size 7.8 x 2.7 x 2.7 (mm)

SMD

Rated inductance 1 ... 18.52 mH

Sensitivity 10 ... 50 mV/μT



Construction

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

Features

- Robust construction for a high mechanical stability
- Qualified to AEC-Q200
- High sensitivity in X/Y orientation
- Suitable for pick and place and AOI (Automatic Optical Inspection)
- Suitable for lead-free reflow soldering
- 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 in nH, letter “E”, 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

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

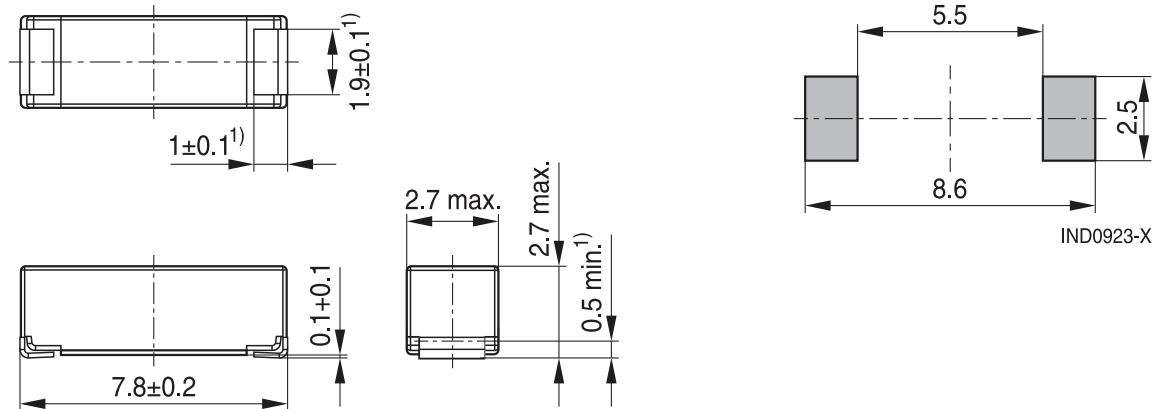
Transponder coils

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Dimensional drawing and layout recommendation



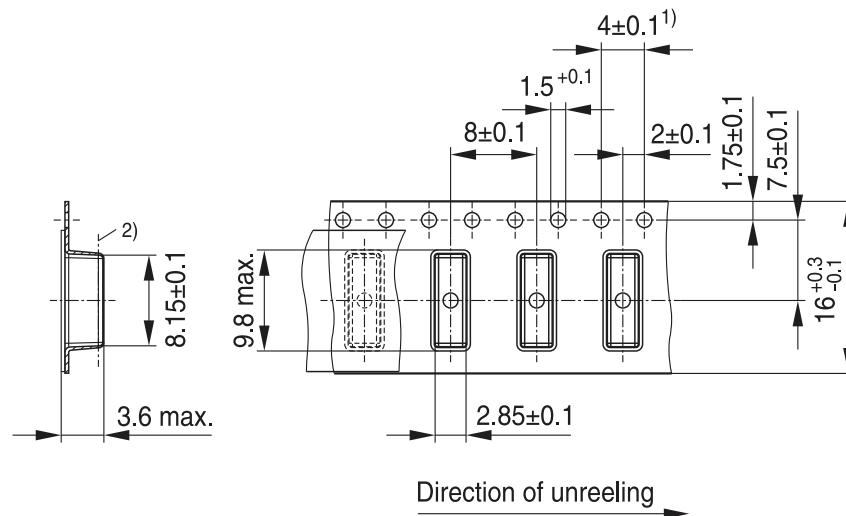
1) Soldering area

IND0903-K-E

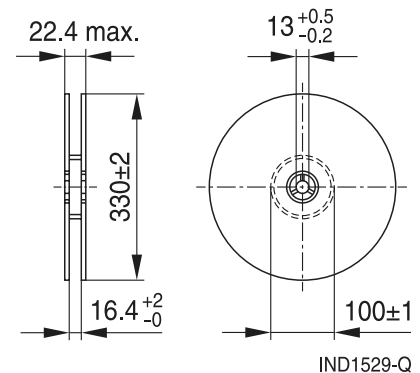
Dimensions in mm

Taping and packing

Blister tape



Reel



1) Limit tolerance over 10 pitches ± 0.2

2) Reference plane for the dimensions: 8.15 ± 0.1 and 2.85 ± 0.1

IND1558-J-E

Dimensions in mm

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Technical data and measuring conditions

Rated inductance L_R	Measured with Agilent 4294A and test fixture Agilent 16034 or equivalent at frequency f_L , RMS voltage 500 mV, +20 °C
Q factor Q_{min}	Measured with Agilent 4294A and test fixture Agilent 16034 or equivalent 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}	Measured with Agilent 4294A and test fixture Agilent 16034 or equivalent, +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)
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. 0.25 g

Characteristics and ordering codes

L_R mH	L tolerance	Q_{min}	f_L, f_Q kHz	S_{typ} $\frac{mV}{\mu T}$	f_{res} MHz	Ordering code
1.0	±3%	35	125	10	> 3.0	B82450A1004E000
2.36		35	125	16	> 2.0	B82450A2364E000
7.2		35	125	28	> 1.0	B82450A7204E000
18.52		30	125	50	> 0.4	B82450A1855E001

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.

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, wire insulation, plastics or glue.
 - The effect of the potting material can change the high-frequency behaviour of the components.
 - Many coating materials have a negative effect (chemically and mechanically) on the winding wires, insulation materials and connecting points. Customers are always obligated to determine whether and to what extent their coating materials influence the component.

Customers are responsible and bear all risk for the use of the coating material. TDK Electronics does not assume any liability for failures of our components that are caused by the coating material.
- Ceramics / 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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3. **The warnings, cautions and product-specific notes must be observed.**
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Important notes

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