



## SMT Inductors

### Transponder Coils, Size 1812 (EIA)

<b>Series/Type:</b>	<b>TC 1812</b>
<b>Ordering code:</b>	<b>B82451A2384D000</b>
<b>Date:</b>	<b>2015-11-02</b>
<b>Version:</b>	<b>03</b>

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**Size 1812 (EIA) or 4532 (IEC)**
**Construction**

- Ferrite drum core
- Laser-welded winding with non-solderable wire
- Flame-retardant molding

**Features**

- Temperature range up to +125 °C
- High Sensitivity in Z orientation
- High Quality factor
- Qualified to AEC-Q200
- Suitable for lead-free reflow soldering as referenced in JEDEC J-STD 020D
- RoHS-compatible

**Applications**

- Transponder coil in TPMS (Tire Pressure Monitoring System)

**Terminals**

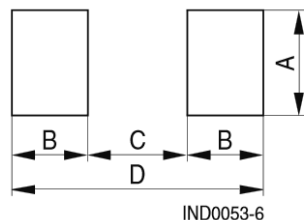
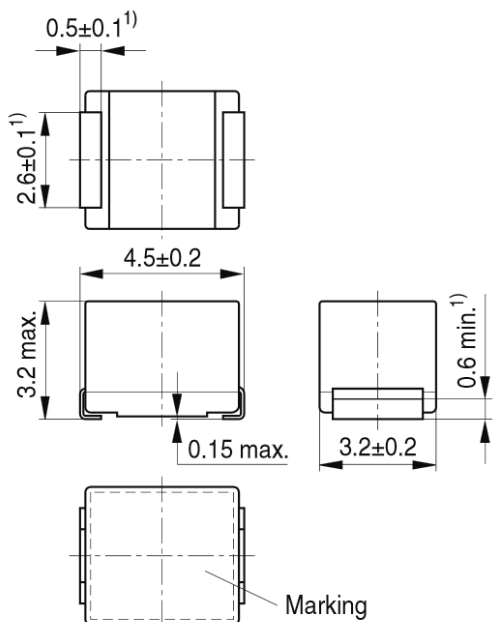
- Base material CuSn6
- Layer composition Cu, Ag, Sn (lead-free)
- Electro-plated

**Delivery mode and packing units**

- 12 mm blister tape, wound, on Ø330 mm reel
- Packing unit: 2500 pcs/reel



Dimensional drawing and layout recommendation



IND0053-6

A	B	C	D
3.6	1.3	3.2	5.8

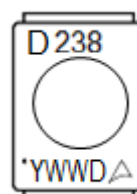
1) Soldering area

IND0083-T-E

Dimensions in mm

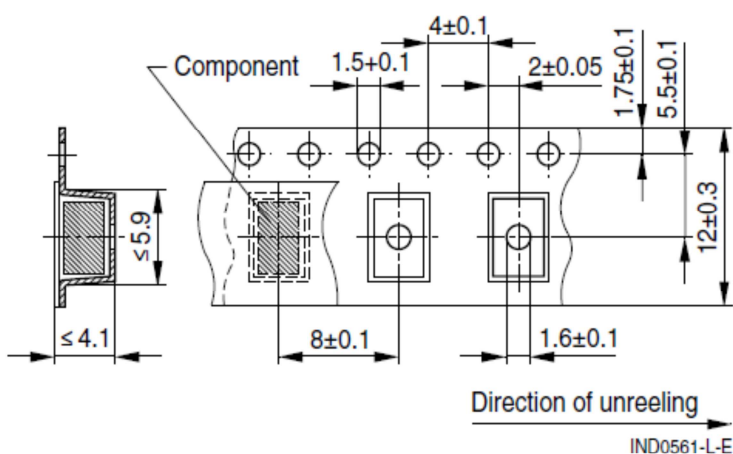
Marking on component

- D – 1812 Transponder coil (B82451-A\*-D)
- 238 – Inductance value without exponent (B82451A-2384-D)
- YWWD – Date code



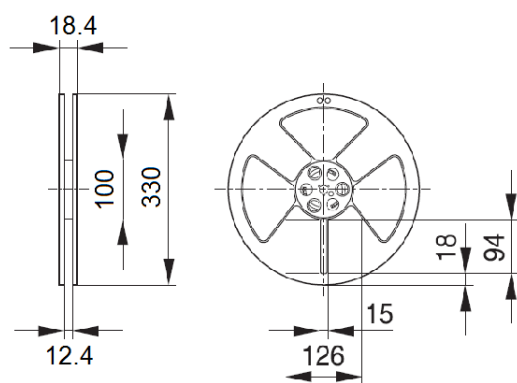
Taping and packing

Blister tape



IND0561-L-E

Reel



IND1078-R

Dimensions in mm

**Technical data and measuring conditions**

Rated inductance $L_R$	Measured with impedance analyzer Agilent 4294A at frequency $f_L$ , 0.5 V, 20 °C
Q factor $Q_{min}$	Measured with impedance analyzer Agilent 4294A at frequency $f_Q$ , 20 °C
Rated temperature $T_R$	125 °C
Self-resonance frequency $f_{res,min}$	Measured 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, (5 ±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	40/125/56 (to IEC 60068-1)
Storage conditions	Mounted: -40°C ... +125 °C Packaged: -25 °C ... +40 °C, ≤ 75% RH
Weight	Approx. 120mg

**Characteristics and ordering codes**

$L_R$	L	$f_L, f_Q$	$Q_{min}$	$S_{typ}$	$R_{max}$	$F_{res}$	Ordering code
$\mu H$	tolerance	kHz		$\left[ \frac{mV}{\mu T} \right]$	$\Omega$	MHz	
2380	±5%	125	25	7.6	43	>1.5	B82451A2384D000

## Cautions and warnings

- Please note the recommendations in our 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 glued on 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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