



SMT Transformer for Ultrasonic Sensors

EP 6 series

Series/Type: B78416
Ordering code: B78416A2360A003
Date: July 2018
Version: 1

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Construction

- EP 6 type with ferrite core
- 5 U-shape terminals

Applications

Ultrasonic transceiver driver used for

- Ultrasonic park assist
- Industrial distance measuring
- Robotics

Features

- Resistance to reflow soldering heat in accordance with JEDEC J-STD-020D with +245 °C for 10 seconds
- MLS level 1
- RoHS compatible
- Component shielding connected to pin 6

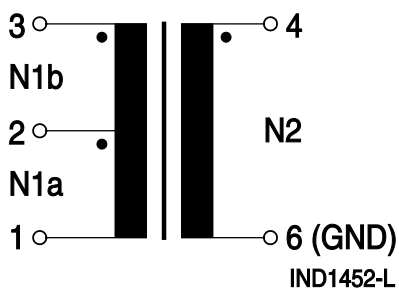
Marking

- Manufacturer, middle block of ordering code, date code, pin1 marker

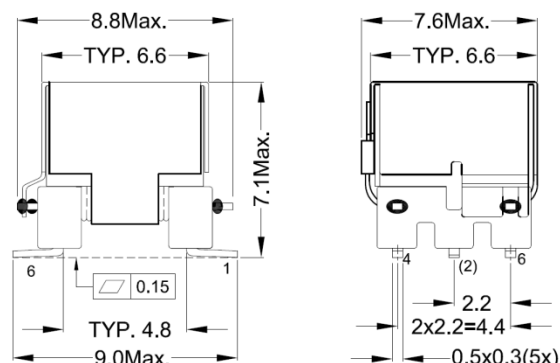
Delivery mode and packing unit

- 24-mm blister tape, 380-mm Ø reel
- Packing unit: 1000 pcs. / reel

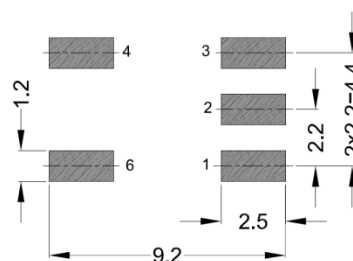
Schematic



Recommendation: Connect pin 6 on PCB to GND



Recommended PCB Layout
(Top View)



Dimensions in mm

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Technical data and measuring conditions

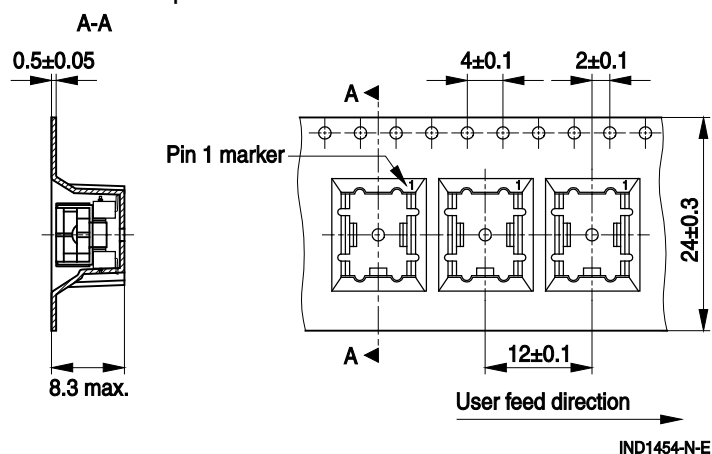
Main inductance L (4 – 6)	3 mH (52 kHz, 1 V at +25 °C)
Inductance tolerance	±10% at +25 °C
Turns ratio $N_{1a} : N_{1b} : N_2$	1 : 1 : 8.42
Operating frequency f	52 kHz
Test voltage V_{test} : N_{1a} , N_{1b} against N_2	100 V AC, 1 s, f= 50 Hz
Operating temperature range	–40 ... +85 °C
DC resistance $R_{DC} N_2 / R_{DC} N_{1a,b}$	23.0 Ohm / 0.59 Ohm each

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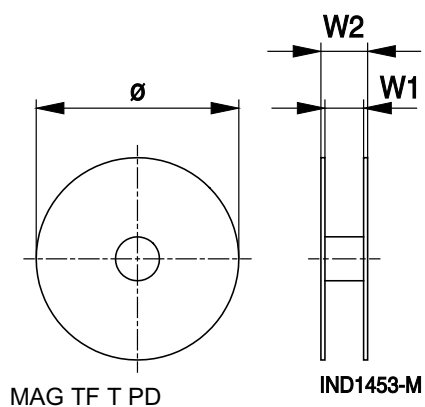
Taping and packing

- Blister tape



Dimensions in mm

- Reel
- Ø: 380 mm, W1: 24.4 mm, W2: 30.4 mm



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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 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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Important notes

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