Magnetics modules for LAN applications

10/100 Base-T magnetics module

Ordering code: **B78476A8247A003**
Date: July 2008

SMD

Features

- Ferrite toroid, case and potting (UL 94 V-0)
- Compliant with IPC/JEDEC J-STD-020C
- Compliant with IEEE 802.3
- MSL level 2
- RoHS-compatible

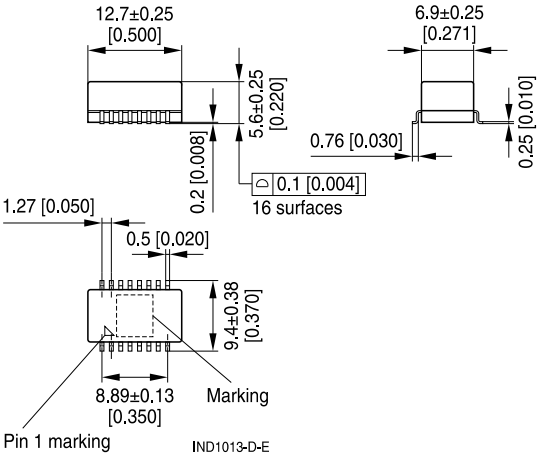
Marking

- EPCOS, middle block of ordering code, date code

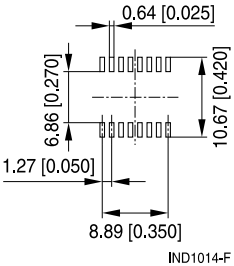
Delivery mode and packing unit

- 24-mm blister tape,
  330-mm ∅ reel (cardboard packaging)
- Packing unit: 500 pcs./reel

Dimensional drawing



Layout recommendation



Units: mm [inch]
Values without tolerances are nominal values for reference.

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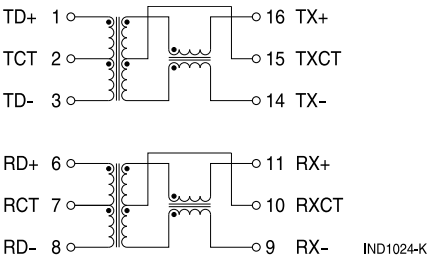
Pinning



Characteristics and ordering code

(electrical specifications at 25 °C)

Ordering code	B78476A8247A003	
Turns ratio (primary : secondary)	1CT : 1CT ±3%	
Inductance L	350 µH min.	100 kHz, 100 mV, 8 mA DC bias
Voltage test V_{test}	1500 V AC	50 Hz, 1 min
Insertion loss	−1.0 dB max.	0.1 MHz ... 100 MHz
Return loss	−18 dB min. −16 dB min. −14 dB min. −12 dB min.	1 MHz ... 30 MHz 40 MHz 50 MHz 60 MHz ... 80 MHz
Crosstalk	−43 dB min. −37 dB min. −33 dB min.	30 MHz 60 MHz 100 MHz
Differential to common-mode rejection (DCMR)	−43 dB min. −37 dB min. −33 dB min.	30 MHz 60 MHz 100 MHz
Operating temperature range	−40 °C ... +85 °C	
Weight	Approx. 0.8 g	

Cautions and warnings

- For soldering conditions please refer to JEDEC J-STD-020C.
- 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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