Magnetics modules for LAN applications

1000 Base-T magnetics module

Series/Type: **B78476A8066A003**

Date: August 2012

EPCOS

Dual port, power over ethernet

SMD

Features

- Ferrite toroid, case and potting (UL 94 V-0)
- Compliant with IPC/JEDEC J-STD-020D
- Compliant with IEEE 802.3af
- MSL level 2
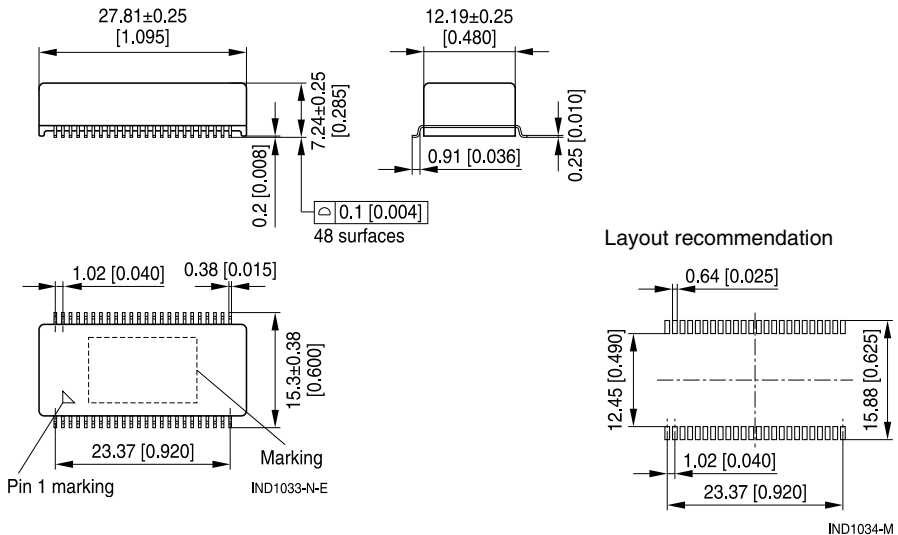- Optimized for full duplex applications
- RoHS-compatible

Marking

- EPCOS, middle block of ordering code, date code

Delivery mode and packing unit

- 44-mm blister tape,
  330-mm ∅ reel (cardboard packaging)
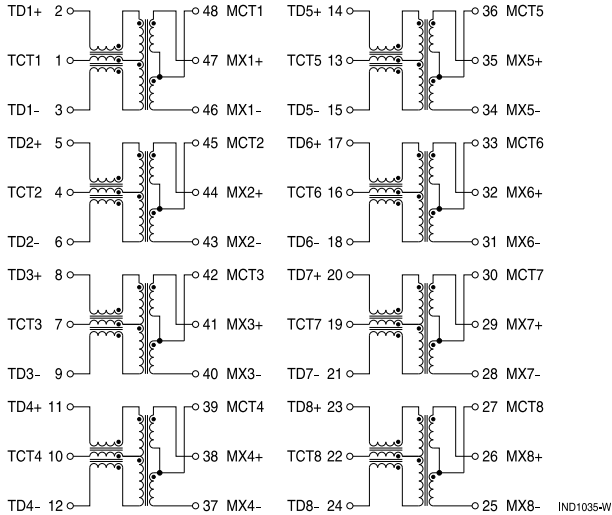- Packing unit: 300 pcs./reel

Dimensional drawing

Layout recommendation

Dimensions in mm [inch]
Values without tolerances are nominal values for reference.

Please read *Cautions and warnings* and
Important notes at the end of this document.

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Pinning

TD1+ 2 — 48 MCT1   TD5+ 14 — 36 MCT5
TCT1 1 — 47 MX1+   TCT5 13 — 35 MX5+
TD1- 3 — 46 MX1-   TD5- 15 — 34 MX5-

TD2+ 5 — 45 MCT2   TD6+ 17 — 33 MCT6
TCT2 4 — 44 MX2+   TCT6 16 — 32 MX6+
TD2- 6 — 43 MX2-   TD6- 18 — 31 MX6-

TD3+ 8 — 42 MCT3   TD7+ 20 — 30 MCT7
TCT3 7 — 41 MX3+   TCT7 19 — 29 MX7+
TD3- 9 — 40 MX3-   TD7- 21 — 28 MX7-

TD4+ 11 — 39 MCT4   TD8+ 23 — 27 MCT8
TCT4 10 — 38 MX4+   TCT8 22 — 26 MX8+
TD4- 12 — 37 MX4-   TD8- 24 — 25 MX8-

IND1035-W

Characteristics and ordering code

(electrical specifications at +25 °C)

Ordering code	B78476A8066A003	
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	−1.1 dB max. −1.0 dB max. −2.0 dB max.	0.1 MHz 100 MHz 125 MHz
Return loss	−18 dB min. −16 dB min. −12 dB min. −10 dB min.	1 MHz ... 40 MHz 50 MHz 60 MHz ... 80 MHz 100 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	0 °C ... +70 °C	
Weight	Approx. 3.7 g	

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Cautions and warnings

- For soldering conditions of SMD components please refer to JEDEC J-STD-020D.
- 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 processesmay damage the product due to the possible static or cyclic mechanical loads (e.g. ultrasonic cleaning). They may cause cracks to developon 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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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**. As a rule, EPCOS is either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether an EPCOS product with the properties described in the product specification is suitable for use in a particular customer application.

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