# RJ45 Jacks with integrated magnetics

10/100 Base-T, dual port, tab down

**Ordering code:** **B78477P1***A*24**
Date: October 2008

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### Applications

- Local Area Networks using Ethernet protocol
- Hubs, switches, routers
- ADSL modems
- Industrial automation equipment using Ethernet protocol for communication

### Features

- Fully compliant with IEEE 802.3
- With EMI fingers for shielding
- High electrical performance and EMI suppression
- Optimized for all major transceiver ICs
- Industry standard footprint
- RoHS-compatible

### Construction

- Housing: Thermoplastic, UL 94 V-0
- Shield: Ni plated on copper alloy
- Contact: Phosphor bronze,
  1.27 µm (50 µ") Ni underplating,
  0.4 µm (15 µ") selective gold plating
- Connector dimensions comply with TIA-968 (FCC 68.5) dimension requirements

### Marking

- EPCOS, middle block of ordering code, date code

### Delivery mode and packing unit

- Blister trays in carton box
- Packing unit: 320 pcs. per carton box (8 trays)

### Mechanical characteristics

| | |
|---|---|
| Insertion force | 20 N max. |
| Retention force | 75 N min. |
| Durability | 750 mating cycles min. |

### LED specification

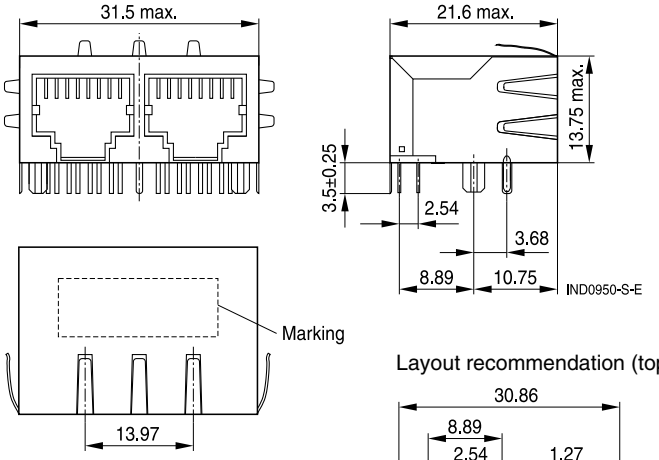
| LED colour | Wave length | Forward voltage | |
|---|---|---|---|
| | | Max. | Typical |
| Green | 565 nm | 2.6 V | 2.2 V |
| Yellow | 585 nm | 2.6 V | 2.1 V |

### Characteristics and ordering codes

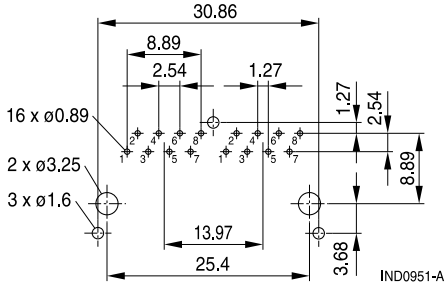
(electrical specifications at 25 °C)

| Ordering code | B78477P1008A024 | B78477P1009A124 | |
|---|---|---|---|
| LED (left - right) | – | Yellow - green | |
| Turns ratio (primary : secondary) | 1CT : 1CT ±3% | | |
| Inductance L | 350 µH min. | | 100 kHz, 100 mV, 8 mA DC bias |
| Voltage test $V_{test}$ (primary : secondary) | 1500 V AC | | 50 Hz, 1 min |
| Insertion loss | −1.0 dB max. | | 1 MHz ... 100 MHz |
| Return loss | −18 dB min.<br>−14 dB min.<br>−12 dB min.<br>−10 dB min. | | 1 MHz ... 40 MHz<br>60 MHz<br>80 MHz<br>100 MHz |
| Crosstalk | −33 dB min. | | 1 MHz ... 100 MHz |
| Common-mode rejection | −30 dB typ. | | 1 MHz ... 100 MHz |
| Operating temperature range | 0 °C ... +70 °C | | |
| Weight | Approx. 11 g | | |

### Dimensional drawing for B78477P1008A024

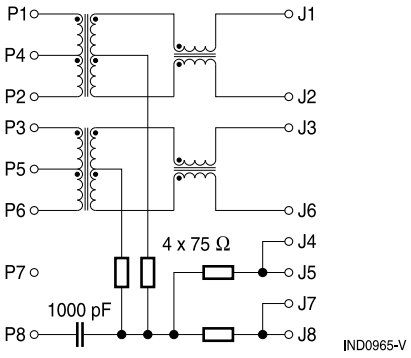



Layout recommendation (top view)

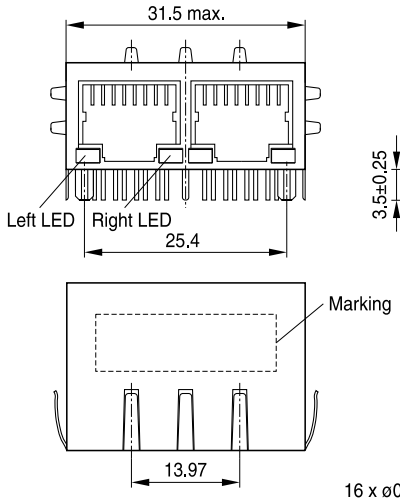


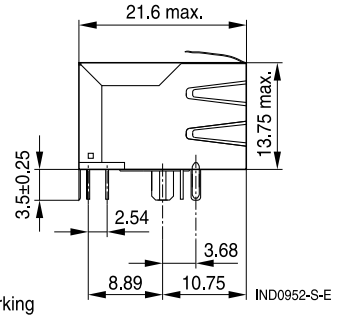

Dimensions in mm
Values without tolerances are nominal values for reference.

### Pinning

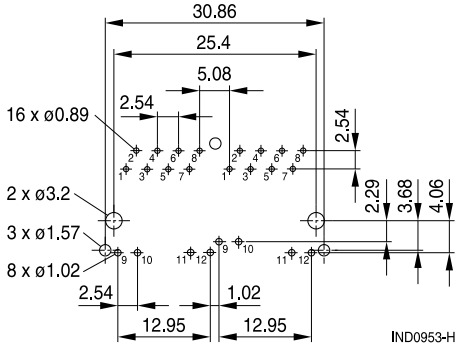


### Dimensional drawing for B78477P1009A124



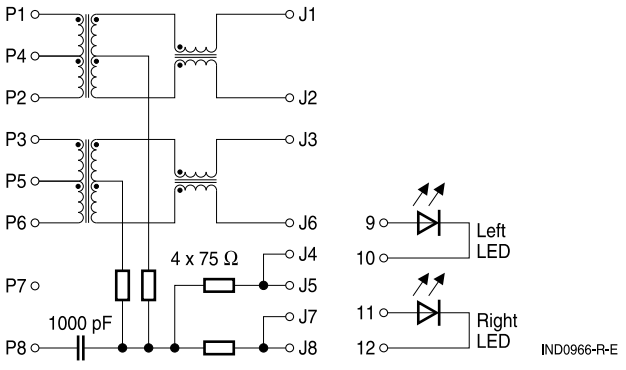




Layout recommendation (top view)




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

### Pinning



### Cautions and warnings

- 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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