



RJ45 Jacks with integrated magnetics

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

Series/Type: B78477P100*A*14

Date: August 2012

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, IEEE 802.3af (B78477P1001A314)
- 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 m^2) Ni underplating, 0.4 mm (15 m^2) 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: 512 pcs. per carton box (8 trays), B78477P1001A314: 640 pcs.

Overview and ordering codes

Operating temperature range	LED (left - right)	Ordering code
0 °C ... +70 °C	Green - yellow	B78477P1004A314
	Green - yellow	B78477P1005A314
	Yellow - green	B78477P1006A114
	Yellow - green	B78477P1007A114
	Yellow - green	B78477P1003A014
40 °C ... +85 °C	Green - yellow	B78477P1001A314
		B78477P1002A014

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
B78477P1001A314

(electrical specifications at +25 °C)

Turns ratio (primary : secondary)	1.414 : 1 ±3%	
Inductance L	350 nH min.	100 kHz, 100 mV, 8 mA DC bias
Voltage test V_{test} (primary : secondary) (primary : shield)	1500 V_{RMS} 1500 V_{RMS}	0.5 mA, 50 Hz, 1 min ¹⁾ 0.5 mA, 50 Hz, 1 min ¹⁾
DCR (1/2 winding)	0.6 W max.	
DCR Balance	±0.065 W max.	center tap symmetry
Insertion loss	1.2 dB max.	0.1 MHz
Return loss	16 dB min. 10+20log(f/60) dB min. 10 dB min.	0.1 MHz ... 30 MHz 30 MHz ... 60 MHz 60 MHz ... 80 MHz
Crosstalk	50 dB min. 50+17log(f/10) dB min.	1 MHz 10 MHz ... 100 MHz
Common-mode rejection	50 dB typ. 15+17log(f/200) dB typ.	2 MHz 30 MHz ... 200 MHz
Weight	Approx. 5.7 g	

 1) On mass manufacture will be 2 s to HV_{test}

Characteristics

B78477P1002A014, B78477P1003A014,
 B78477P1004A314, B78477P1006A114,
 B78477P1007A114

(electrical specifications at +25 °C)

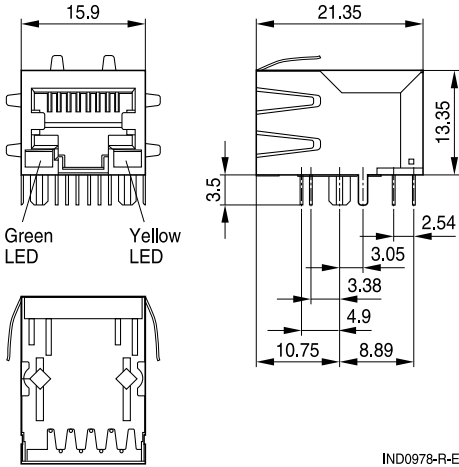
Turns ratio (primary : secondary)	1CT : 1CT ±3%	
Inductance L	350 nH min.	100 kHz, 100 mV, 8 mA DC bias
Voltage test V_{test} (primary : secondary)	1500 V AC	50 Hz, 1 min
Insertion loss	1.0 dB max.	1 MHz ... 100 MHz
Return loss	18 dB min. 14 dB min. 12 dB min. 10 dB min.	1 MHz ... 40 MHz 60 MHz 80 MHz 100 MHz
Crosstalk	33 dB min.	1 MHz ... 100 MHz
Common-mode rejection	30 dB typ.	1 MHz ... 100 MHz
Weight	Approx. 5.7 g	

Characteristics
B78477P1005A314

(electrical specifications at +25 °C)

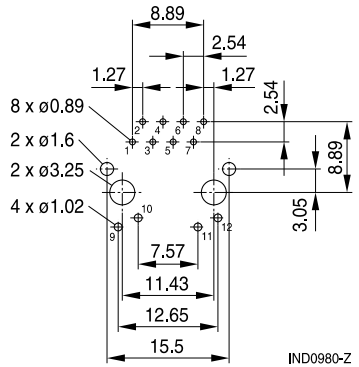
Turns ratio (primary : secondary)	1CT : 1 ±3%	
Inductance L	350 mH min.	100 kHz, 100 mV, 8 mA DC bias
Voltage test V_{test} (primary : secondary)	1500 V AC	50 Hz, 1 min
Insertion loss	1.0 dB max.	1 MHz ... 100 MHz
Return loss	18 dB min. 14 dB min. 12 dB min. 10 dB min.	1 MHz ... 40 MHz 60 MHz 80 MHz 100 MHz
Crosstalk	33 dB min.	1 MHz ... 100 MHz
Common-mode rejection	30 dB typ.	1 MHz ... 100 MHz
Weight	Approx. 5.7 g	

Dimensional drawing for B78477P1001A314



IND0978-R-E

Layout recommendation (top view)

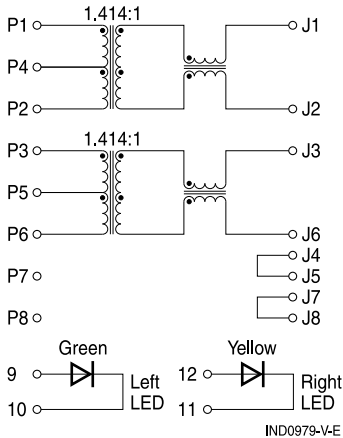


IND0980-Z

Dimensions in mm

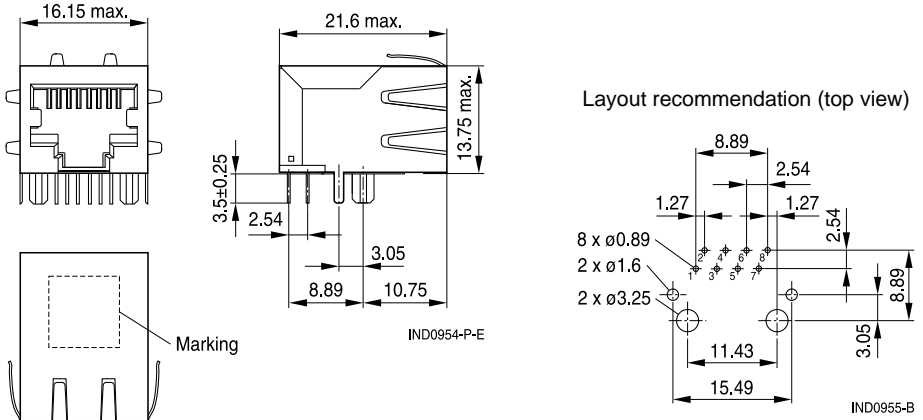
Values without tolerances are nominal values for reference.

Pinning



IND0979-V-E

Dimensional drawing for B78477P1002A014 and B78477P1003A014

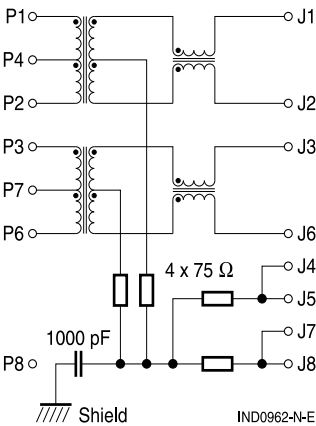


Dimensions in mm

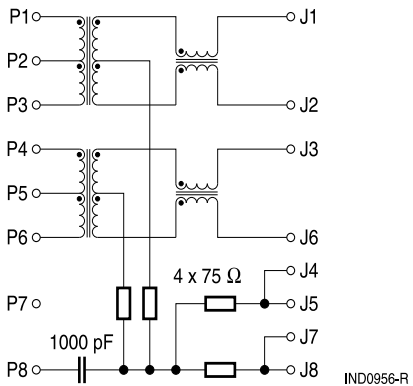
Values without tolerances are nominal values for reference.

Pinnings

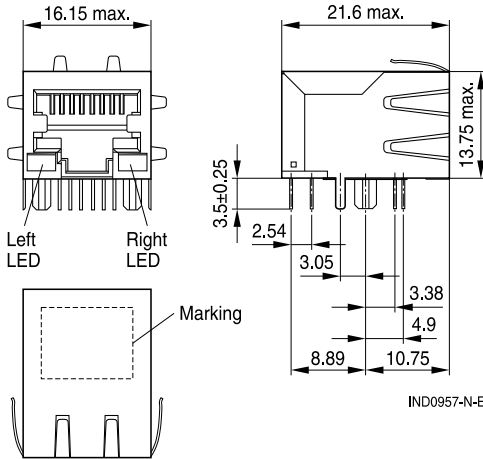
B78477P1002A014



B78477P1003A014

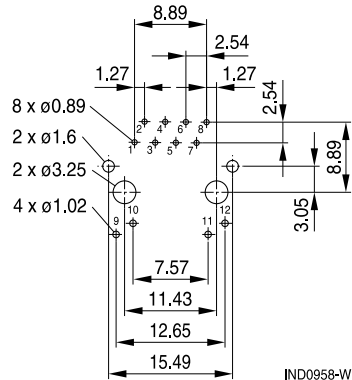


Dimensional drawing for B78477P1004A314 and B78477P1005A314



IND0957-N-E

Layout recommendation (top view)



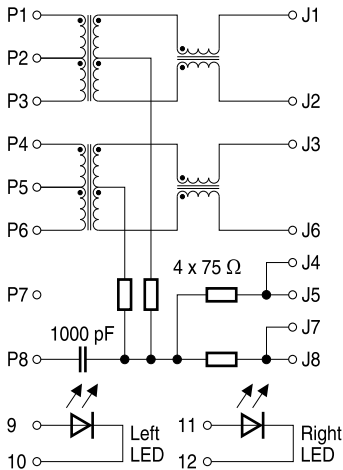
IND0958-W

Dimensions in mm

Values without tolerances are nominal values for reference.

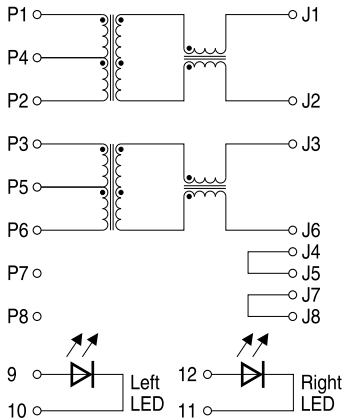
Pinnings

B78477P1004A314



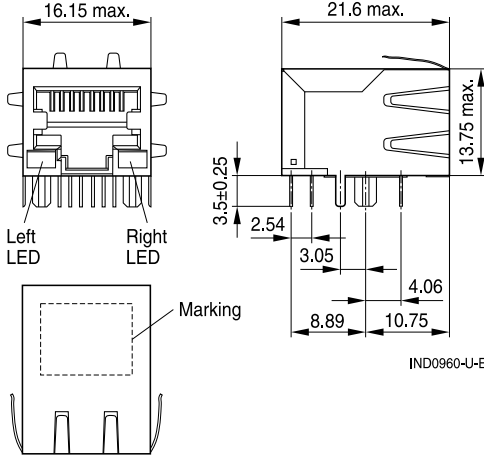
IND0964-H-E

B78477P1005A314



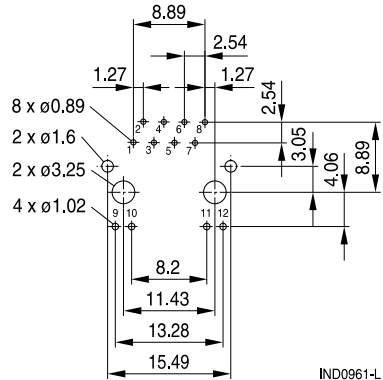
IND0959-Z-E

Dimensional drawing for B78477P1006A114 and B78477P1007A114



IND0960-U-E

Layout recommendation (top view)



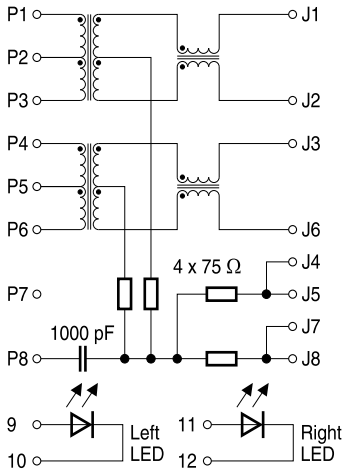
IND0961-L

Dimensions in mm

Values without tolerances are nominal values for reference.

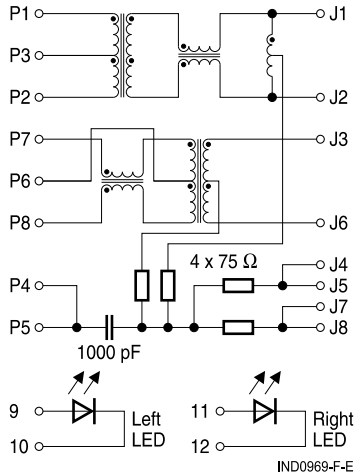
Pinnings

B78477P1006A114



IND0964-H-E

B78477P1007A114



IND0969-F-E

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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