

## LAN Modules

**Series/Type: B78477P1\*\*\*A\*14**

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B78477P1007A114		2014-04-25	2014-07-31	2014-10-31
B78477P1006A114		2014-04-25	2014-07-31	2014-10-31
B78477P1005A314		2014-04-25	2014-07-31	2014-10-31

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Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B78477P1004A314		2014-04-25	2014-07-31	2014-10-31
B78477P1003A014		2014-04-25	2014-07-31	2014-10-31
B78477P1002A014		2014-04-25	2014-07-31	2014-10-31
B78477P1001A314		2014-04-25	2014-07-31	2014-10-31

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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, 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  $\mu\text{m}$  (50  $\mu\text{''}$ ) Ni underplating, 0.4  $\mu\text{m}$  (15  $\mu\text{''}$ ) 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
	–	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 μH 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 <sup>1)</sup> 0.5 mA, 50 Hz, 1 min <sup>1)</sup>
DCR (1/2 winding)	0.6 Ω max.	
DCR Balance	±0.065 Ω 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)

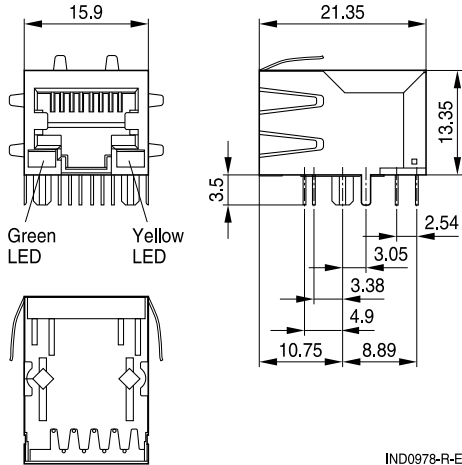
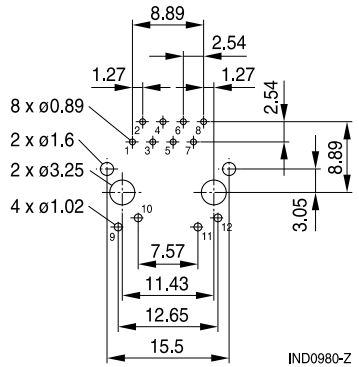
Turns ratio (primary : secondary)	1CT : 1CT ±3%	
Inductance L	350 µH min.	100 kHz, 100 mV, 8 mA DC bias
Voltage test $V_{test}$ (primary : secondary)	1500 V AC	50 Hz, 1 min
Insertion loss	-1.0 dB max.	1 MHz ... 100 MHz
Return loss	-18 dB min. -14 dB min. -12 dB min. -10 dB min.	1 MHz ... 40 MHz 60 MHz 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

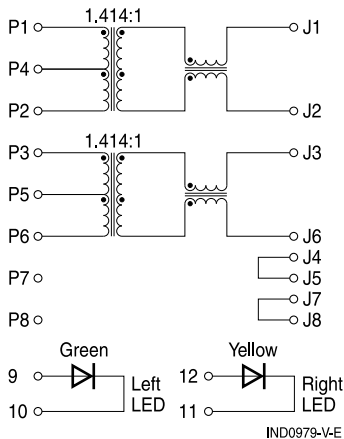
(electrical specifications at +25 °C)

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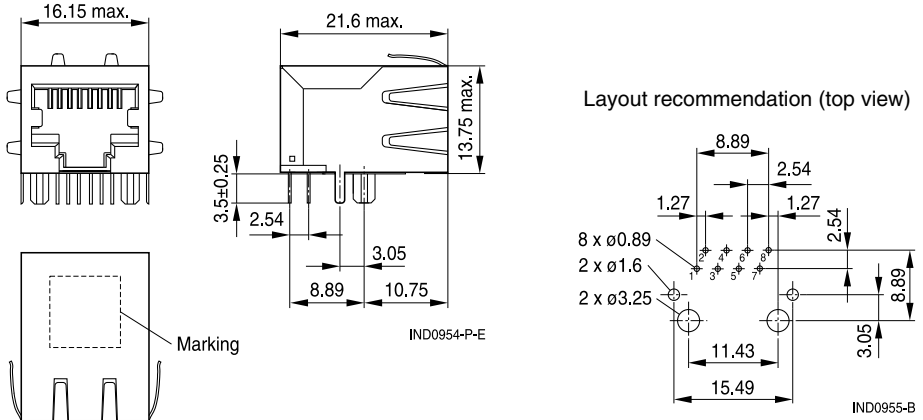
**Dimensional drawing for B78477P1001A314**

**Layout recommendation (top view)**


Dimensions in mm

Values without tolerances are nominal values for reference.

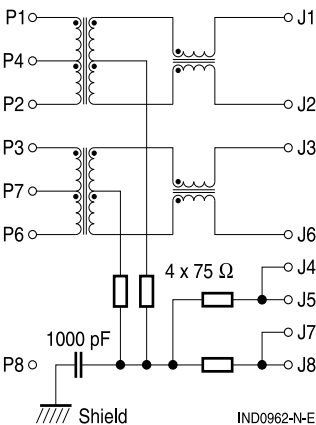
**Pinning**




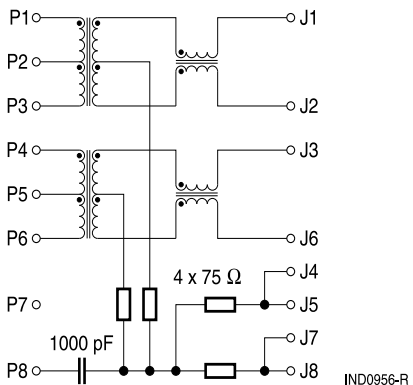
**Dimensional drawing for B78477P1002A014 and B78477P1003A014**


Dimensions in mm

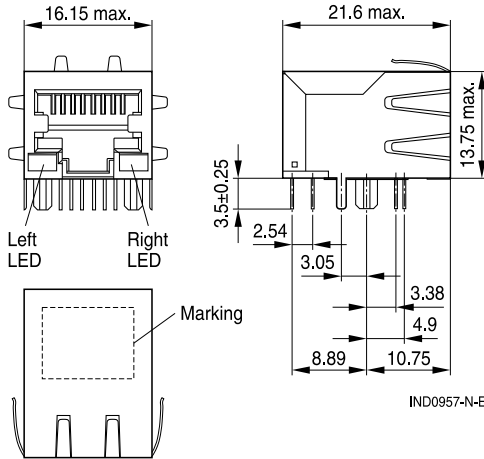
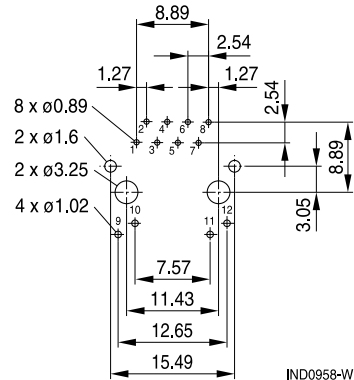
Values without tolerances are nominal values for reference.

**Pinnings**
**B78477P1002A014**


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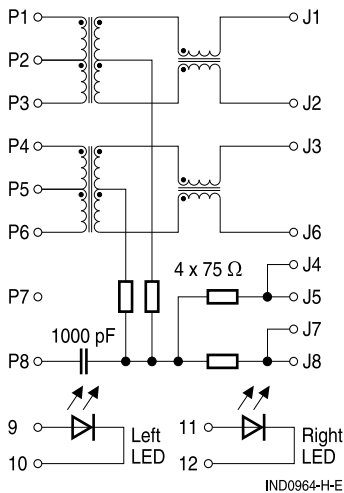
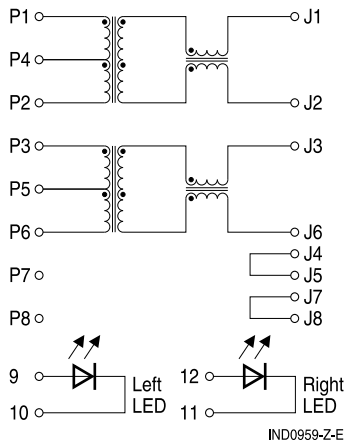
**B78477P1003A014**


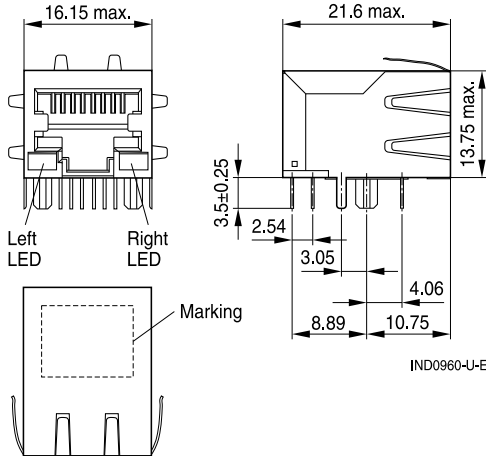
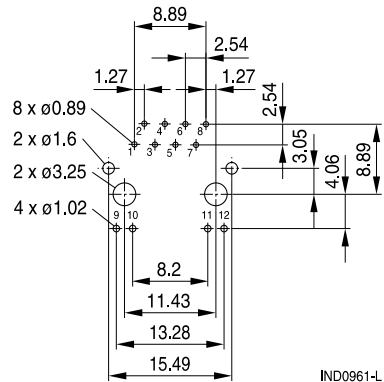
IND0956-R

**Dimensional drawing for B78477P100A314 and B78477P1005A314**

**Layout recommendation (top view)**


Dimensions in mm

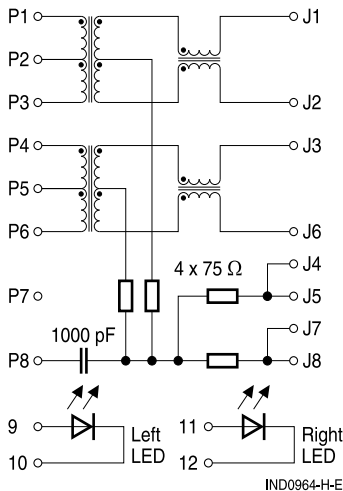
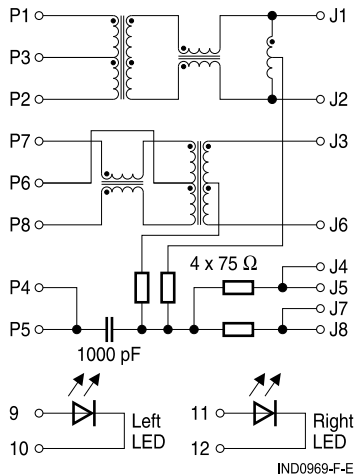
Values without tolerances are nominal values for reference.

**Pinnings**
**B78477P100A314**

**B78477P1005A314**


**Dimensional drawing for B78477P1006A114 and B78477P1007A114**

**Layout recommendation (top view)**


Dimensions in mm

Values without tolerances are nominal values for reference.

**Pinnings**
**B78477P1006A114**

**B78477P1007A114**


### 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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