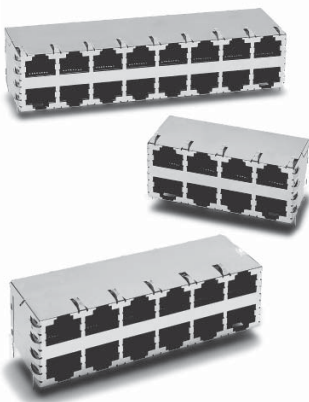


# PulseJack™ 2xN Gigabit

US Patent #7241181

## Description:

10/100/1000 Base-T RJ45 2xN Integrated Connector with Magnetics, designed to support such applications as: Switches, Routers, Servers and Hub.



## Features and Benefits:

- ⌚ RoHS peak wave solder temperature rating 260°C
- ⌚ Suitable for CAT 3, 5, 6 UTP cable or better
- ⌚ 350μH minimum OCL with 8mA bias current
- ⌚ High performance for maximum EMI suppression
- ⌚ Meets or exceeds IEEE 802.3ab standard for 1000Base-T

## Electrical Specifications @ 25°C - Operating Temperature 0°C to +70°C

| RoHS Compliant Part Number | Number of Ports | Insertion Loss TX/RX (dB MIN) | Return Loss (dB TYP)<br>100Ω (± 15 Ω) |        |         |          | Crosstalk (dB TYP) |            |          | Common Mode Rejection (dB TYP) |       | Hipot (Vdc MIN) |
|----------------------------|-----------------|-------------------------------|---------------------------------------|--------|---------|----------|--------------------|------------|----------|--------------------------------|-------|-----------------|
|                            |                 | 1-125 MHz                     | 1-40 MHz                              | 60 MHz | 100 MHz | 1-10 MHz | 30-60 MHz          | 60-100 MHz | 1-10 MHz | 10-150 MHz                     | I MIN |                 |
| JCO-0131NL                 | 2x4             | -0.8                          | -20                                   | -17    | -14     | -40      | -35                | -30        | -50      | -40                            | 2250  |                 |
| JCO-0132NL                 | 2x6             | -0.8                          | -20                                   | -17    | -14     | -40      | -35                | -30        | -50      | -40                            | 2250  |                 |
| JCO-0133NL                 | 2x8             | -0.8                          | -20                                   | -17    | -14     | -40      | -35                | -30        | -50      | -40                            | 2250  |                 |

## Notes:

1. Contact Pulse for LED options.

## RJ45 Durability Testing Rating

| Part Number | Mating Force (MAX) | Unmating Force (MAX) | Durability     | Plug to Jack Retention (MIN) |
|-------------|--------------------|----------------------|----------------|------------------------------|
| JCO Series  | 5 lbs./2.268 kgs.  | 5 lbs./2.268 kgs.    | 750 Insertions | 20 lbs./9.072 kgs.           |

## RJ45 Material Specification

| Part Number | Shield   |                                       | Contact         |   |                  | Housing       |               |                  |
|-------------|----------|---------------------------------------|-----------------|---|------------------|---------------|---------------|------------------|
|             | Material | Finish                                | Material        | Plating Area                              | Solder Area      | Material      | Specification | MSL <sup>2</sup> |
| JCO Series  | Brass    | 10-20μ inches thick Nickel over brass | Phosphor Bronze | 30μ inches gold over 30-80μ inches nickel | Tin matte finish | Thermoplastic | UL 94 V-0     | 1                |

**Notes:** 1. Connector dimensions comply with FCC dimension requirements 2. MSL = Moisture Sensitivity Level rating from 1 to 5 (highest rating = 1, lowest rating = 5).

USA 858 674 8100

Germany 49 7032 7806 0

Singapore 65 6287 8998

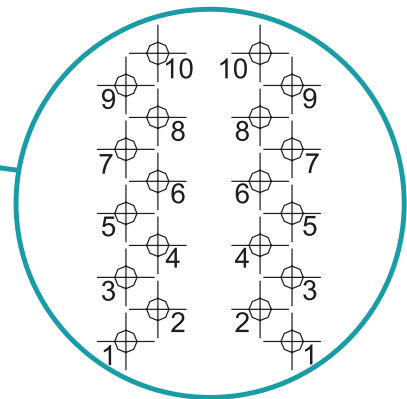
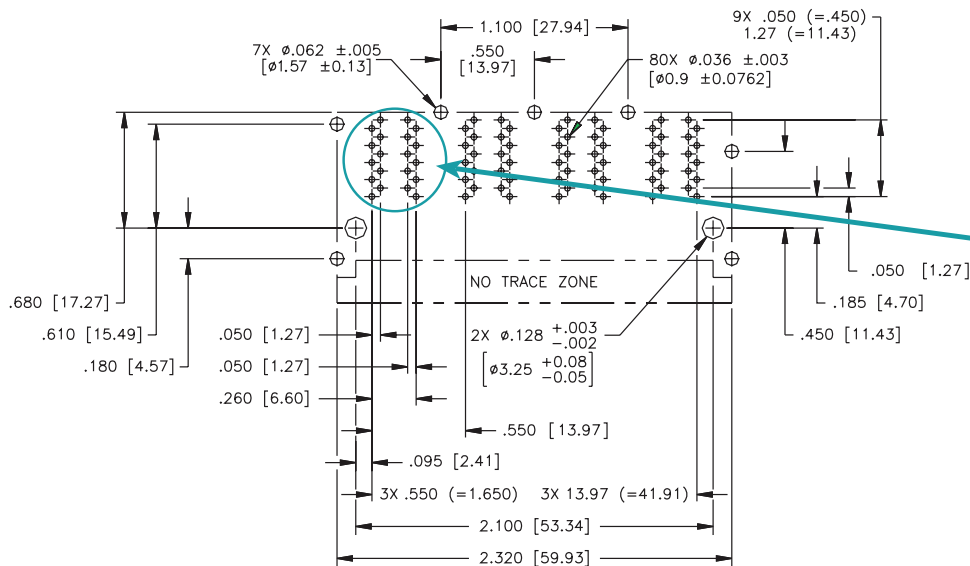
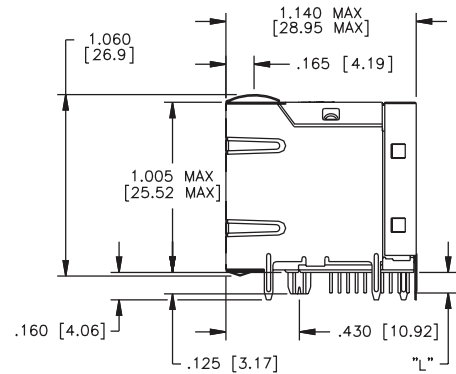
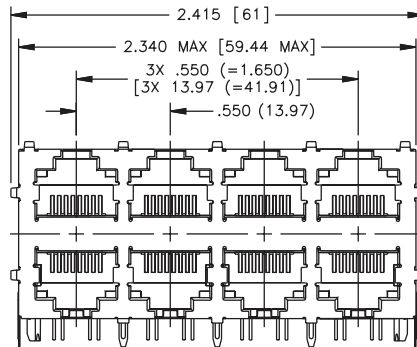
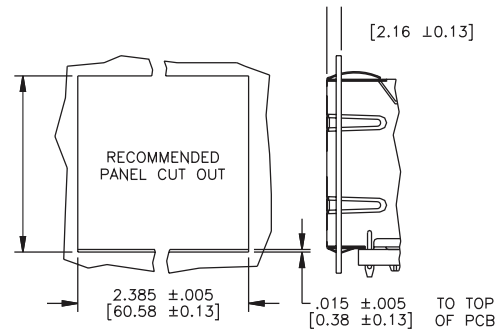
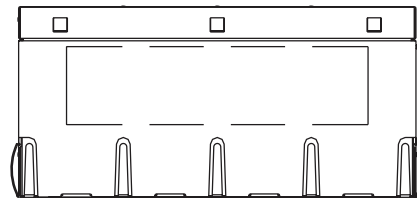
Shanghai 86 21 62787060

China 86 755 33966678

Taiwan 886 3 4356768

2X4 Mechanicals (No LEDs)

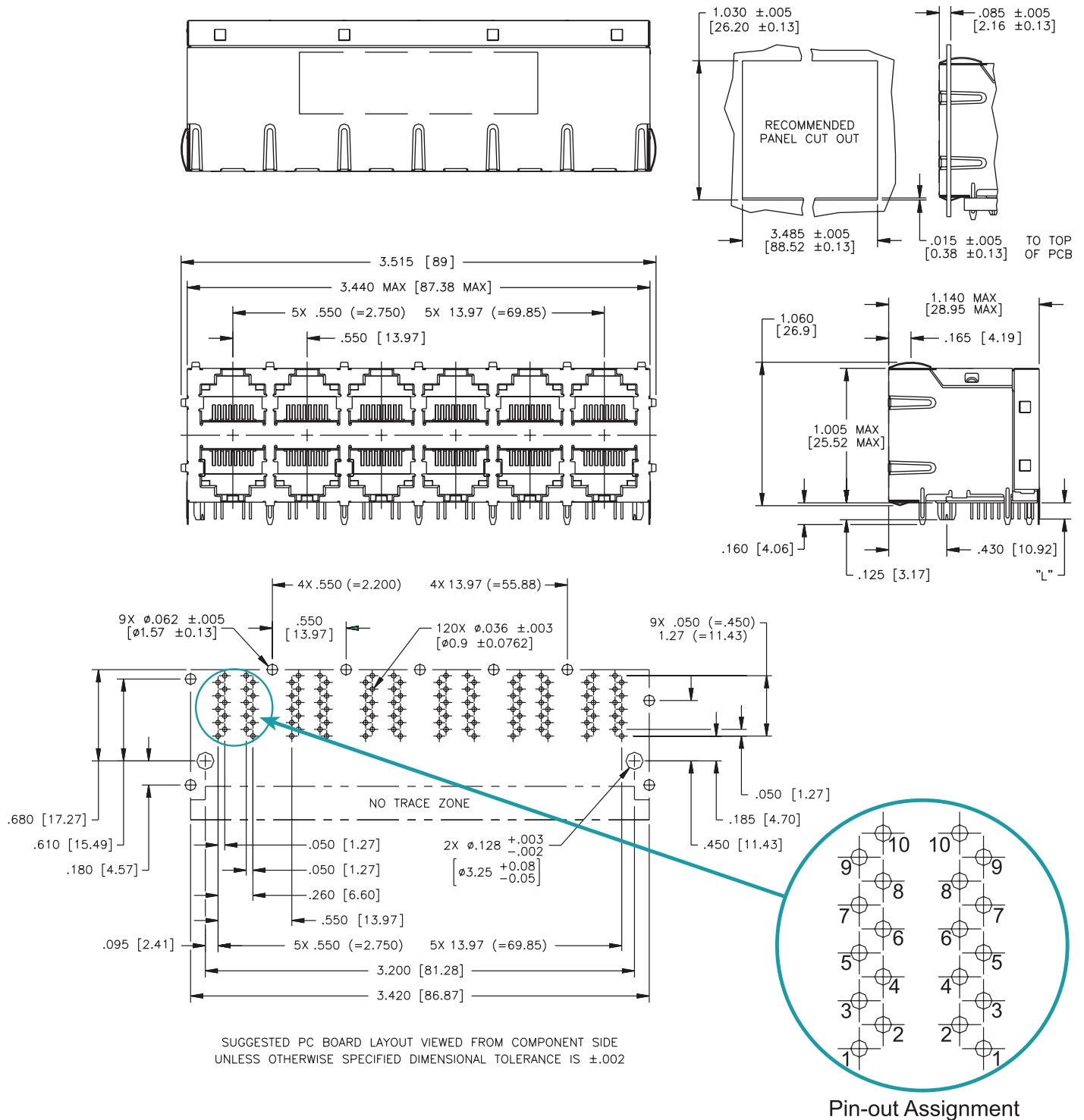
JCO-0131NL



SUGGESTED PC BOARD LAYOUT VIEWED FROM COMPONENT SIDE  
UNLESS OTHERWISE SPECIFIED DIMENSIONAL TOLERANCE IS ±.002

2X6 Mechanicals (No LEDs)

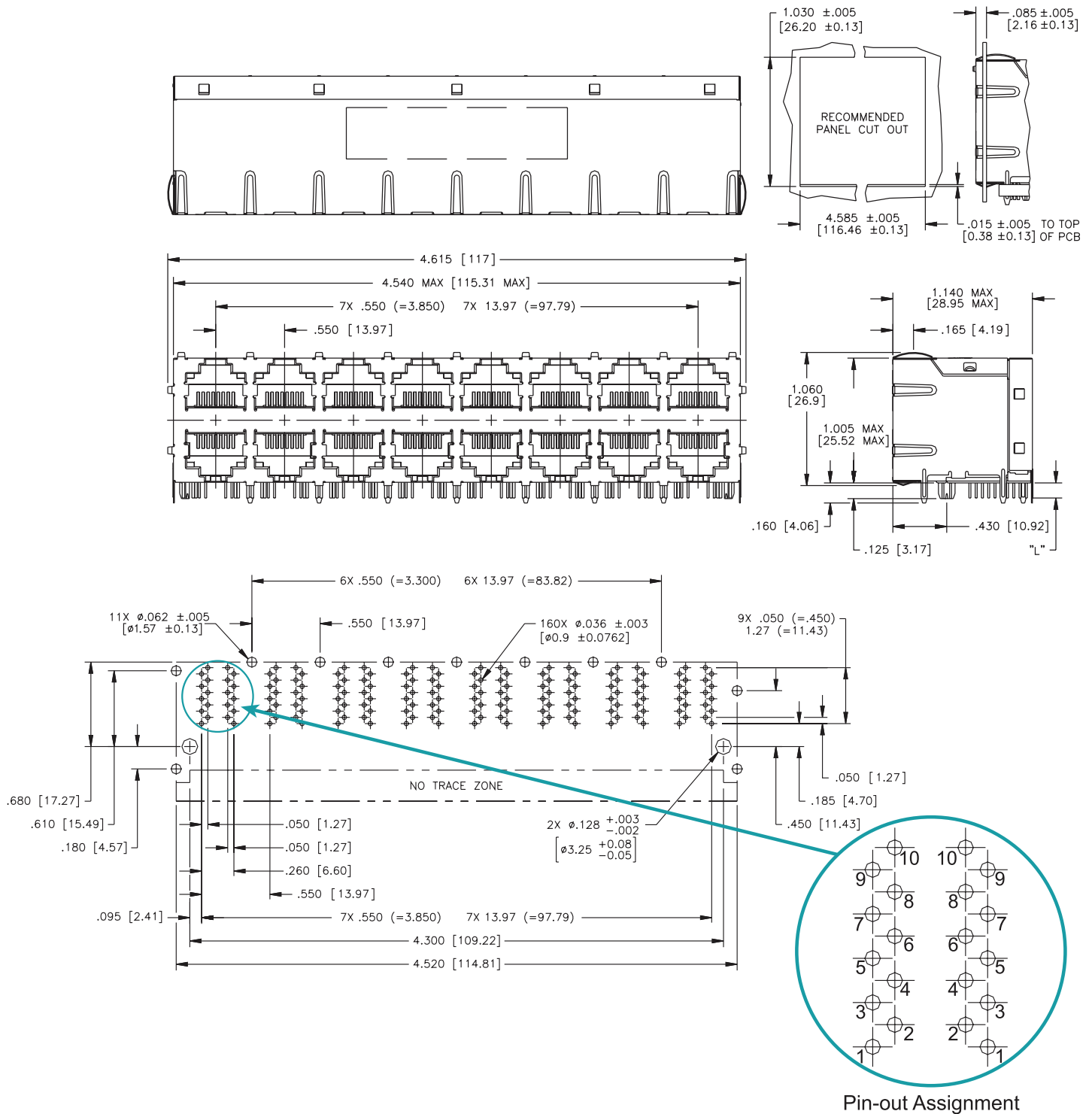
JCO-0132NL



Pin-out Assignment

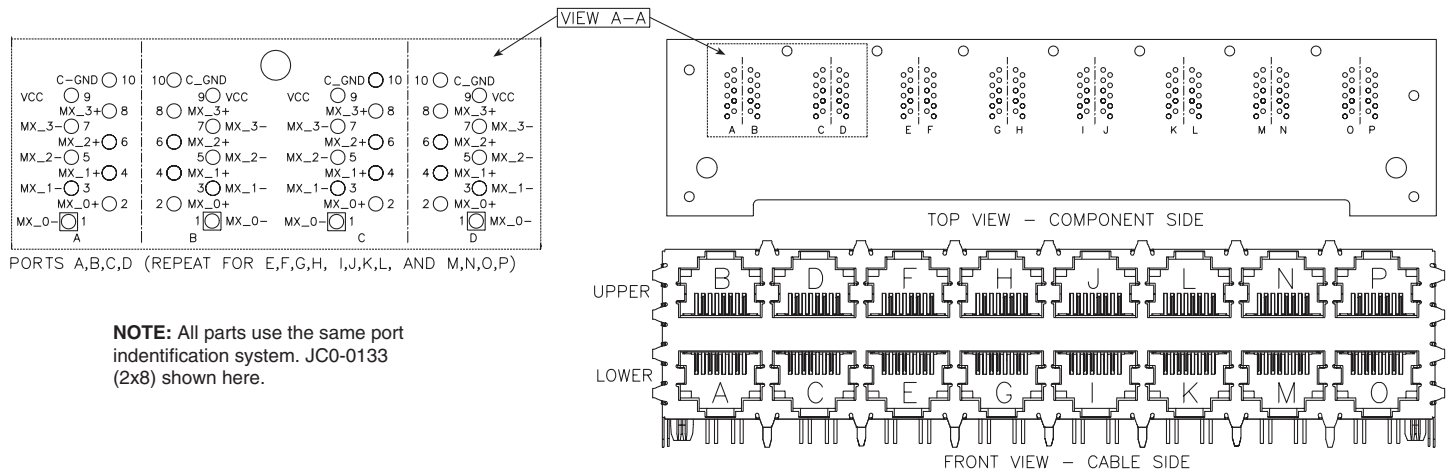
## Mechanicals

**JCO-0133NL**

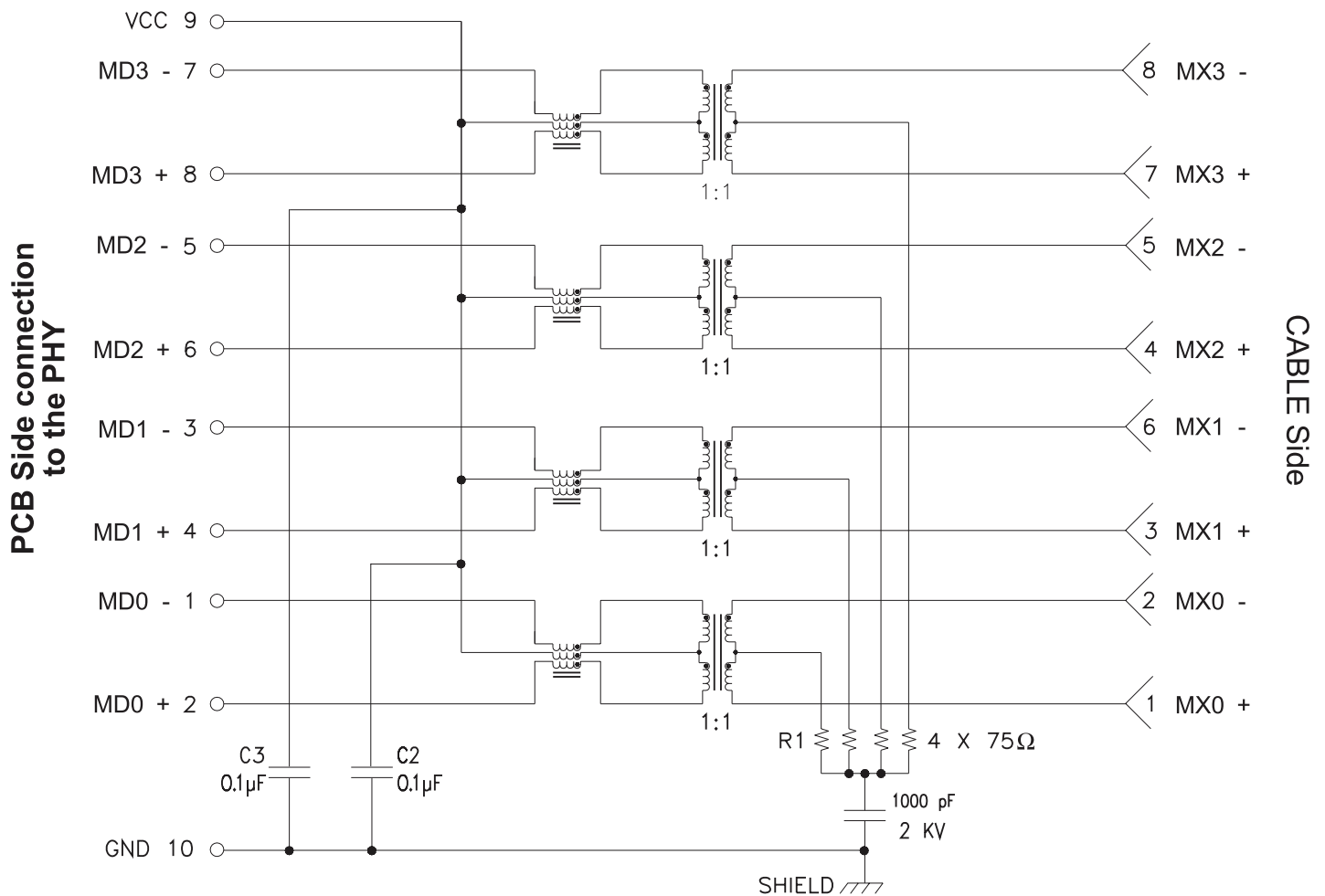


## Pin-out Assignment

JC0-0131NL/32NL/33NL



## Schematic



# PulseJack™ 2xN Gigabit

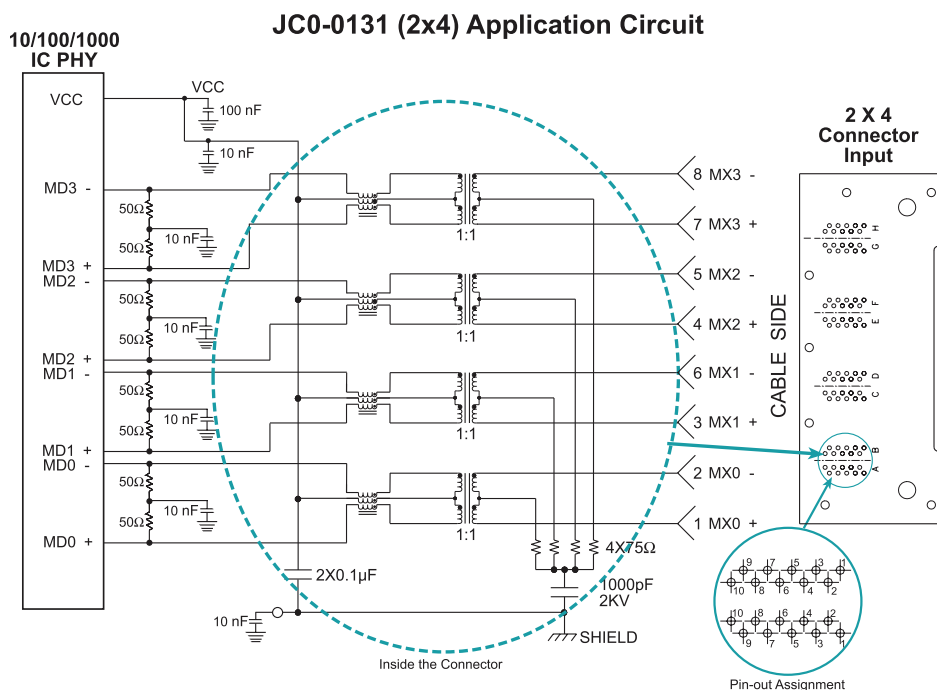
US Patent #7241181

## 2XN Gigabit Application Note

These Integrated Connector Modules are specifically designed for the implementation of a 10Base-T, 100Base-TX and 1000Base-TX transmission over data-grade unshielded twisted pair cable (UTP-3, 5-5e and 6).

The connectors category provide excellent EMI filtering and are suitable for Embedded Systems and Multiport Applications. Pulse has worked closely with the leading IC manufacturers in providing these 10/100/1000 solutions, thereby assuring compatibility with each transceiver.

JCO series meet the stringent open circuit inductance requirements imposed by IEEE. When an 8mA DC current is applied across the transformer windings, the transformer will provide at least 350  $\mu$ H of open circuit inductance. The transformers used in each module also provide 2250Vdc minimum isolation, wide band width with minimal attenuation and fast rise times to minimize system level jitter.



### Notes:

- For maximum EMI suppression (electromagnetic interference) place the decoupling capacitors adjacent to Vcc and 50  $\Omega$  connections.
- Connections to ground should be as short as possible.
- Connections between 10/100/1000 IC and the connector should be direct (ideally no change in direction) and of minimum length.

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