

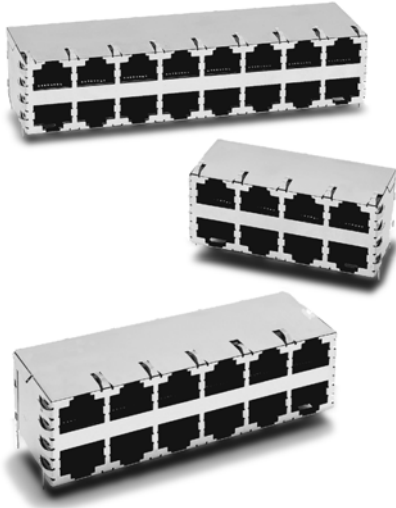
# PULSEJACK™ 2XN RJ45 Connector



## Description:

10/100 Base-TX RJ45 2XN Tab-UP with or without LEDs (J2 series) integrated magnetics connector (ICM), designed to support applications, such as Hub and Switches and Power over Ethernet enabled switch/hub systems.

## Features and Benefits:



- Ⓢ RoHS-5 peak wave solder temperature rating 235°C
- Ⓢ RoHS-6 peak wave solder temperature rating 260°C
- Ⓢ 2XN RJ45 with internal magnetics
- Ⓢ Available with or without LEDs
- Ⓢ **Power over Ethernet (PoE) Enabled. Compatible to IEEE 802.3af standard**
- Ⓢ Suitable for CAT 5 & 6 Fast Ethernet Cable or better UTP
- Ⓢ Internal magnetics are 100% electrically tested for HI-POT and functionality

## Electrical Performance Summary:

- Ⓢ Internal magnetics options available
- Ⓢ **Meets or exceeds IEEE 802.3i/u/af standard**
- Ⓢ 350µH minimum OCL with 8mA bias current
- Ⓢ High performance for maximum EMI suppression
- Ⓢ **Minimum 1500 Vrms isolation per IEEE 802.3i/u/af requirement**

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

RoHS-5 <sup>1,6</sup> Compliant Part No.	RoHS-6 <sup>7</sup> Compliant Part No.	No. of Ports	Turns <sup>2</sup> Ratios		LEDs <sup>3</sup>  L/R	PoE <sup>4</sup> Enabled	Insertion Loss (dB TYP)		Return Loss (dB TYP) 100Ω ±15Ω			Crosstalk (dB TYP)			Common Mode Rejection (dB TYP)	
			TX	RX			1-65 MHz	1-10 MHz	10-30 MHz	30-60 MHz	60-80 MHz	1-30 MHz	30-60 MHz	60-100 MHz	1-50 MHz	50-150 MHz
J2039H3 (A,B,C)	-	8,12,16	1CT:1CT	1CT:1CT	None	No	-1	-20	-16	-12	-12	-40	-35	-30	-30	-20
J2042H3 (A,B,C)	-	8,12,16	1CT:1CT	1CT:1CT	None	No	-1	-20	-16	-12	-12	-40	-35	-30	-30	-20
J2045H3 (A,B,C)	-	8,12,16	1CT:1CT	1CT:1CT	None	No	-1	-20	-16	-12	-12	-40	-35	-30	-30	-20
J20-0013	J20-0013NL	4	1CT:1CT	1CT:1CT	G/Y, G/Y	No	-1	-20	-16	-12	-12	-40	-35	-30	-30	-20
J20-0014	J20-0014NL	8	1CT:1CT	1CT:1CT	G/Y, G/Y	No	-1	-20	-16	-12	-12	-40	-35	-30	-30	-20
J20-0015	-	12	1CT:1CT	1CT:1CT	G/Y, G/Y	No	-1	-20	-16	-12	-12	-40	-35	-30	-30	-20
J20-0016	-	16	1CT:1CT	1CT:1CT	G/Y, G/Y	No	-1	-20	-16	-12	-12	-40	-35	-30	-30	-20
J20-0017 <sup>5</sup>	-	8	1CT:1CT	1CT:1CT	None	Yes	-1	-20	-16	-12	-12	-40	-35	-30	-30	-20
J20-0019 <sup>5</sup>	-	12	1CT:1CT	1CT:1CT	None	Yes	-1	-20	-16	-12	-12	-40	-35	-30	-30	-20

- Notes: 1. Part numbers code (A,B,C, D): A = 2x4, B = 2x6, C = 2x8, D = 2x2  
 2. Both transmit and receive channels meet IEEE 802.3 specifications.  
 3. Bi-color LEDs: G = green; Y = yellow for each port  
 4. PoE = Power over Ethernet Compatible product, compliant to IEEE 802.3af standard, providing minimum 1.5Kv isolation  
 5. Contact Pulse for PoE enabled product with LEDs.  
 6. **RoHS-5** - Product does not contain 5 out of the 6 banned substances specified in the RoHS directive. Product contains lead in applications considered as solders.  
 7. **RoHS-6** - Product does not contain 5 out of the 6 banned substances specified in the RoHS directive. Some internal connections may contain lead in high temperature solder (solder alloys containing more than 85% lead).

## RJ45 Durability Testing Rating

Part Number	Mating Force (MAX)	Unmating Force (MAX)	Durability	Plug to Jack Retention (MIN)
J2 Series	5lbs./2.268kgs.	5lbs./2.268kgs.	750 Insertions	20lbs./9.072kgs.

## RJ45 Material Specification

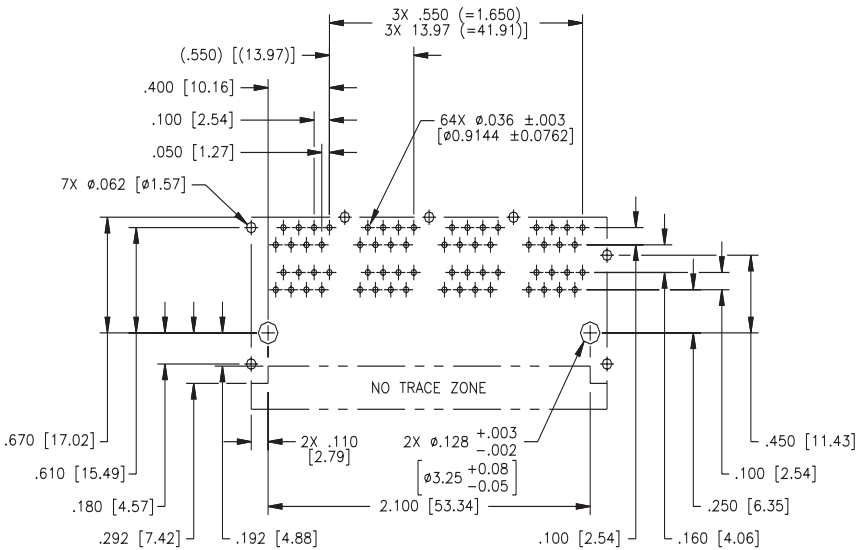
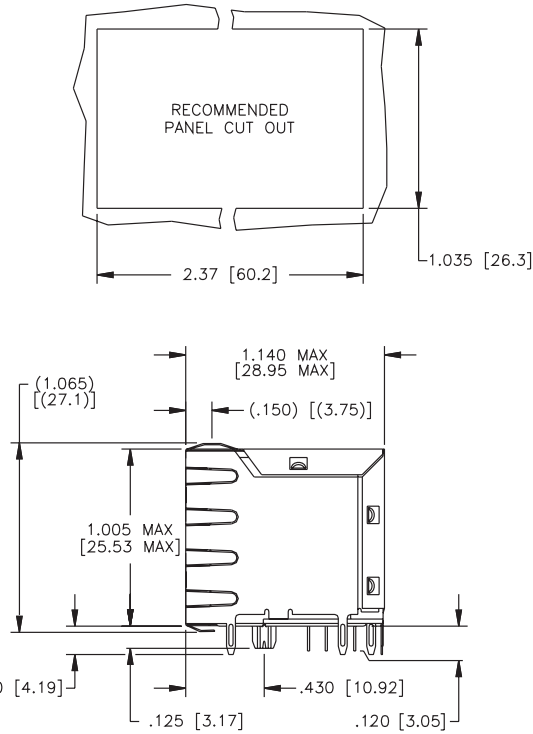
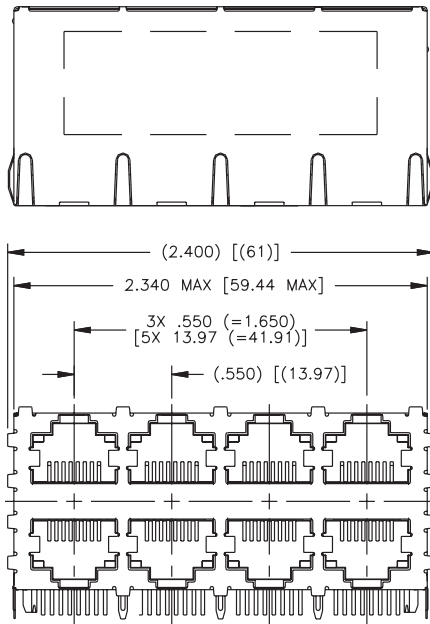
Part Number	Shield		Contact			Housing	
	Material	Finish	Material	Plating Area	Solder Area	Material	Specification
J2 Series	Brass	10-20m inches Nickel over 10-20m inches Brass	Phosphor Bronze	Nickel underplating and selective gold plating 30µ inches	120µ inches Sn90/Pb10 over 50µ inches nickel	Thermoplastic	UL 94 V-0

Notes: 1. All connector part numbers starting with the series prefix J2 comply to the above limits. 2. Connector dimensions comply with FCC dimension requirements.

USA 858 674 8100 • UK 44 1483 401 700 • France 33 3 84 35 04 04 • Singapore 65 6287 8998 • Shanghai 86 21 54643211 / 2 • China 86 769 85538070 • Taiwan 886 3 4641811

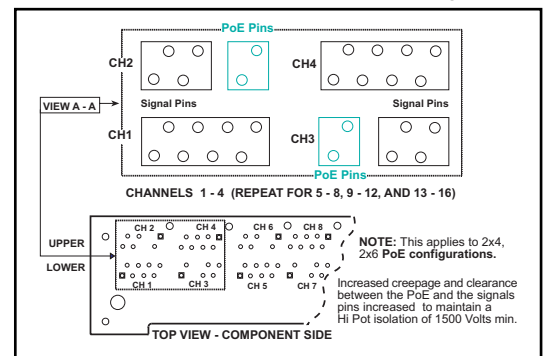
### J2 Series (No LEDs) Mechanicals (available PoE Enabled)

2 X 4



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

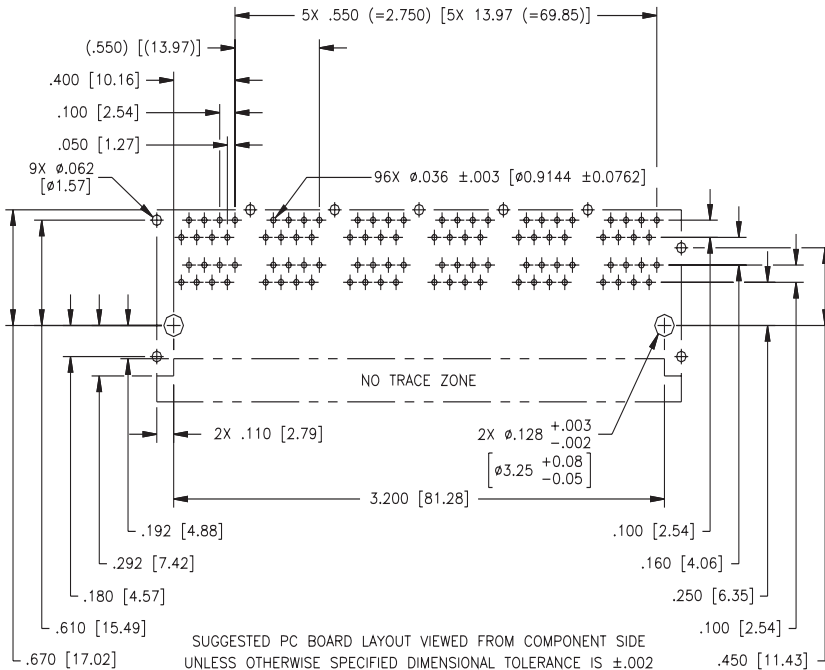
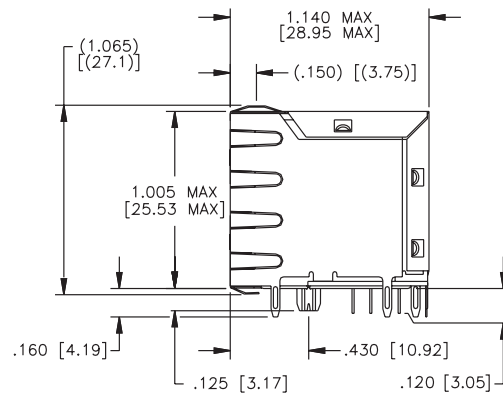
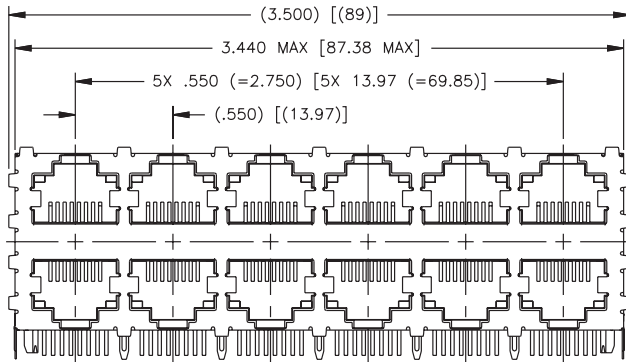
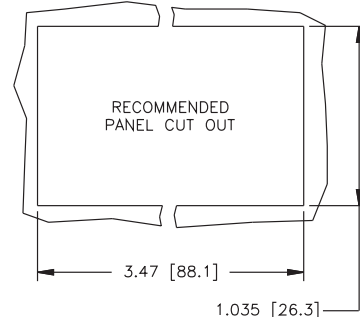
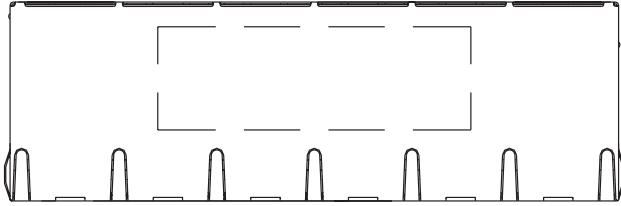
### PoE Enabled Connector Pin Out Assignment



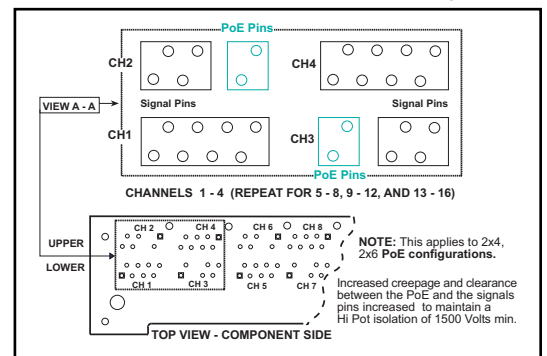
Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
 Unless otherwise specified,  
 all tolerances are  $\pm$   $\frac{.010}{0,25}$

### J2 Series (No LEDs) Mechanicals (available PoE Enabled)

**2 X 6**



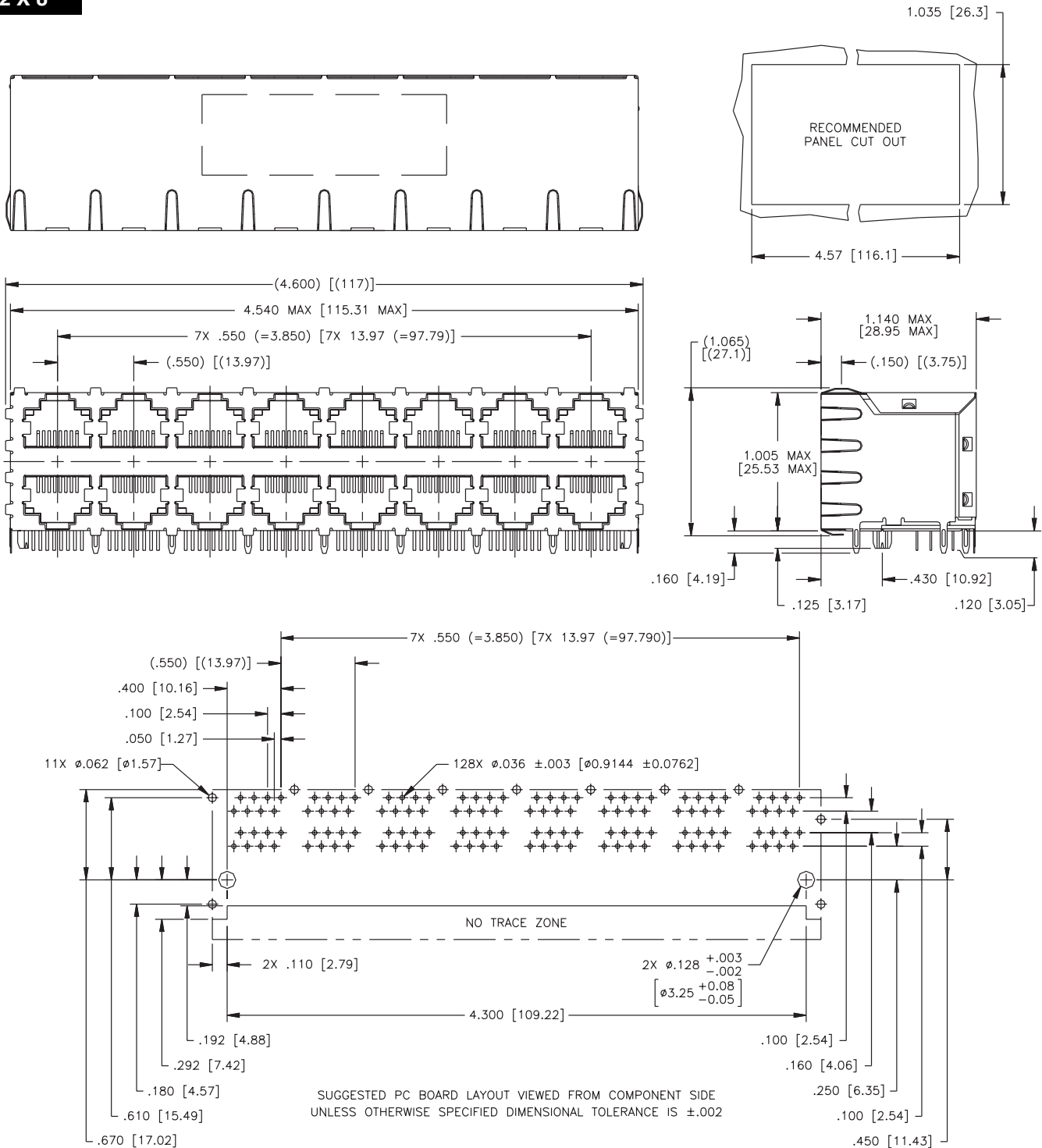
### PoE Enabled Connector Pin Out Assignment



Dimensions: Inches  
mm  
Unless otherwise specified,  
all tolerances are ± .010  
0,25

### J2 Series (No LEDs) Mechanicals (not PoE Enabled)

2 X 8

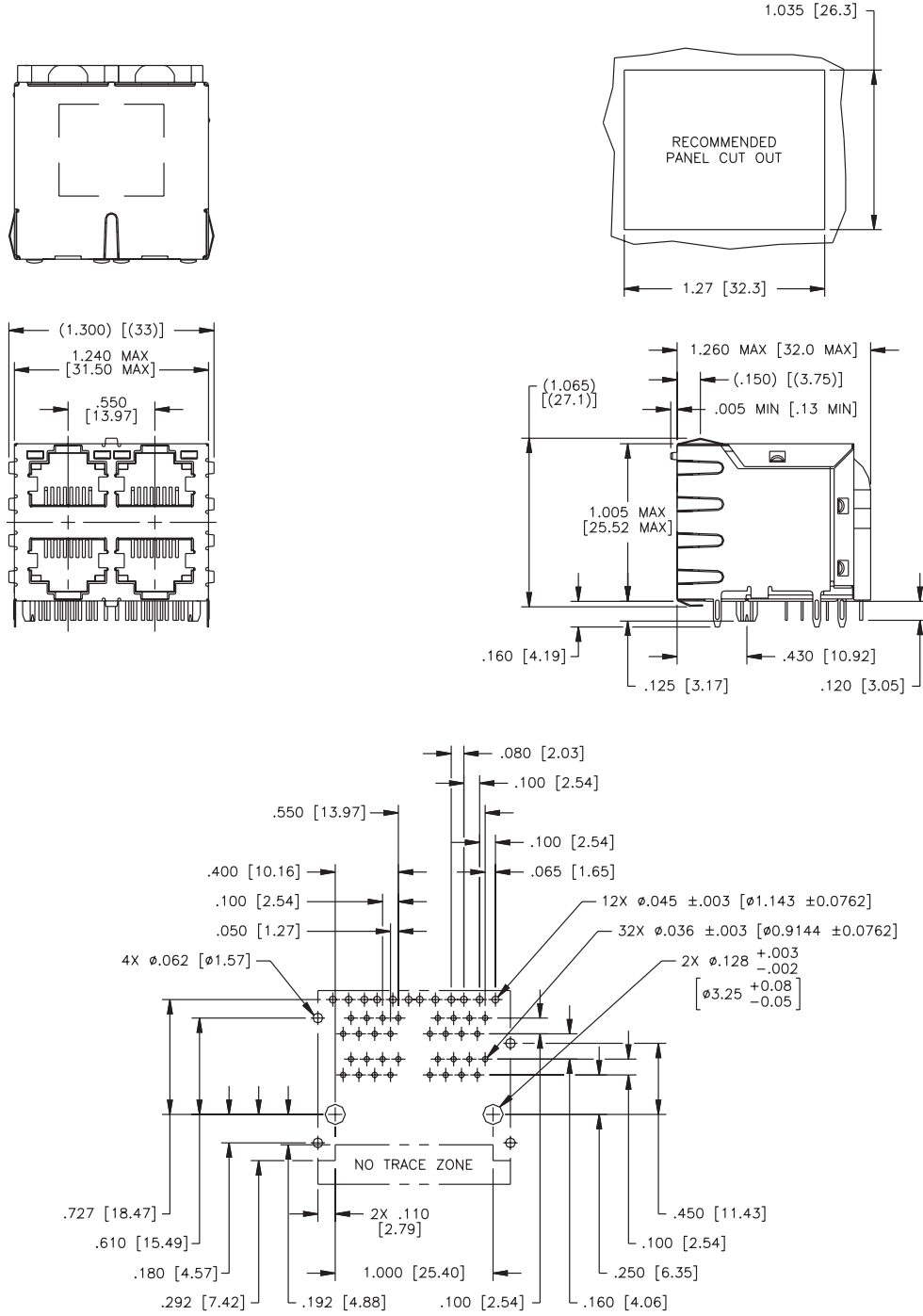


SUGGESTED PC BOARD LAYOUT VIEWED FROM COMPONENT SIDE  
 UNLESS OTHERWISE SPECIFIED DIMENSIONAL TOLERANCE IS  $\pm$ .002

Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
 Unless otherwise specified, all tolerances are  $\pm \frac{.010}{0,25}$

### J2 Series (With LEDs) Mechanicals (not PoE Enabled)

**2 X 2**



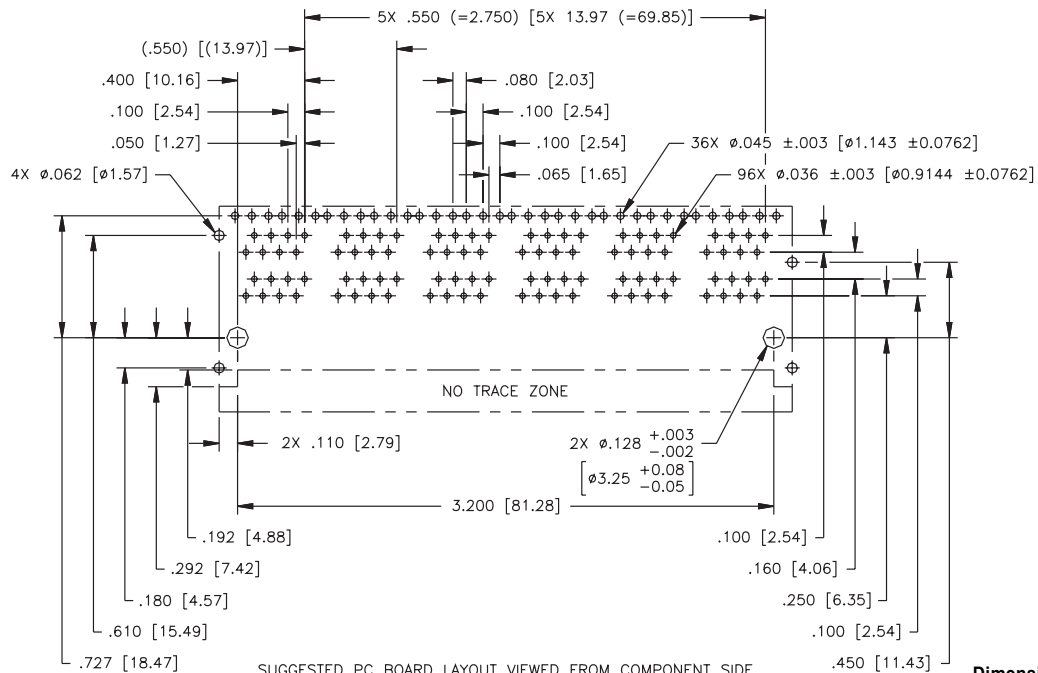
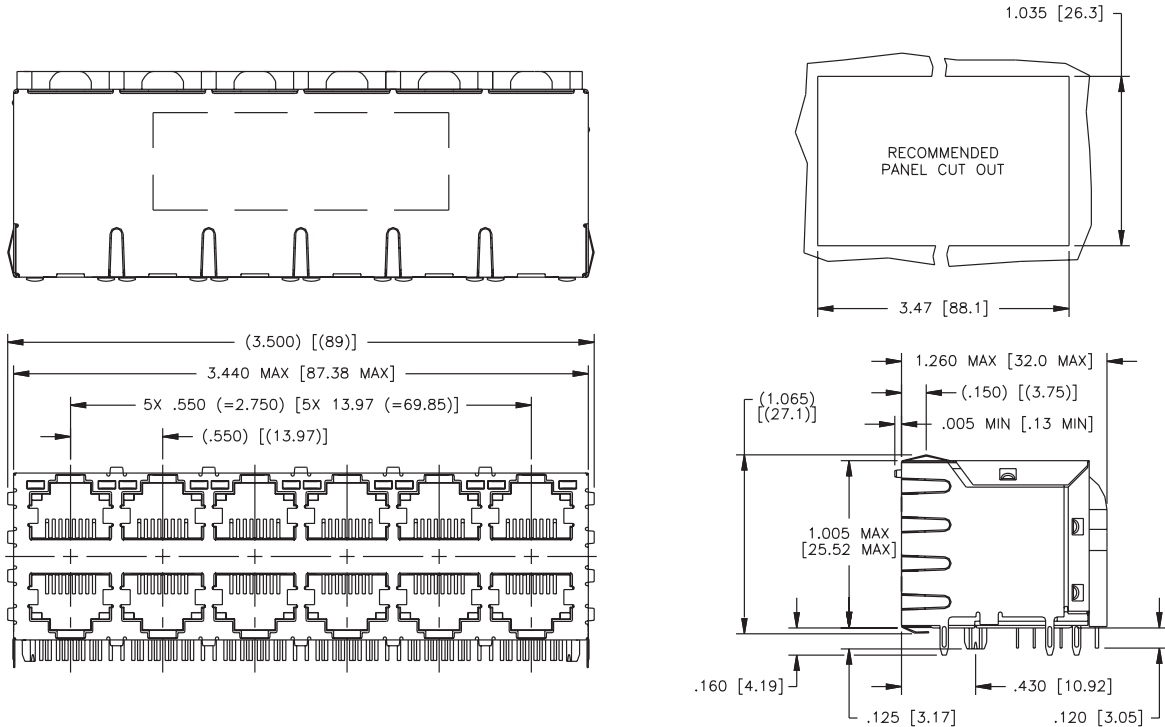
SUGGESTED PC BOARD LAYOUT VIEWED FROM COMPONENT SIDE  
UNLESS OTHERWISE SPECIFIED DIMENSIONAL TOLERANCE IS  $\pm 0.02$

**Dimensions:** Inches  
mm  
Unless otherwise specified,  
all tolerances are  $\pm \frac{.010}{0,25}$



### J2 Series (With LEDs) Mechanicals (not PoE Enabled)

2 X 6



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

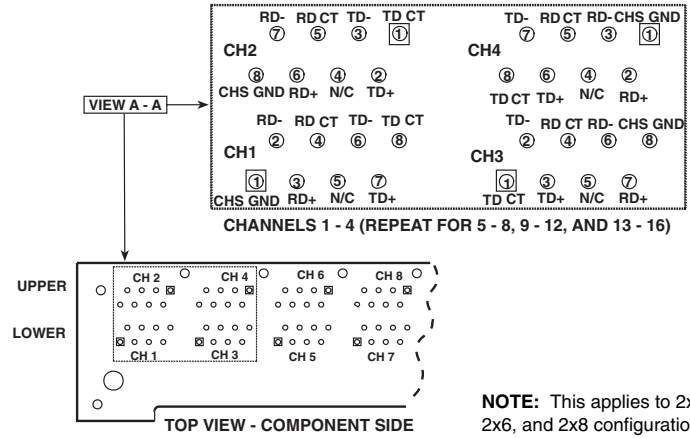
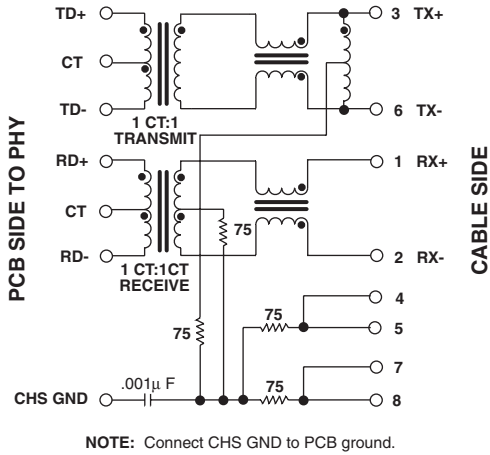
Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
Unless otherwise specified,  
all tolerances are  $\pm \frac{.010}{0,25}$



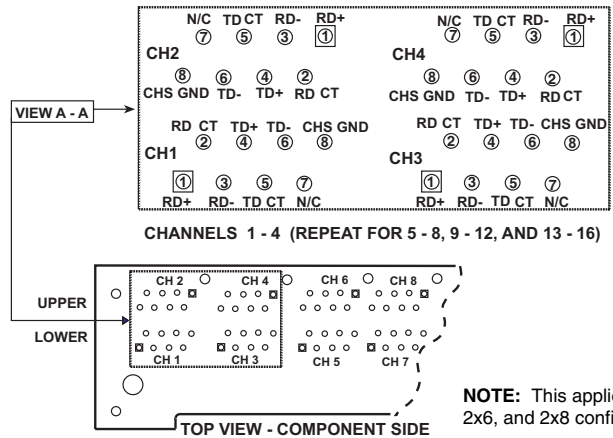
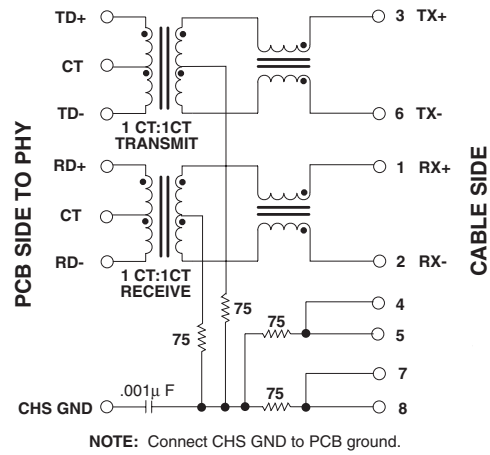


### J2 Series (No LEDs) Schematics (not PoE Enabled)

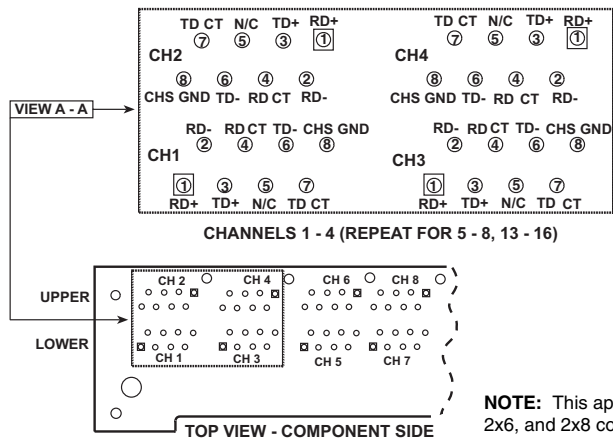
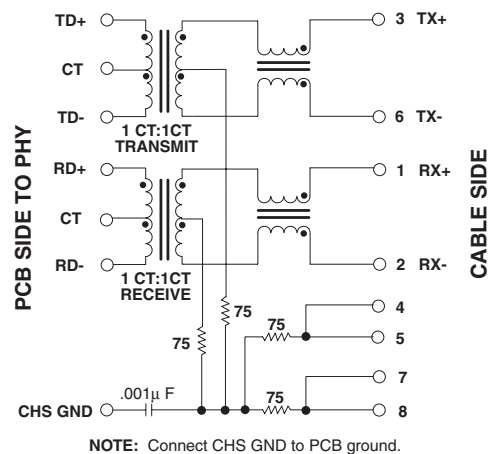
#### J2039



#### J2042



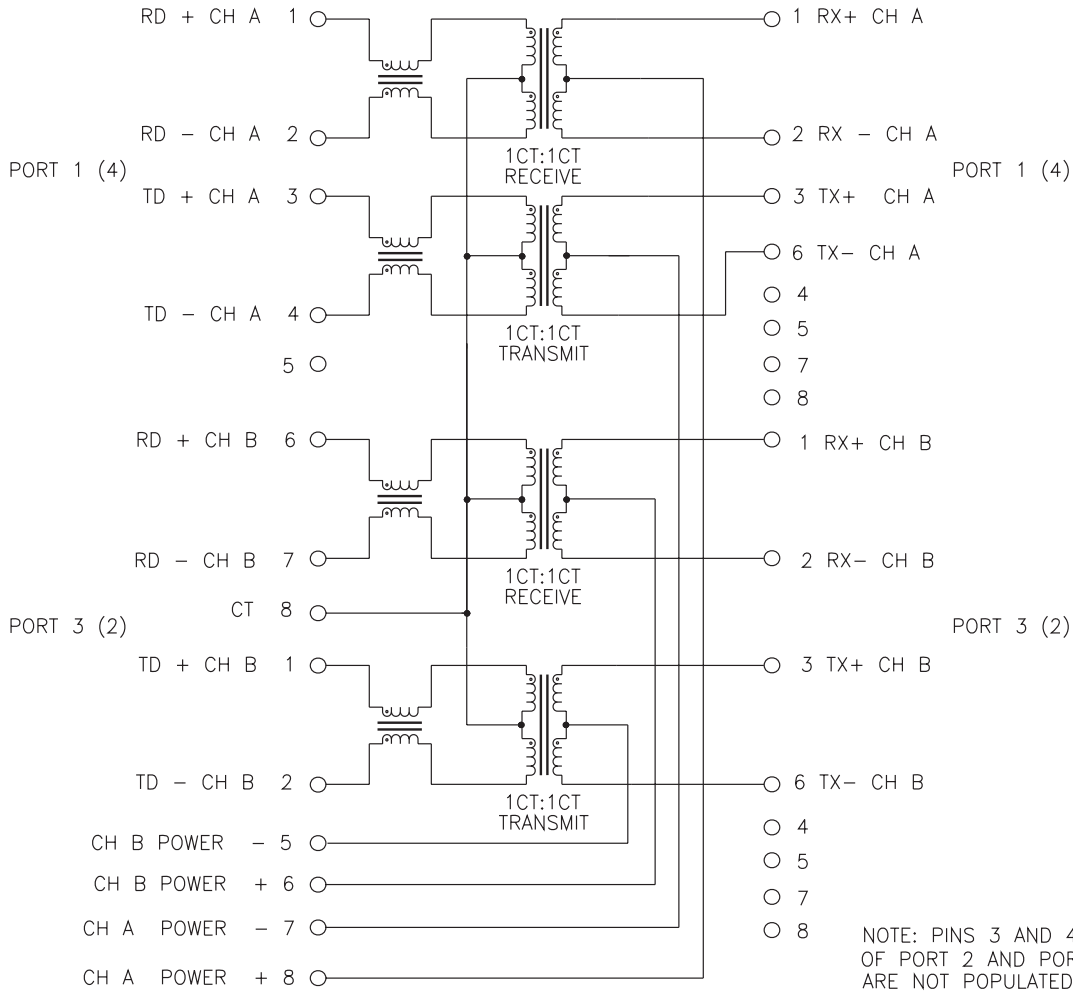
#### J2045



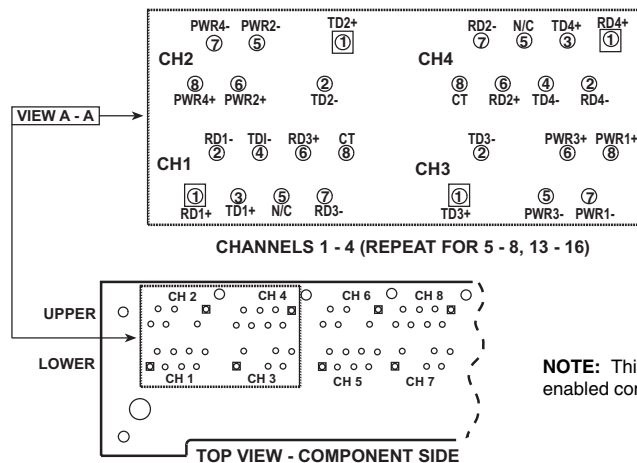
### J2 Series (No LEDs/PoE Enabled) Schematics

J20-0017/19

PCB SIDE



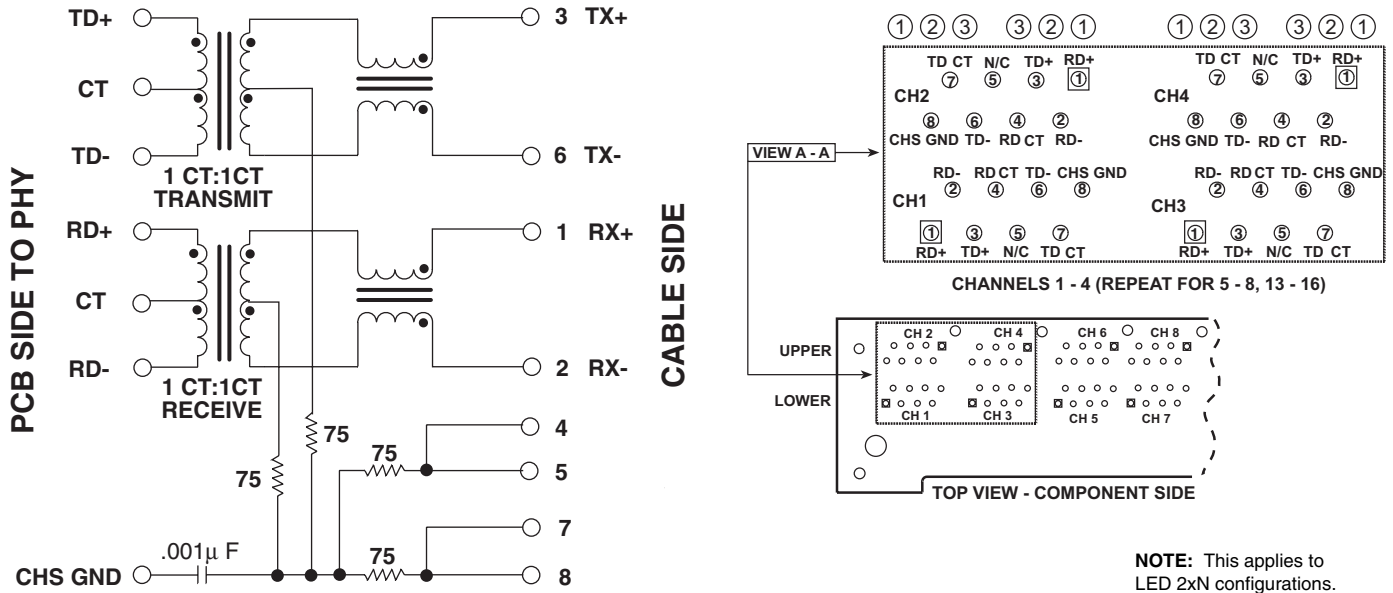
CABLE SIDE



**NOTE:** This applies to 2xN PoE enabled configurations.

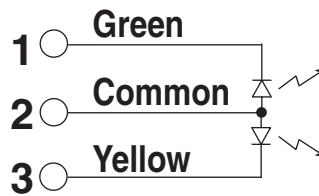
### J2 Series (With LEDs) Schematics (not PoE Enabled)

J20-0013/14/15/16



NOTE: Connect CHS GND to PCB ground.

### LED Configuration



Standard LED Color	LED Wavelength <sup>1</sup>	Forward <sup>2</sup> (V MAX)	Typical (V TYP)
Green	560 - 570 nm	2.5	2.1 - 2.2
Yellow	588 - 610 nm	2.5	2.1 - 2.2

1. LED intensity/wavelength measured with Photo Research PR-650 Colormeter  
 2. With a forward current of 20 mA

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