

# 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:

-  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**
-  350  $\mu$ H minimum OCL with 8 mA 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

Part <sup>1</sup> Number	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) 100 $\Omega$ $\pm$ 15 $\Omega$			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
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	4	1CT:1CT	1CT:1CT	G/Y, G/Y	No	-1	-20	-16	-12	-12	-40	-35	-30	-30	-20
J20-0014	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:**
- Part numbers code (A,B,C, D): A = 2x4, B = 2x6, C = 2x8, D = 2x2
  - Both transmit and receive channels meet IEEE 802.3 specifications.
  - Bi-color LEDs: G = green; Y = yellow for each port
  - PoE = Power over Ethernet Compatible product, compliant to IEEE 802.3af standard, providing minimum 1.5Kv isolation
  - Contact Pulse for PoE enabled product with LEDs.

### RJ45 Durability Testing Rating

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

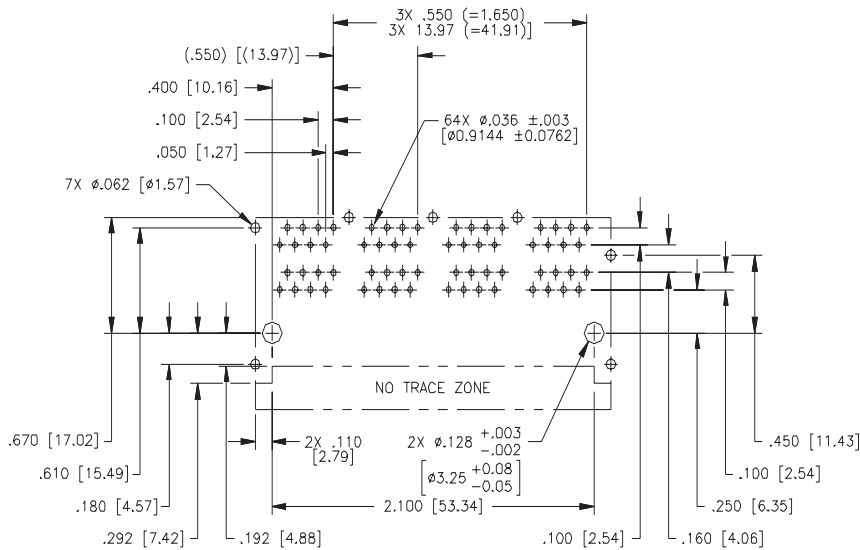
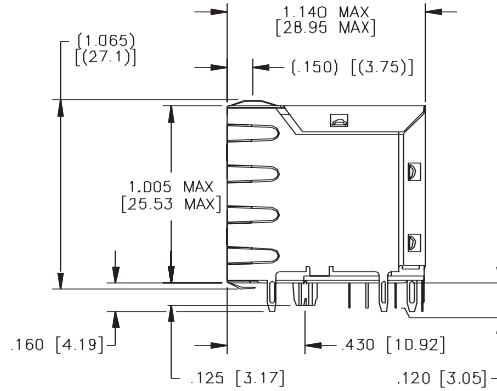
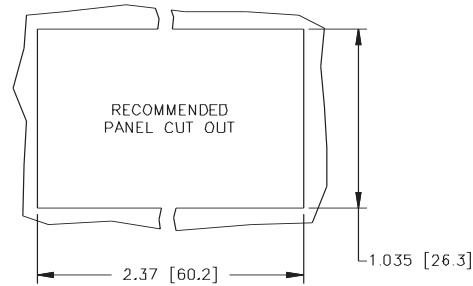
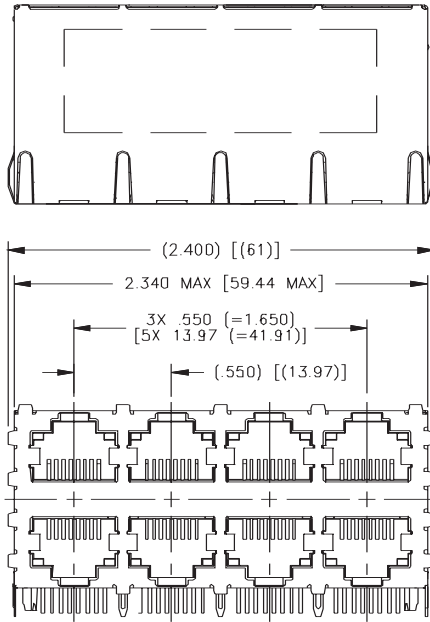
### RJ45 Material Specification

Part Number	Shield		Contact			Housing	
	Material	Finish	Material	Plating Area	Solder Area	Material	Specification
J2 Series	Brass	10-20m inches Nickel over 10-20m inches Brass	Phosphor Bronze	Nickel underplating and selective gold plating 30 $\mu$ inches	120 $\mu$ inches Sn90/Pb10 over 50 $\mu$ 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.

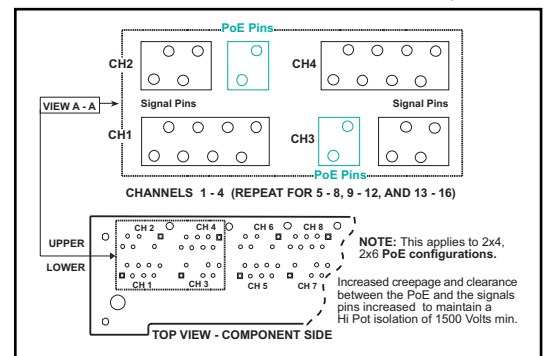
### J2 Series (No LEDs) Mechanicals (available PoE Enabled)

2 X 4



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

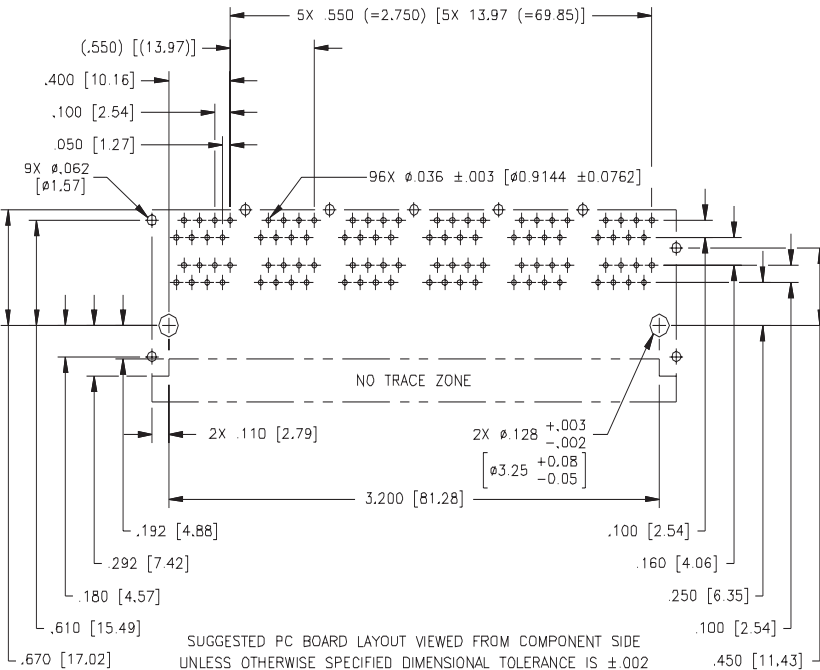
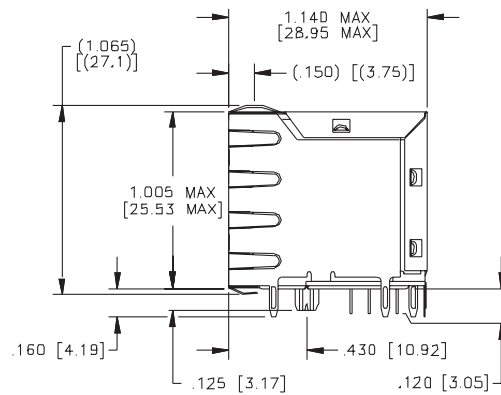
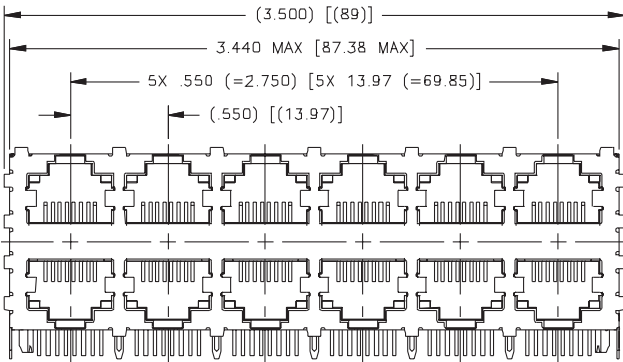
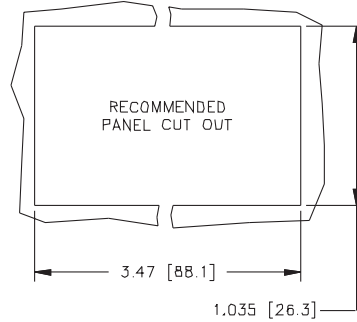
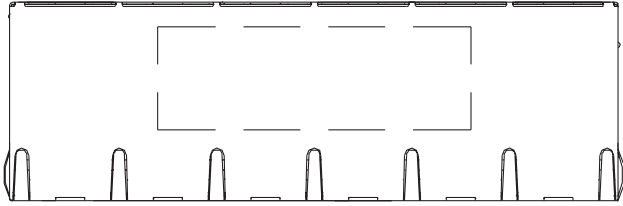
### PoE Enabled Connector Pin Out Assignment



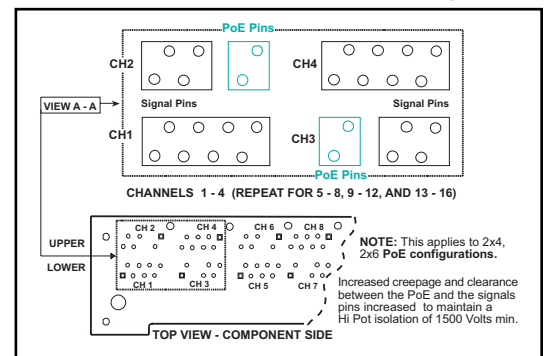
Dimensions:  $\frac{\text{Inches}}{\text{mm}}$   
 Unless otherwise specified,  
 all tolerances are  $\pm$   $\frac{.010}{0,25}$

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

**2 X 6**



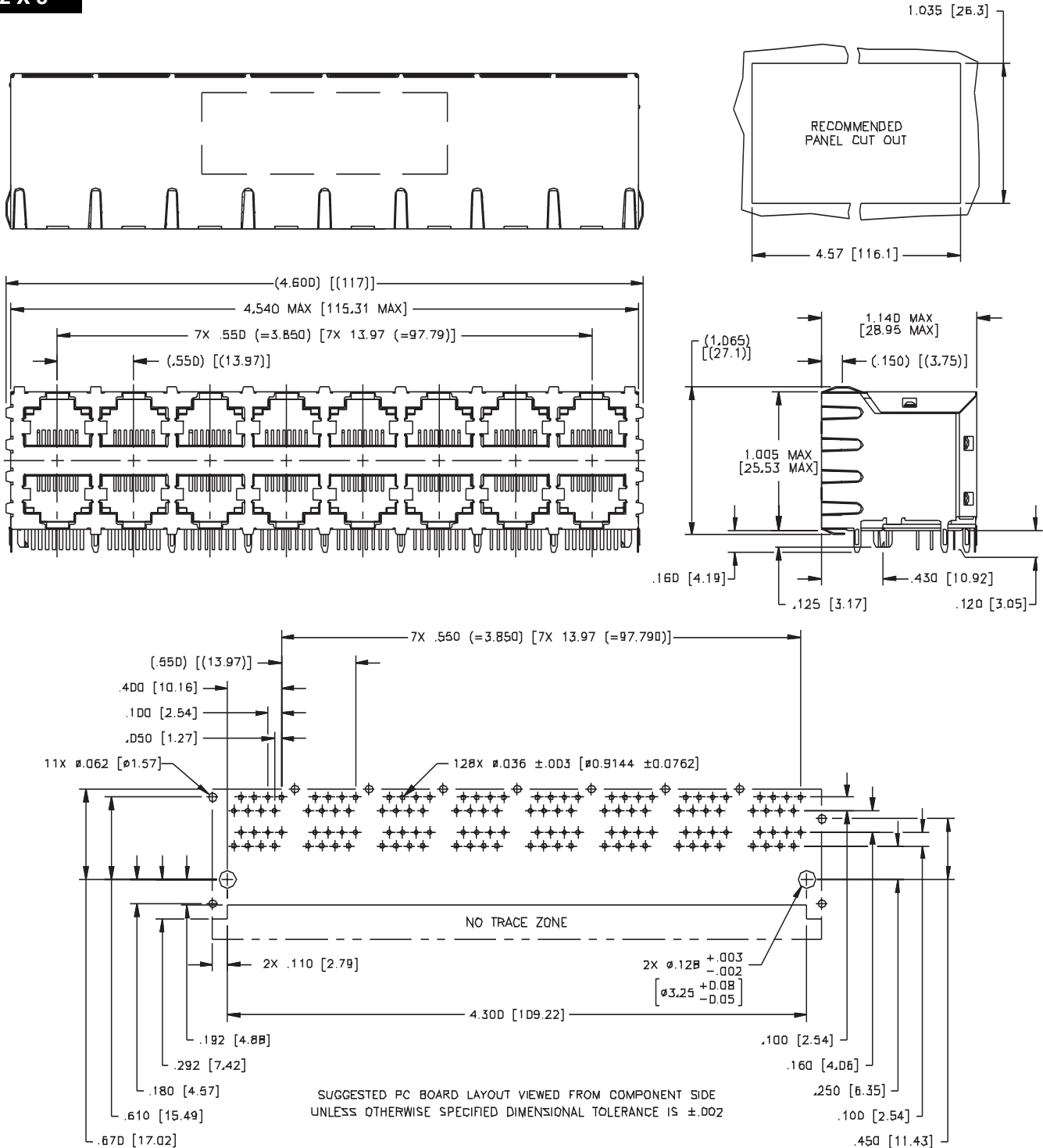
### PoE Enabled Connector Pin Out Assignment



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

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

2 X 8

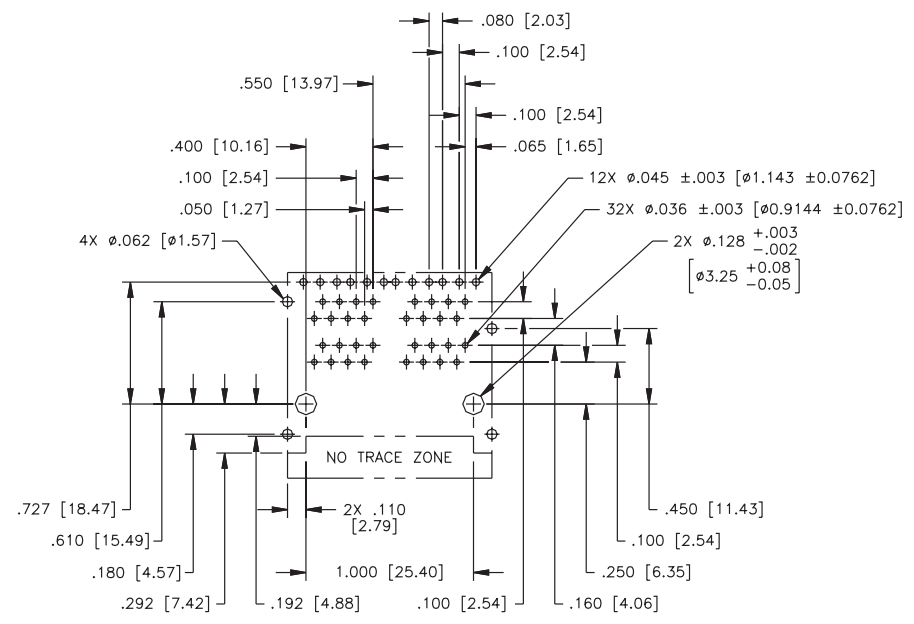
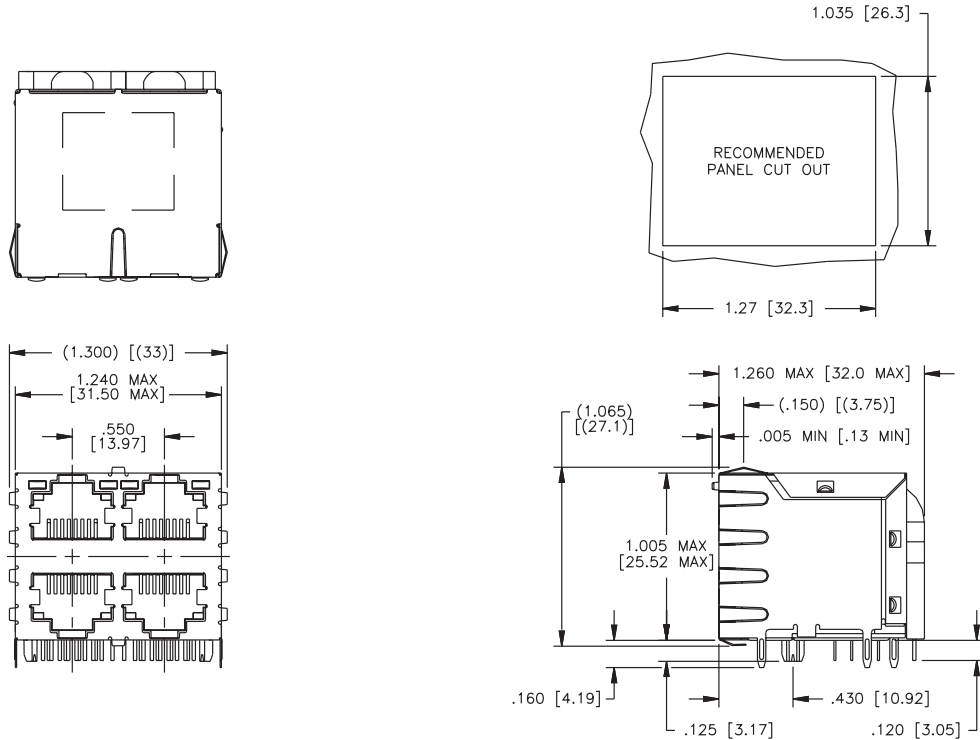


Dimensions:  $\frac{\text{Inches}}{\text{mm}}$

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 ±.002

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

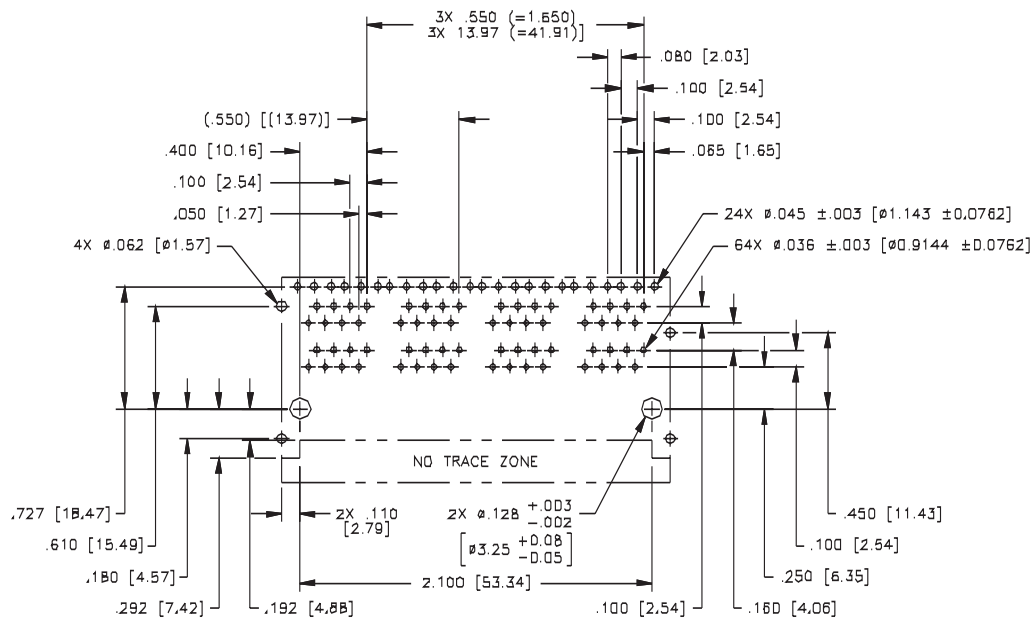
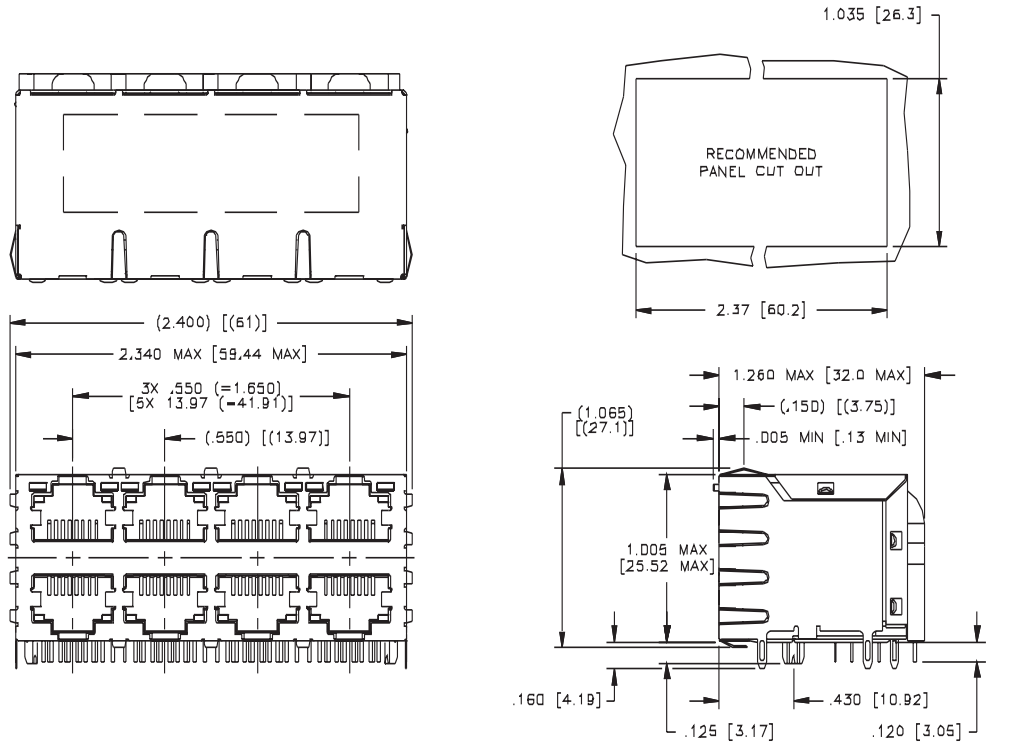
# PULSEJACK™

## 2XN RJ45 Connector



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

**2 X 4**

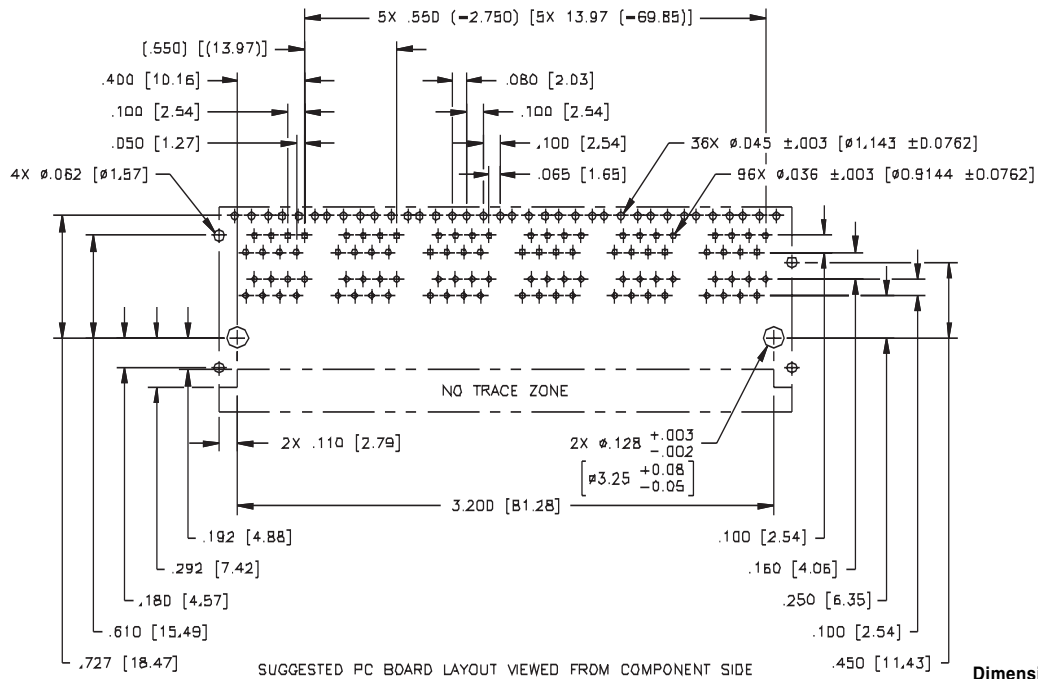
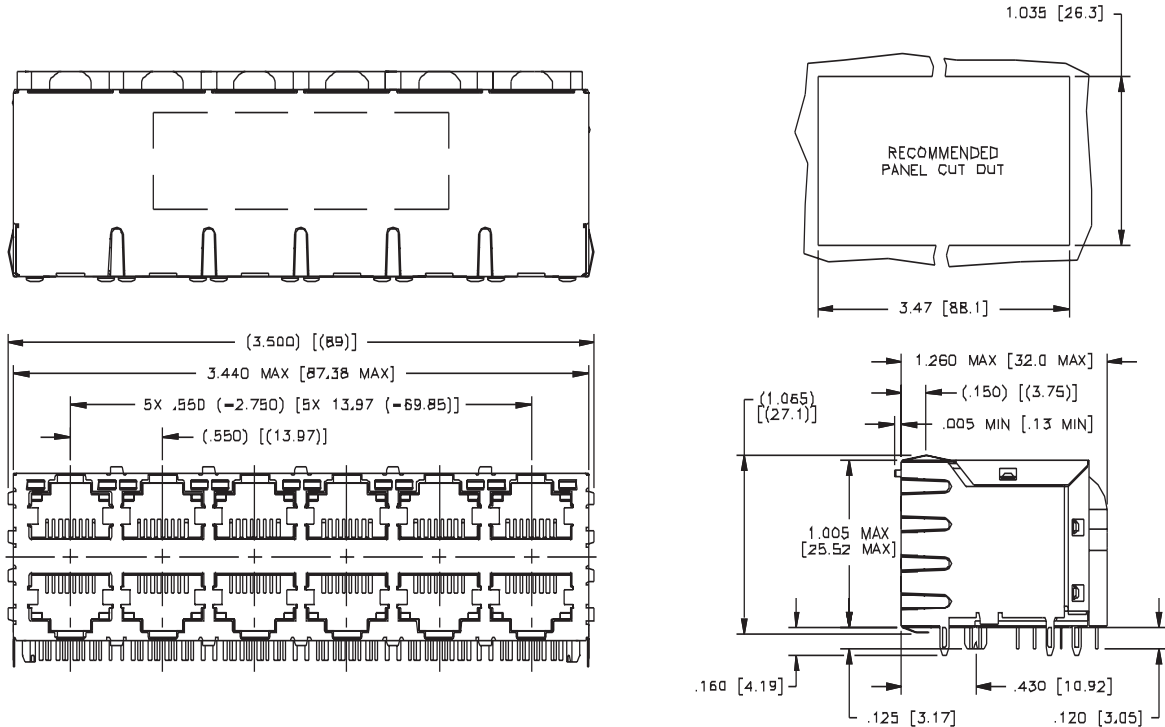


SUGGESTED PC BOARD LAYOUT VIEWED FROM COMPONENT SIDE  
UNLESS OTHERWISE SPECIFIED DIMENSIONAL TOLERANCE IS  $\pm .002$

**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

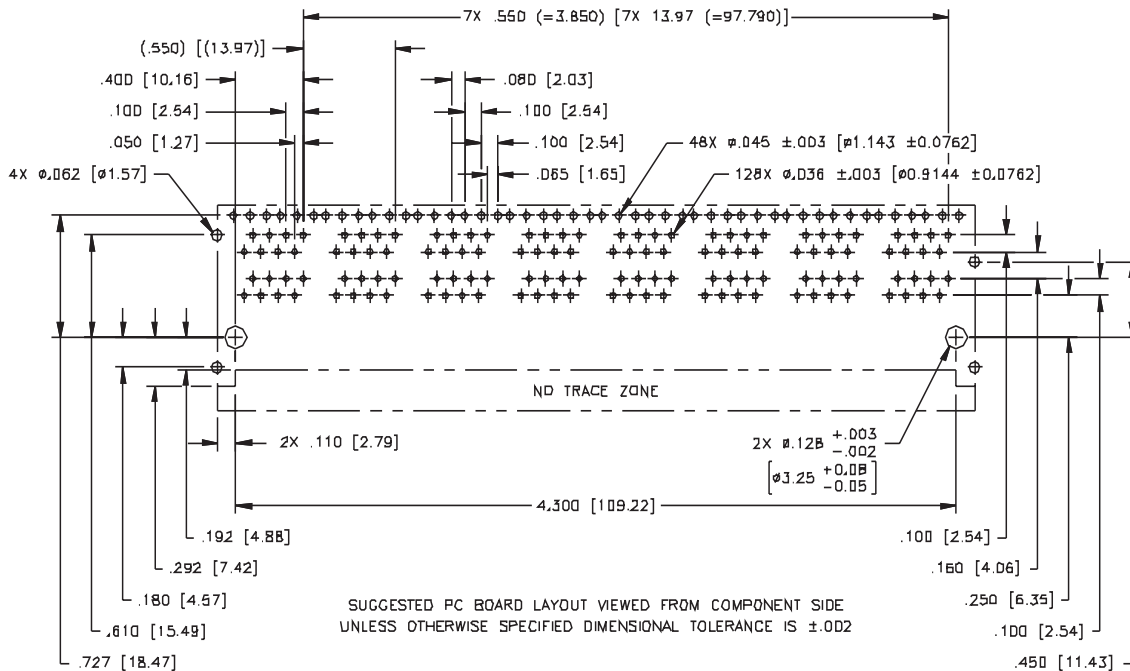
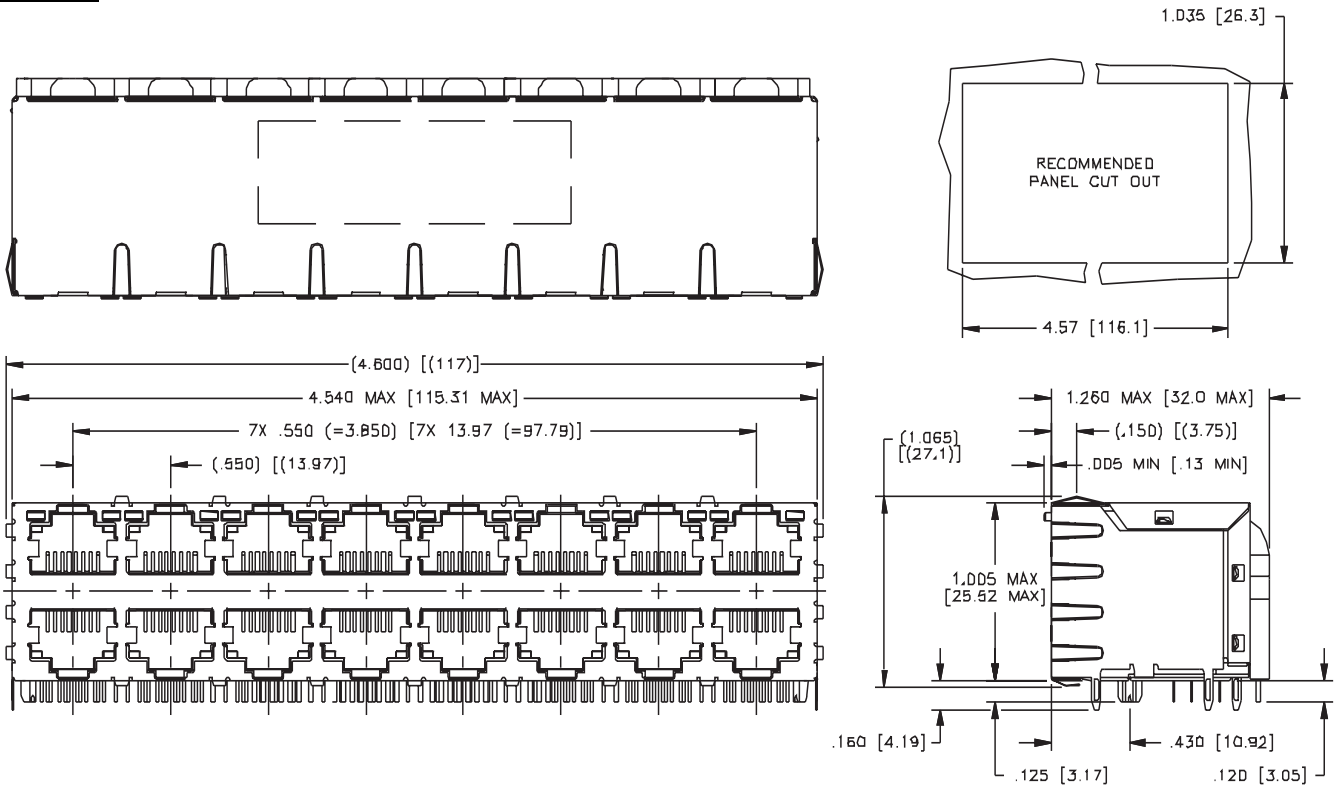


SUGGESTED PC BOARD LAYOUT VIEWED FROM COMPONENT SIDE  
UNLESS OTHERWISE SPECIFIED DIMENSIONAL TOLERANCE IS ±.002

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

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

2 X 8



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

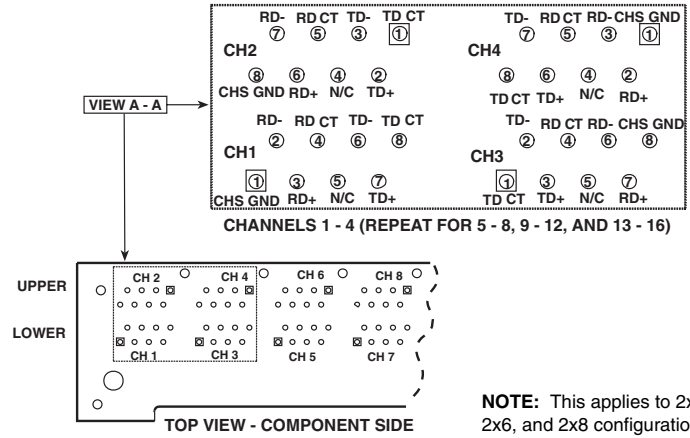
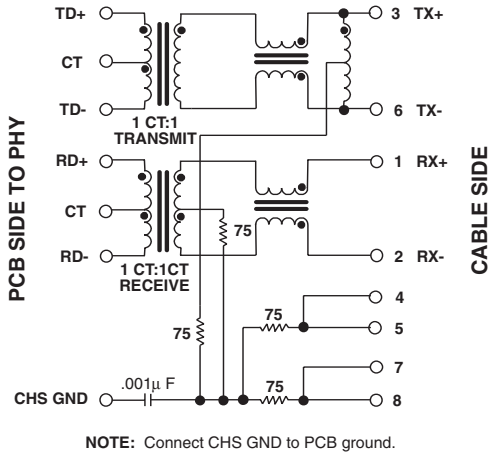
Dimensions: Inches  
mm

Unless otherwise specified, all tolerances are ± .010  
0,25

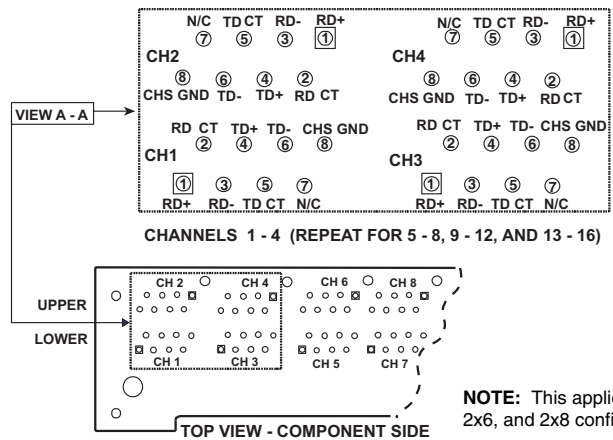
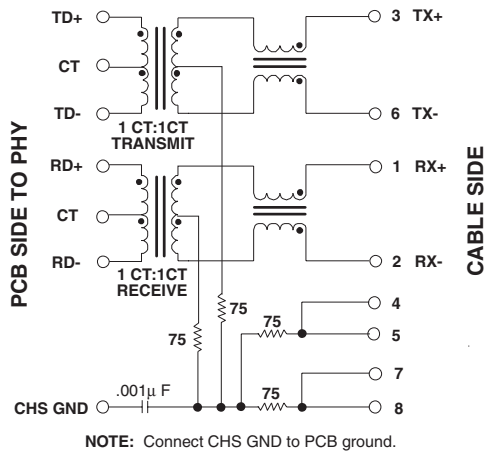


### J2 Series (No LEDs) Schematics (not PoE Enabled)

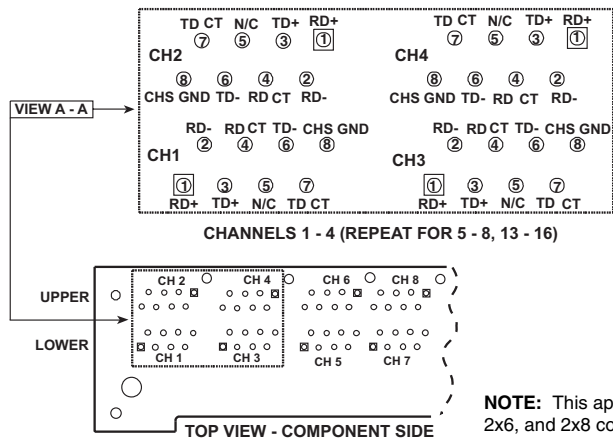
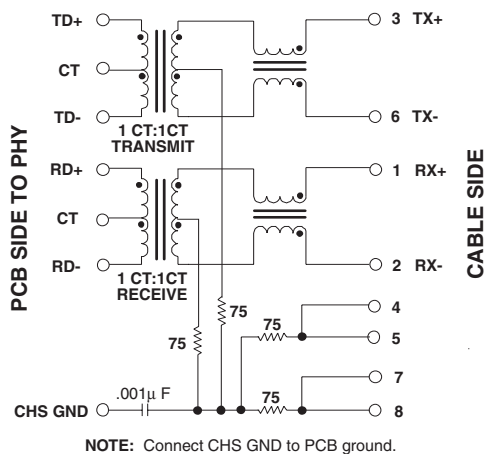
#### J2039



#### J2042



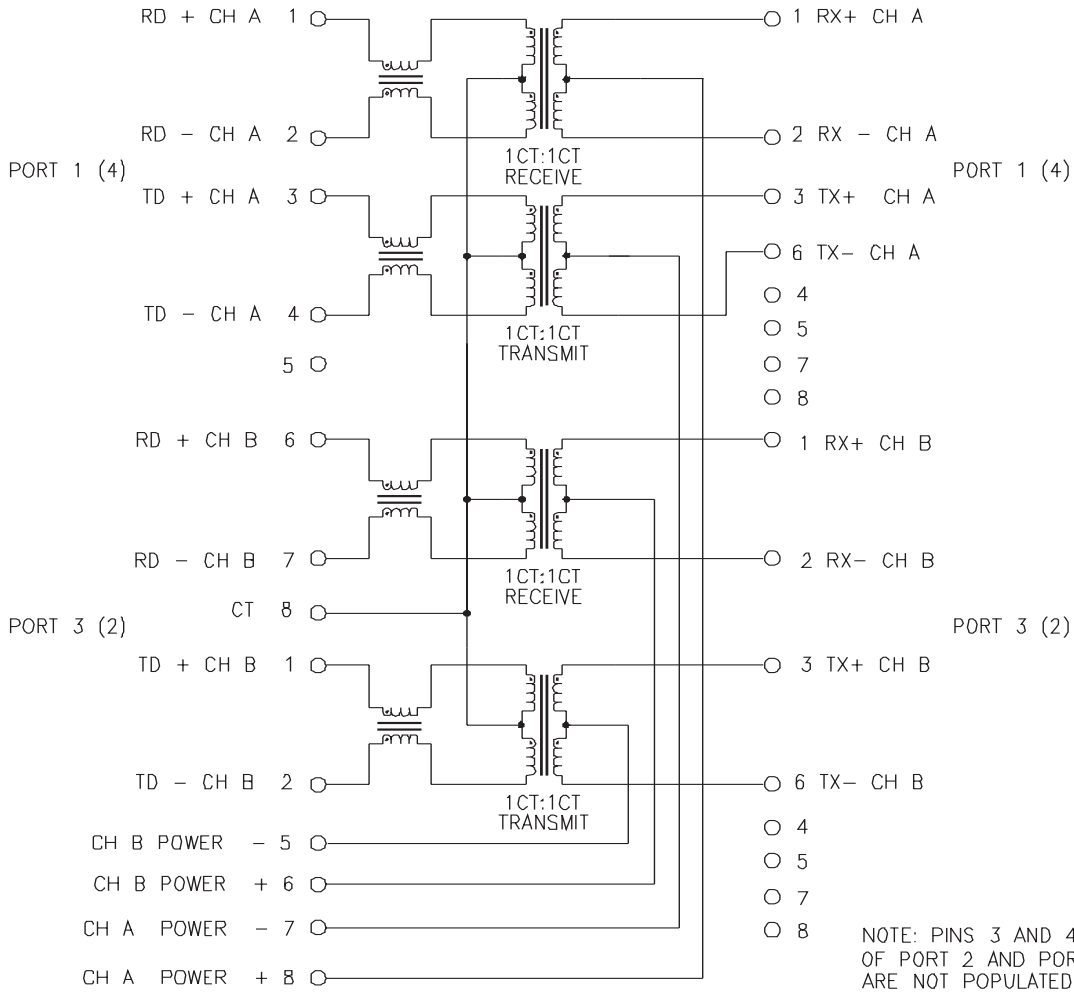
#### J2045



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

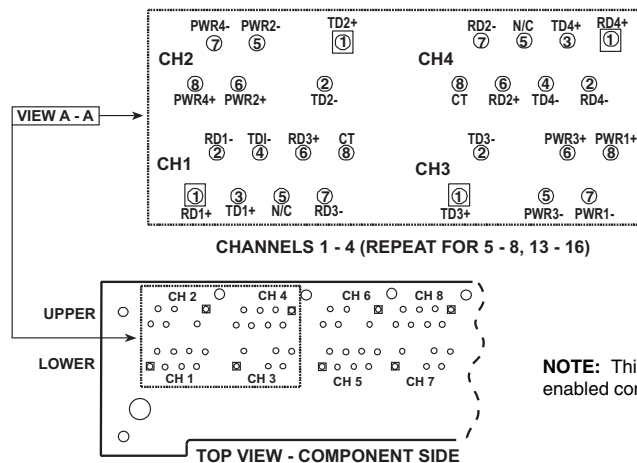
J20-0017/19

PCB SIDE



CABLE SIDE

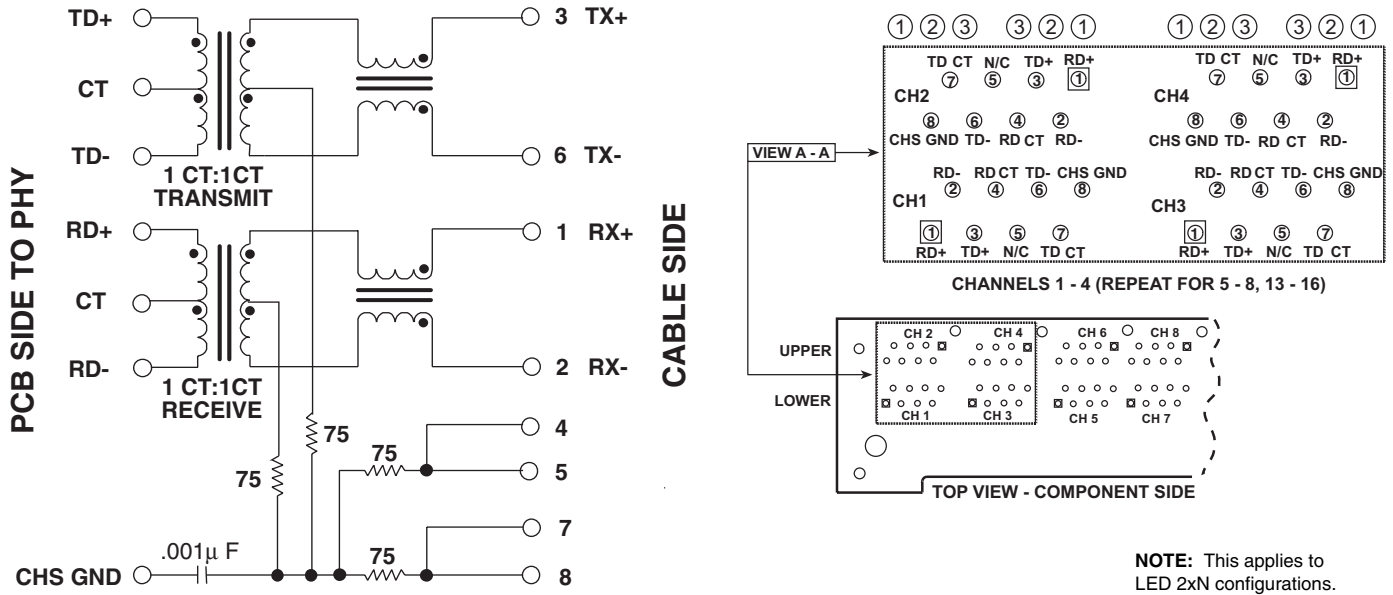
NOTE: PINS 3 AND 4 OF PORT 2 AND PORT 3 ARE NOT POPULATED.



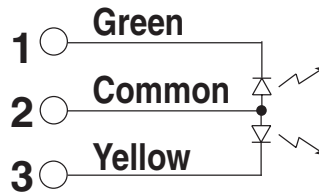
NOTE: This applies to 2xN PoE enabled configurations.

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

#### J20-0013/14/15/16



#### 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

#### For More Information :

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