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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 μ 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 ¹ Number	No. of Ports	Turns ² Ratios		LEDs ³ L/R	PoE ⁴ Enabled	Insertion Loss (dB TYP)		Return Loss (dB TYP) 100 Ω \pm 15 Ω			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	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 ⁵	8	1CT:1CT	1CT:1CT	None	Yes	-1	-20	-16	-12	-12	-40	-35	-30	-30	-20
J20-0019 ⁵	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.

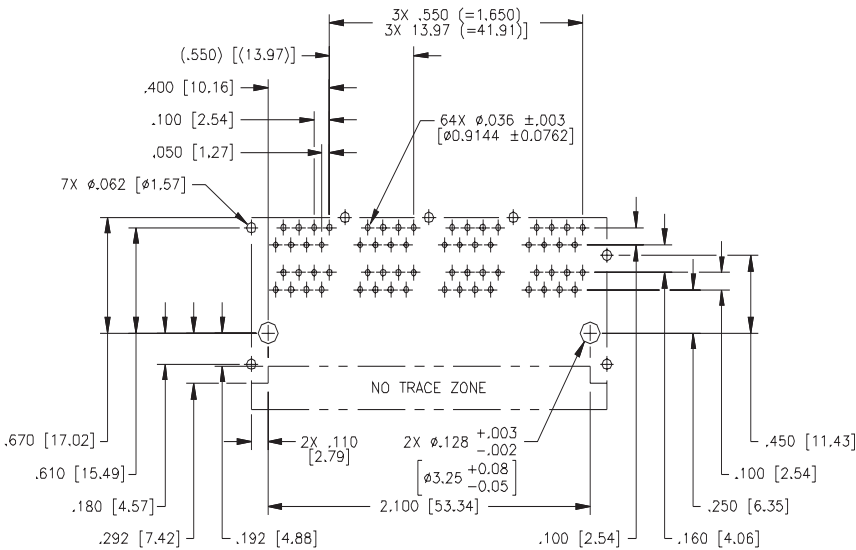
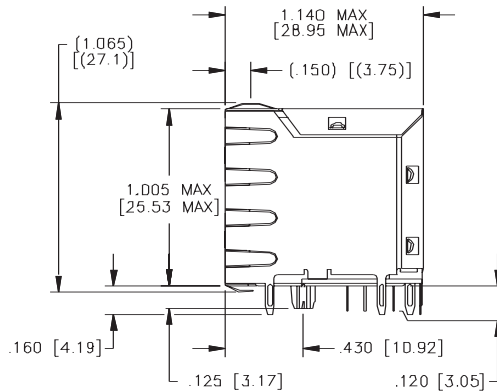
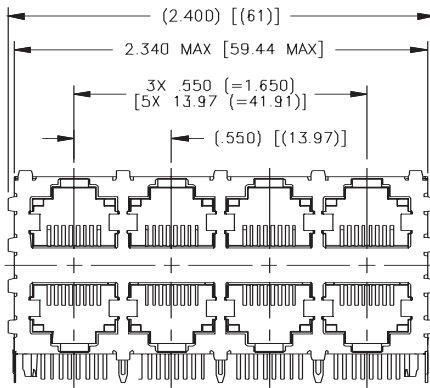
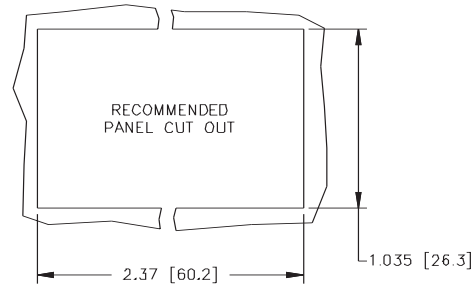
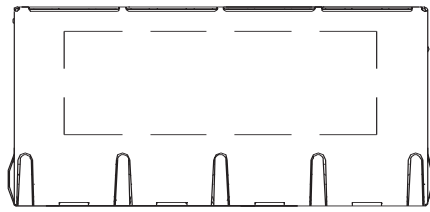
RJ45 Material Specification

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 μ inches	120 μ inches Sn90/Pb10 over 50 μ 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.

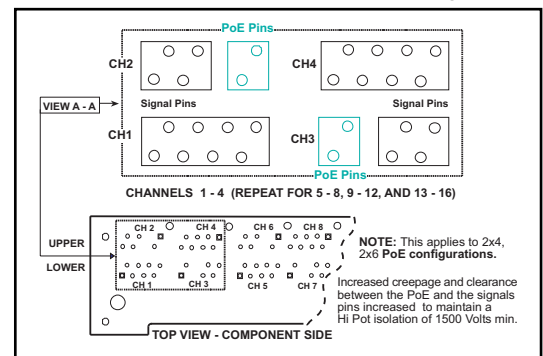
J2 Series (No LEDs) Mechanicals (available PoE Enabled)

2 X 4



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

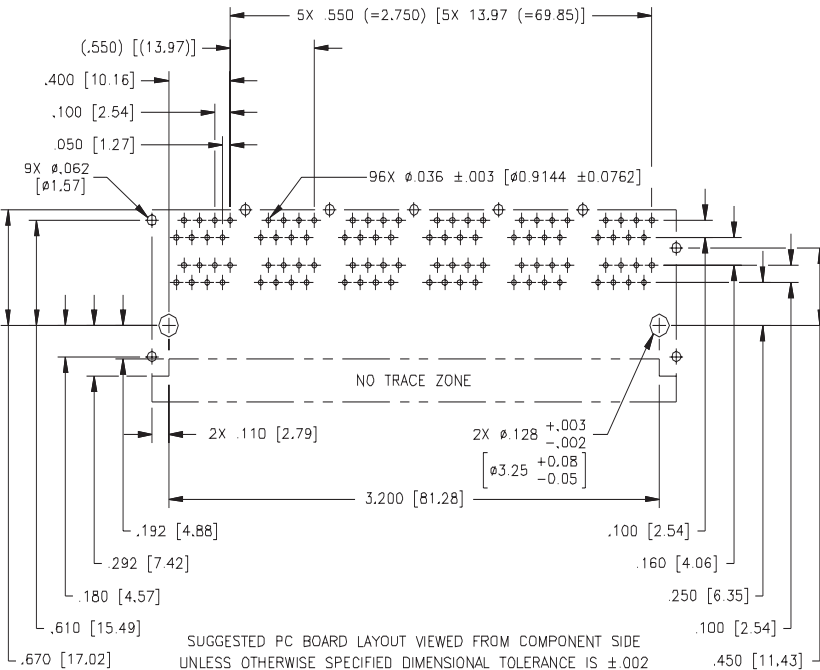
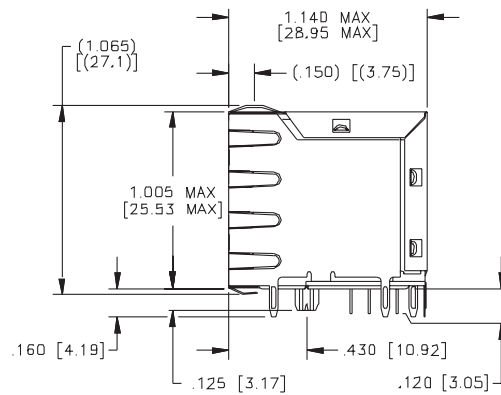
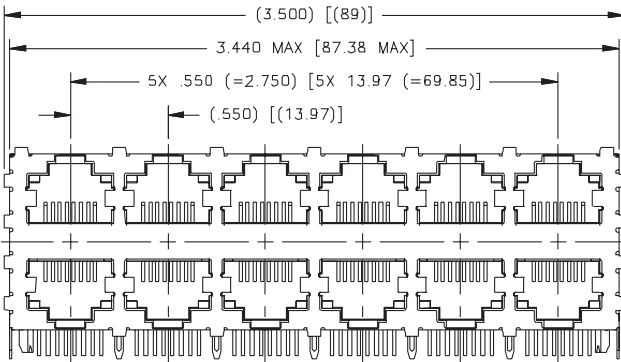
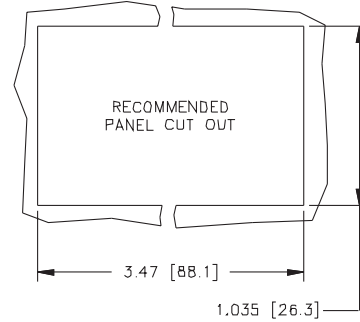
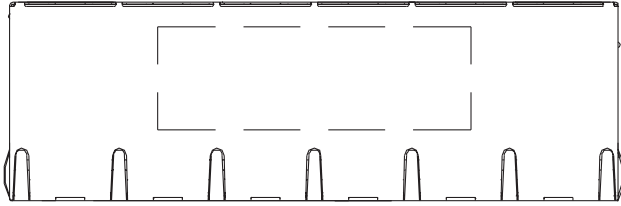
PoE Enabled Connector Pin Out Assignment



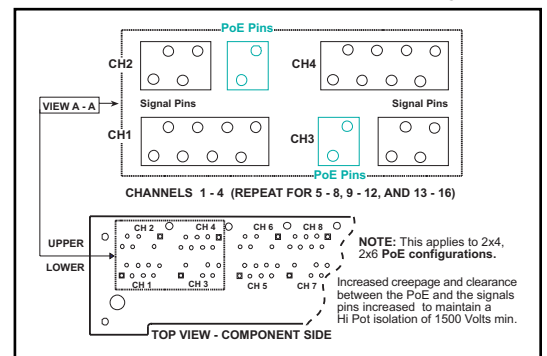
Dimensions: $\frac{\text{Inches}}{\text{mm}}$
Unless otherwise specified,
all tolerances are $\pm \frac{.010}{.25}$

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

2 X 6



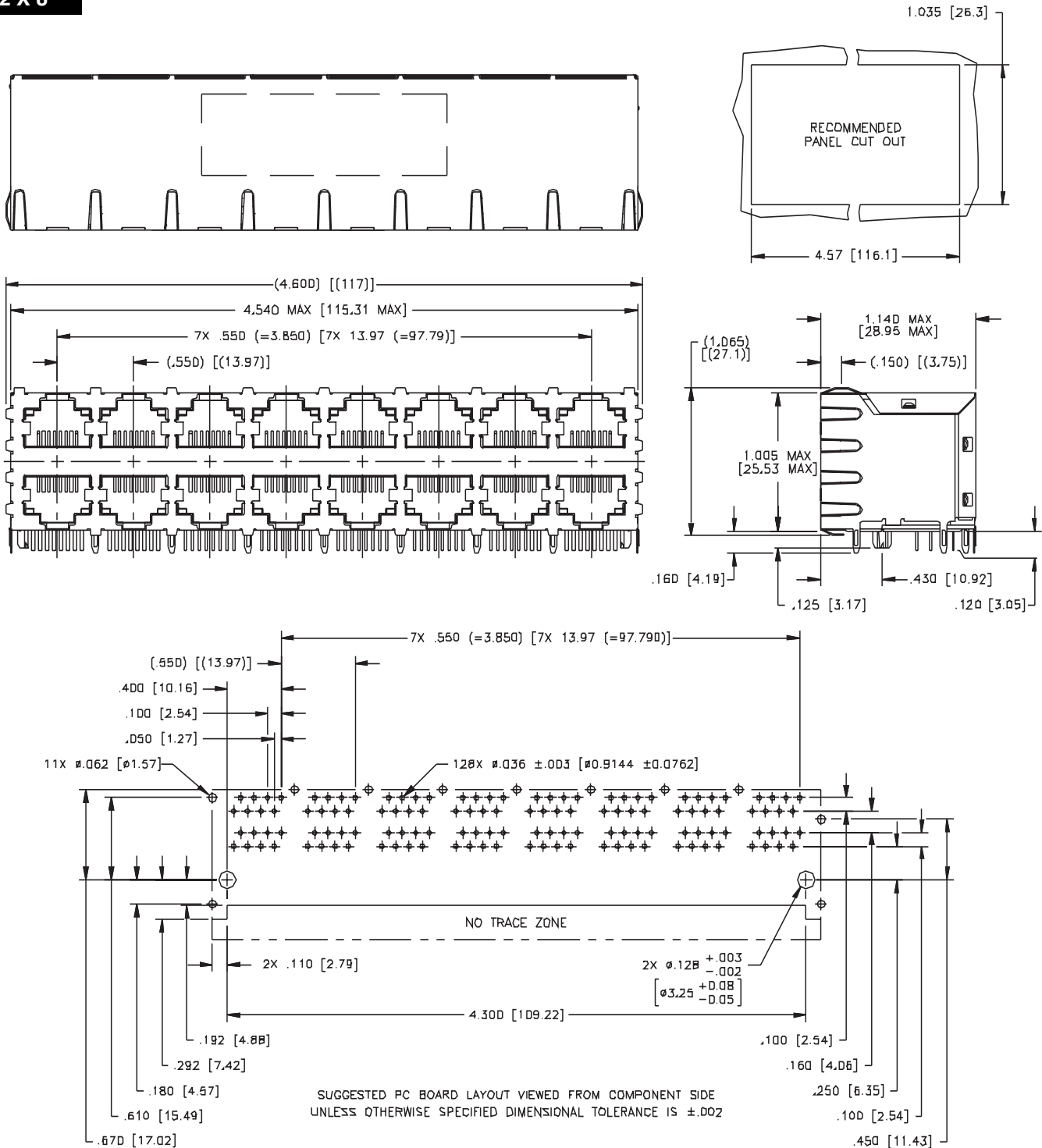
PoE Enabled Connector Pin Out Assignment



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

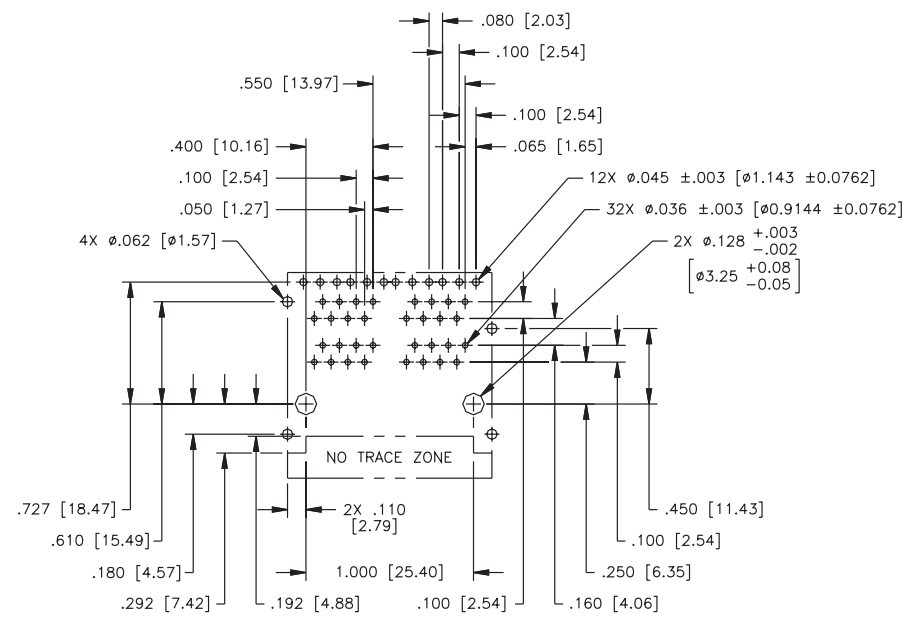
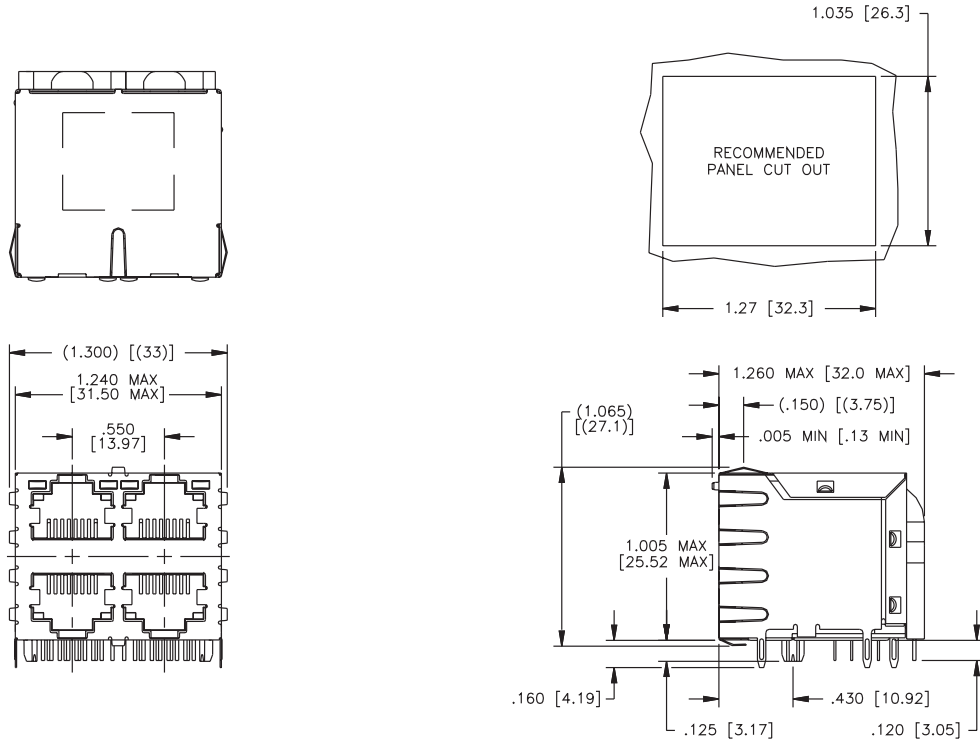


Dimensions: $\frac{\text{Inches}}{\text{mm}}$

Unless otherwise specified, all tolerances are $\pm \frac{.010}{0,25}$

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

2 X 2

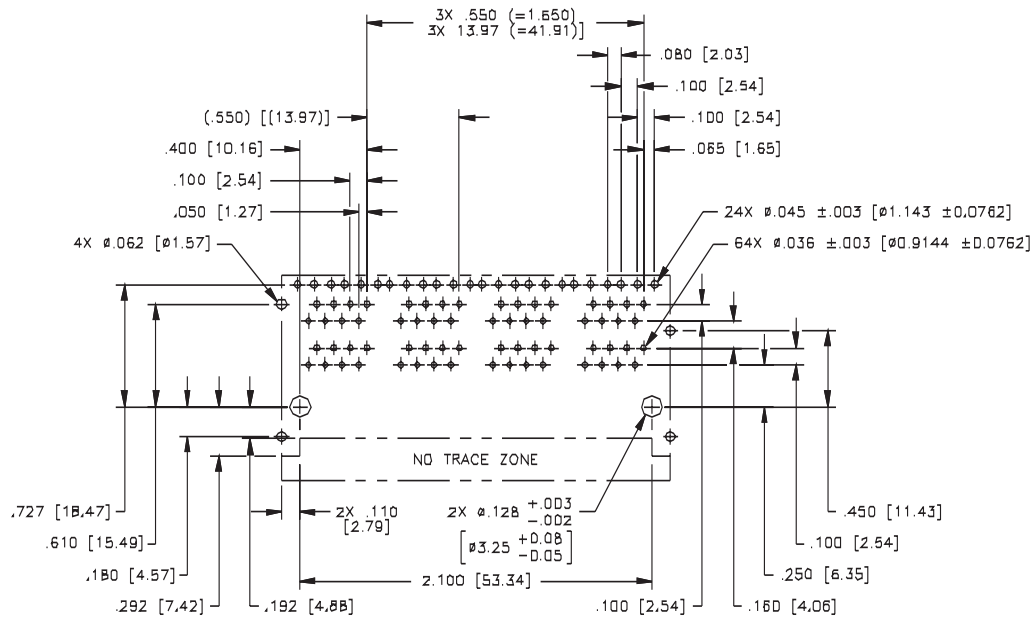
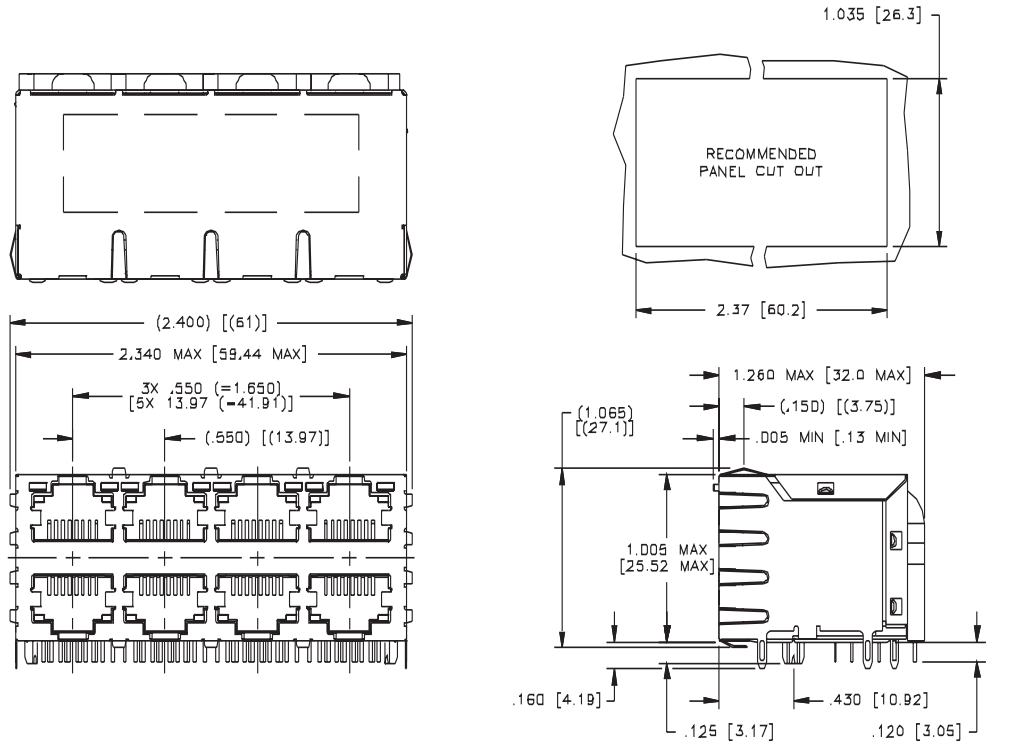


SUGGESTED PC BOARD LAYOUT VIEWED FROM COMPONENT SIDE
 UNLESS OTHERWISE SPECIFIED DIMENSIONAL TOLERANCE IS ±.002

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

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

2 X 4

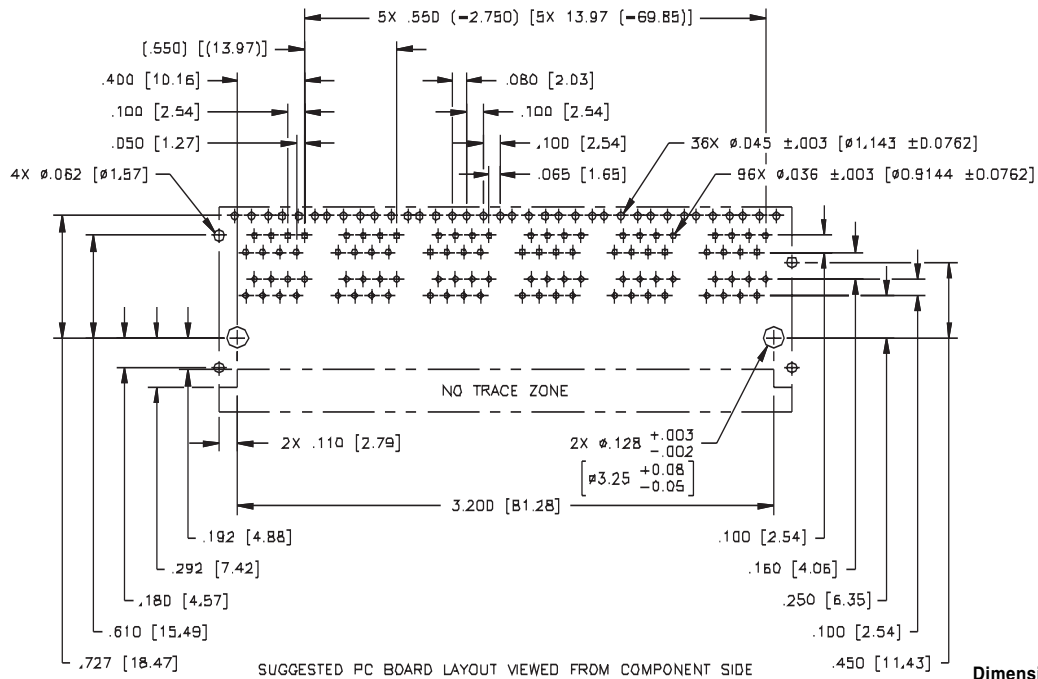
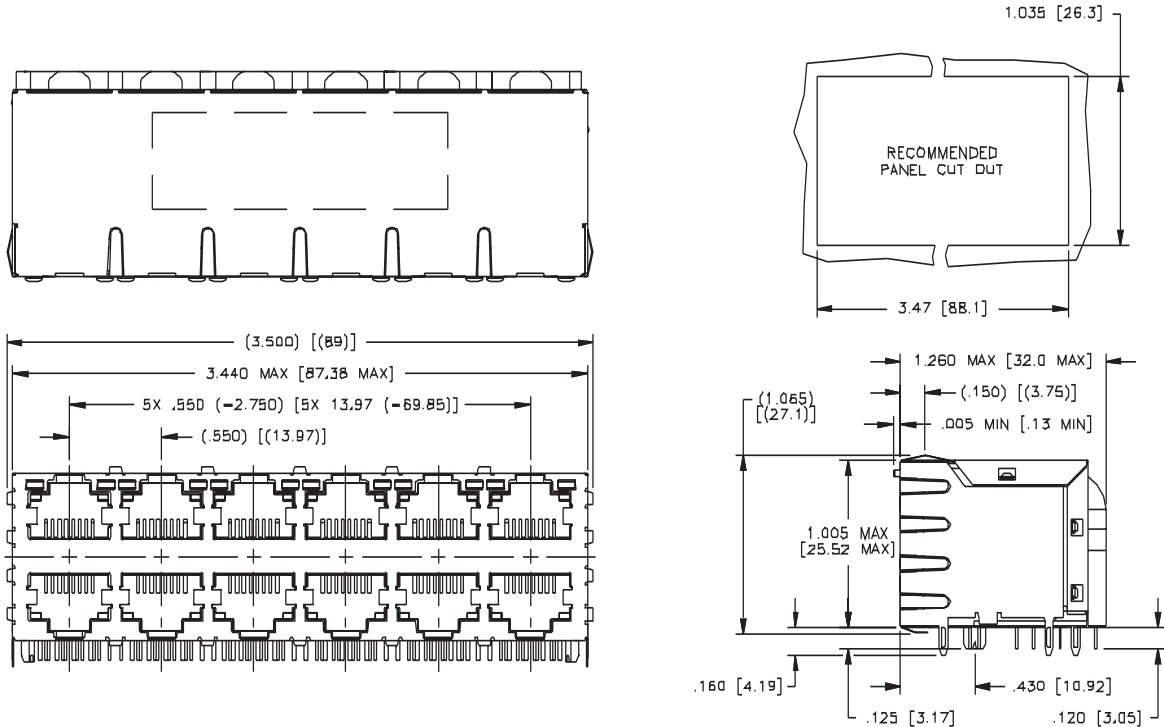


SUGGESTED PC BOARD LAYOUT VIEWED FROM COMPONENT SIDE
 UNLESS OTHERWISE SPECIFIED DIMENSIONAL TOLERANCE IS \pm .002

Dimensions: $\frac{\text{Inches}}{\text{mm}}$
 Unless otherwise specified,
 all tolerances are \pm $\frac{.010}{0.25}$

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

2 X 6

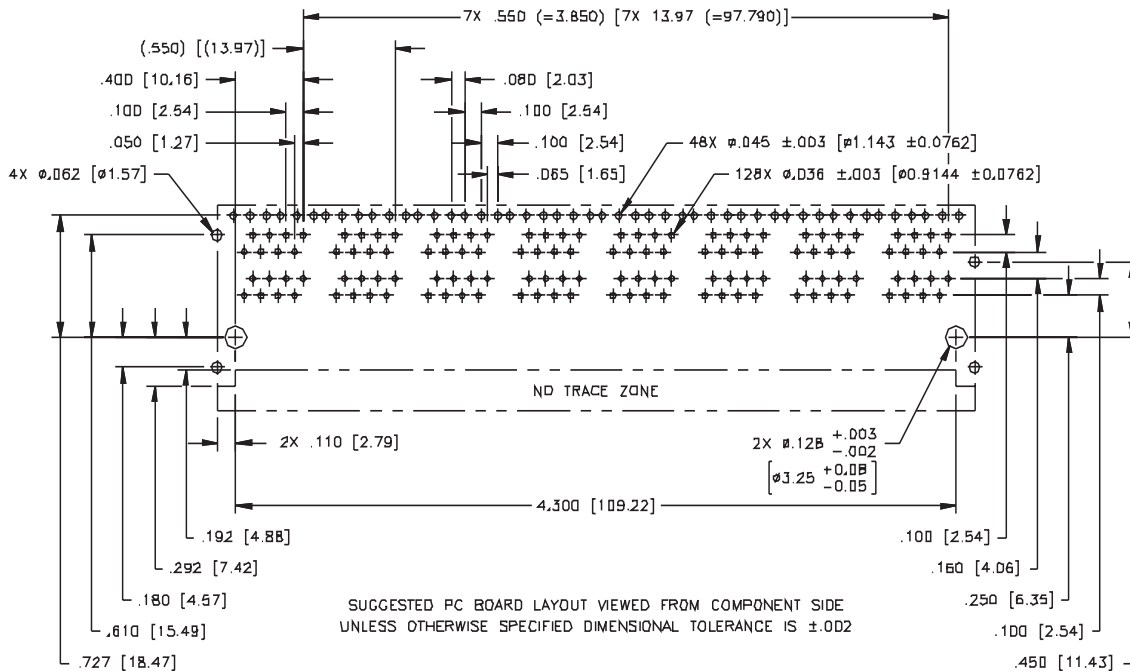
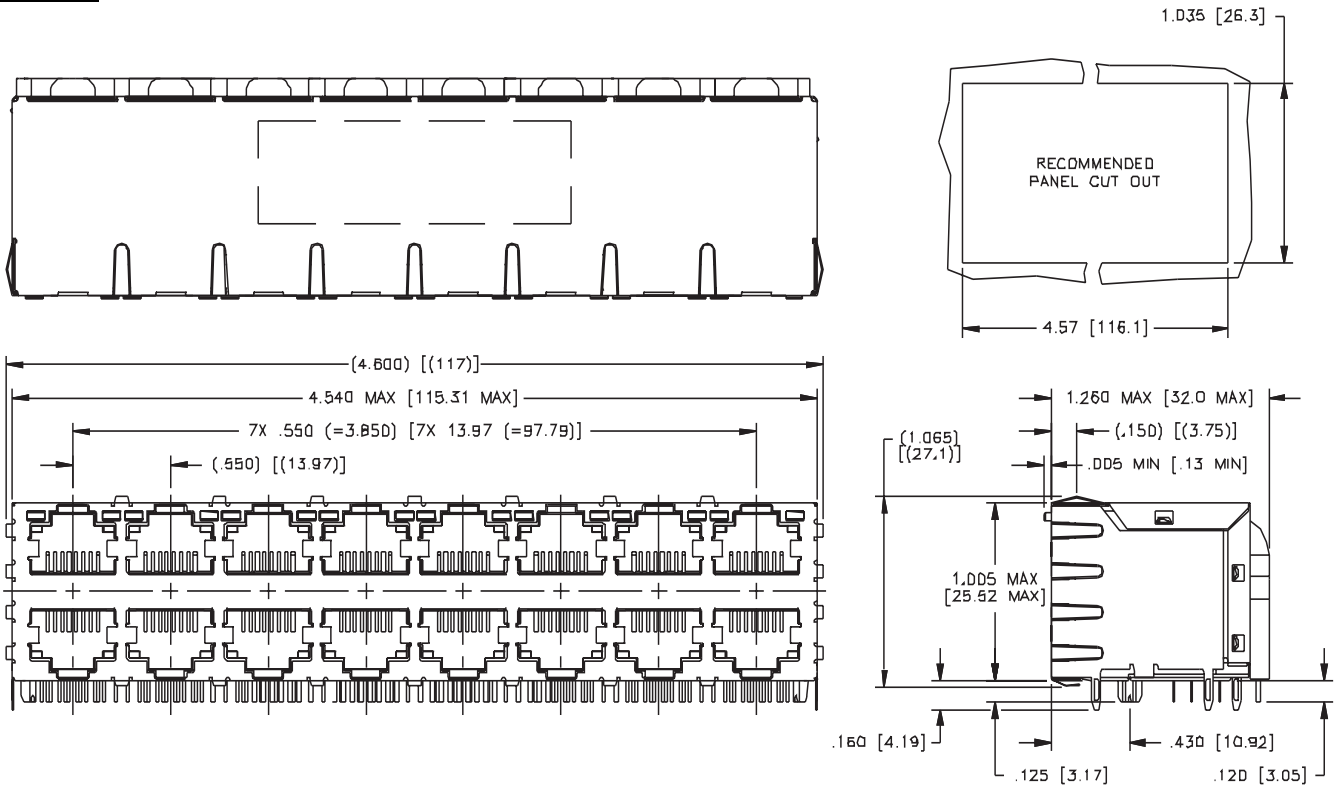


SUGGESTED PC BOARD LAYOUT VIEWED FROM COMPONENT SIDE
UNLESS OTHERWISE SPECIFIED DIMENSIONAL TOLERANCE IS ±.002

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

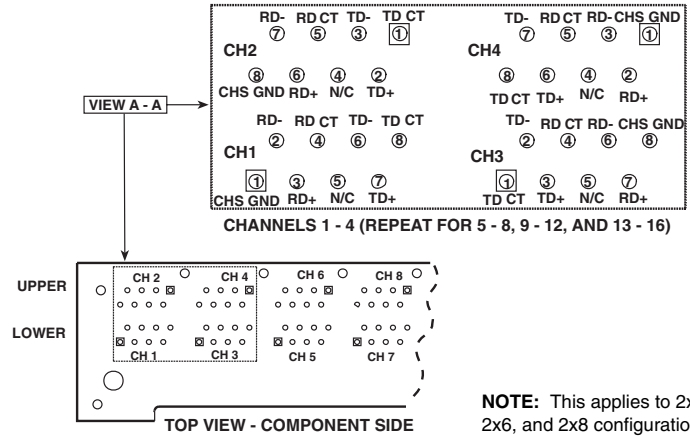
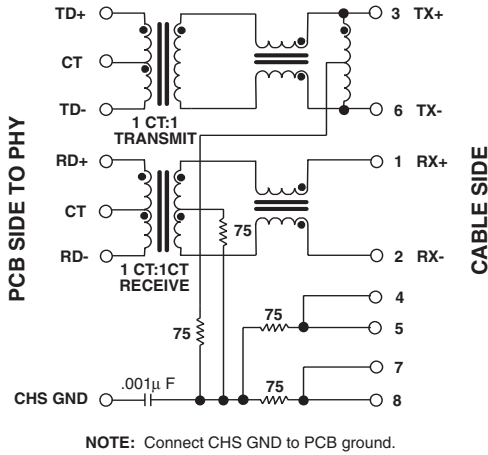


Dimensions: Inches
mm

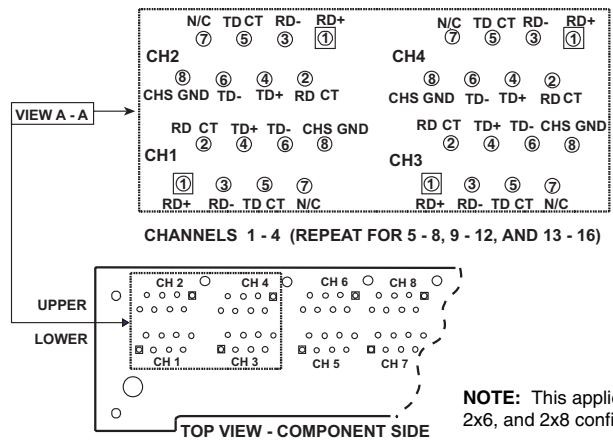
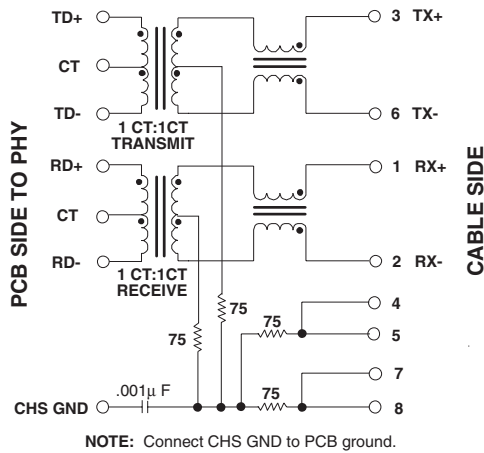
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J2 Series (No LEDs) Schematics (not PoE Enabled)

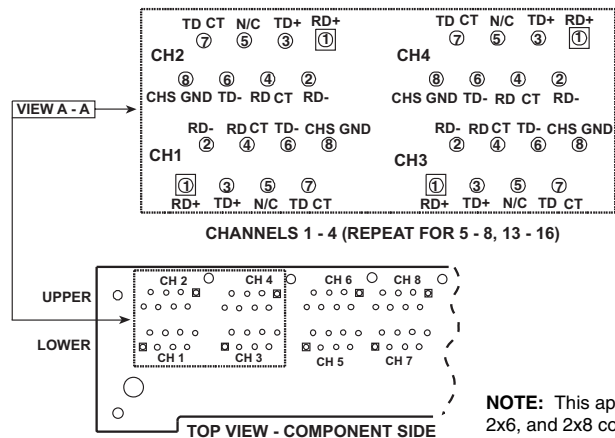
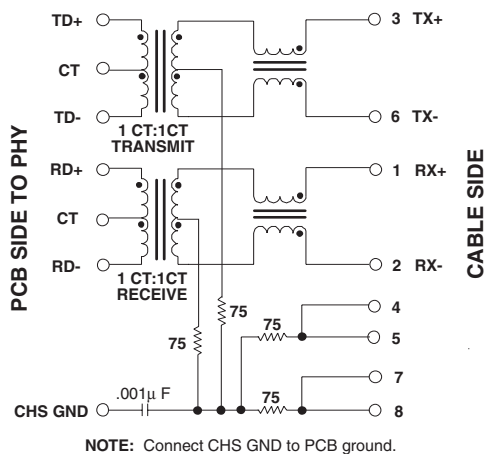
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J2042



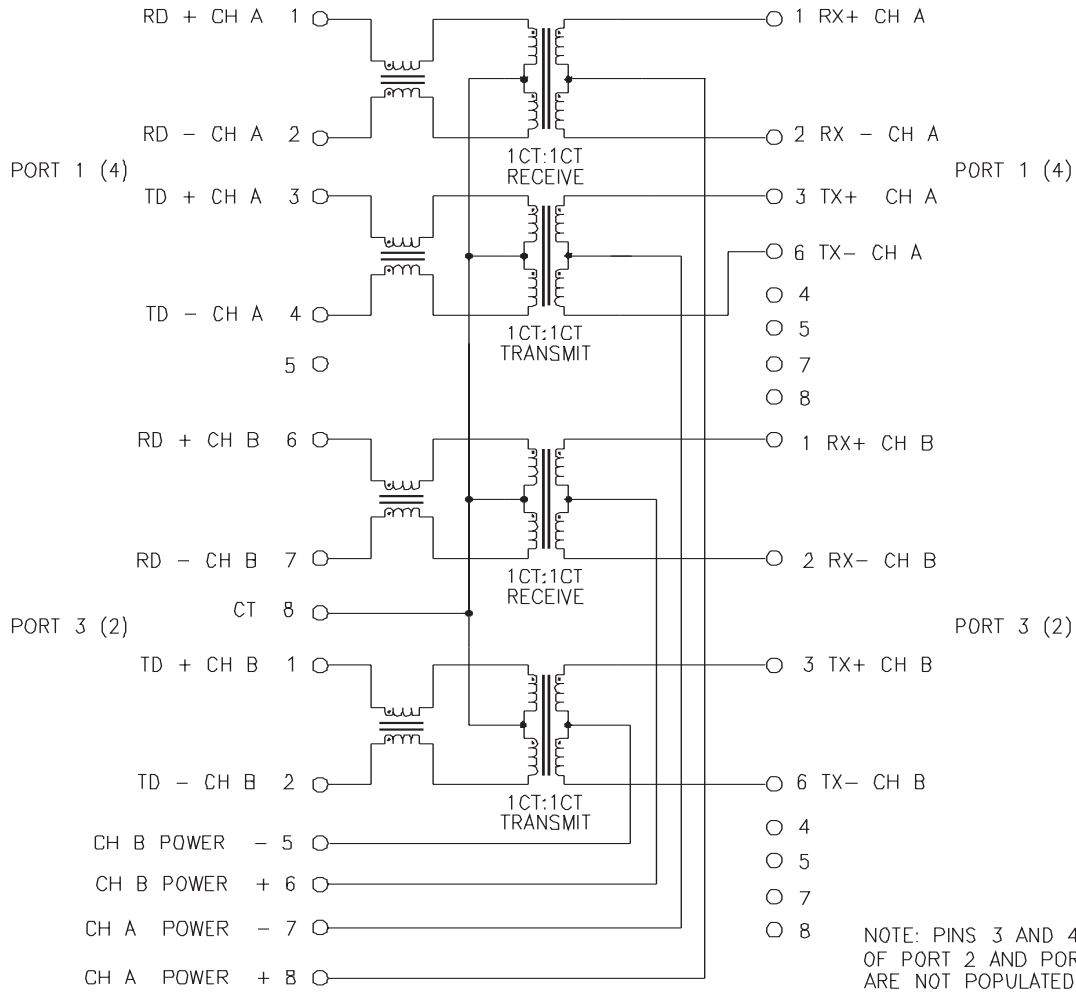
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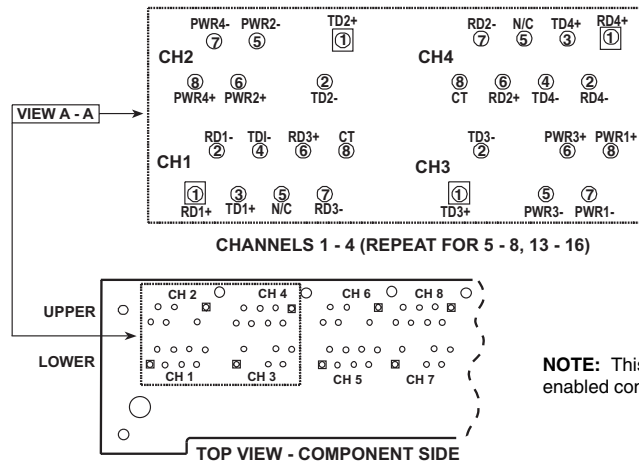
J2 Series (No LEDs/PoE Enabled) Schematics

J20-0017/19

PCB SIDE

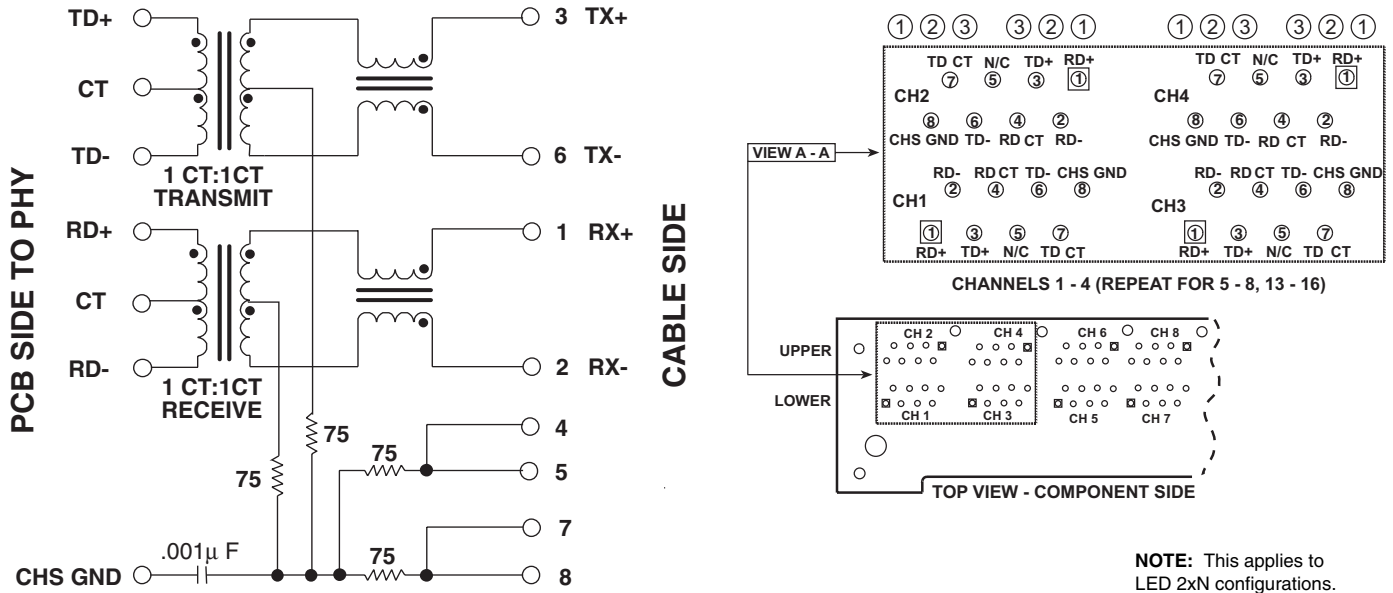


CABLE SIDE

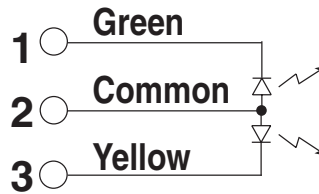


J2 Series (With LEDs) Schematics (not PoE Enabled)

J20-0013/14/15/16



LED Configuration



Standard LED Color	LED Wavelength ¹	Forward ² (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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