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# PULSEJACK™

## Surface Mount 1x1



### Description:

10/100Base-TX surface mount RJ45 single port (1x1) Tab-UP/DOWN with or without LEDs Integrated Magnetics Connector, designed to support applications such as: Set Top Box and Network Interface Cards (NIC).



### Features and Benefits:

- ⊕ RoHS peak reflow temperature rating 245°C
- ⊕ JOC SMT product, reduced size and low cost alternative to JV series

### Electrical Performance Summary:

- ⊕ Meets IEEE 802.3 specification
- ⊕ High performance for maximum EMI suppression
- ⊕ Minimum 1500Vrms isolation per IEEE 802.3 requirement

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

RoHS Compliant Part No.	Turns Ratios		Tab Option Up/Down	LEDs' L/R	BST Circuit	EMI Finger	Insertion Loss (db MAX)		Return Loss (dB MIN) 100Ω (±15Ω)				Crosstalk (db MIN)			Common Mode Rejection (dB MIN)		Hipot (Vrms MIN)
	TX	RX					1-65 MHz	1-10 MHz	30 MHz	60-80 MHz	1-10 MHz	30-60 MHz	60-100 MHz	1-50 MHz	50-130 MHz	@ 60 Hz 1 MIN		
JOC-0003NL	1CT:1	1CT:1	Down	No	No	No	-1.0	-18	-14	-10	-35	-35	-30	-20	-20	1500		
JOC-0004NL	1CT:1	1CT:1	Down	No	No	Yes	-1.0	-18	-14	-10	-35	-35	-30	-20	-20	1500		
JOC-0005NL	1CT:1	1CT:1	Down	No	Yes	No	-1.0	-18	-14	-10	-35	-35	-30	-20	-20	1500		
JOC-0006NL	1CT:1	1CT:1	Down	No	Yes	Yes	-1.0	-18	-14	-10	-35	-35	-30	-20	-20	1500		
JV006I21NL	1CT:1	1CT:1	Down	No	No	Yes	-1.0	-20	-16	-12	-40	-35	-30	-30	-20	1500		
JV011I21NL	1CT:1	1CT:1	Down	No	Yes	Yes	-1.0	-20	-16	-12	-40	-35	-30	-30	-20	1500		
JV026I21NL	1CTS:1	1CT:1	Down	No	Yes	Yes	-1.0	-20	-16	-12	-40	-35	-30	-30	-20	1500		
J3006G21DNL	1CT:1	1CT:1	Up	G/Y	No	Yes	-1.0	-20	-16	-12	-40	-35	-30	-30	-20	1500		
J3011G21DNL	1CT:1	1CT:1	Up	G/Y	Yes	Yes	-1.0	-20	-16	-12	-40	-35	-30	-30	-20	1500		
J3018G21KNL	1CTS:1.414	1CT:1	Up	G/G	Yes	Yes	-1.0	-20	-16	-11.5	-40	-35	-30	-30	-20	1500		
J3026G01DNL	1CTS:1	1CT:1	Up	G/Y	Yes	No	-1.0	-20	-16	-12	-40	-35	-30	-30	-20	1500		
J3026G21DNL	1CTS:1	1CT:1	Up	G/Y	Yes	Yes	-1.0	-20	-16	-12	-40	-35	-30	-30	-20	1500		
JX30-0005NL <sup>3</sup>	1CT:1	1CT:1	Up	G/Y	Yes	Yes	-1.0	-20	-16	-12	-40	-35	-30	-30	-20	1500		

#### NOTES:

1. LEDs Left/Right: **G** = green; **Y** = yellow.
2. Add suffix "T" for Tape & Reel option (e.g. JOC-0004T).
3. Extended Temperature: -40° to 85° C

### RJ45 Durability Testing Rating

Part Number	Mating Force (MAX)	Unmating Force (MAX)	Durability	Plug to Jack Retention (MIN)
JOC/JV/J3 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		MSL <sup>2</sup> Rating
	Material	Finish	Material	Plating Area <sup>3</sup>	Solder Area <sup>5</sup>	Material	Specification	
JOC/JV/J3 Series	Brass	20-40μ inches thick nickel over Brass	Phosphor Bronze	(X)μ inches gold over 30-80μ inches nickel	Tin matte finish	High Temp. Thermoplastic	UL 94 V-0	1 <sup>4</sup>

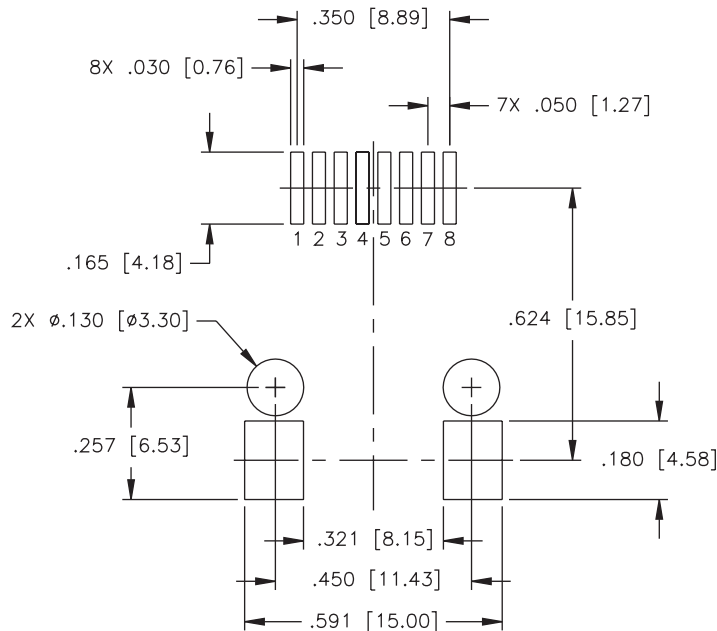
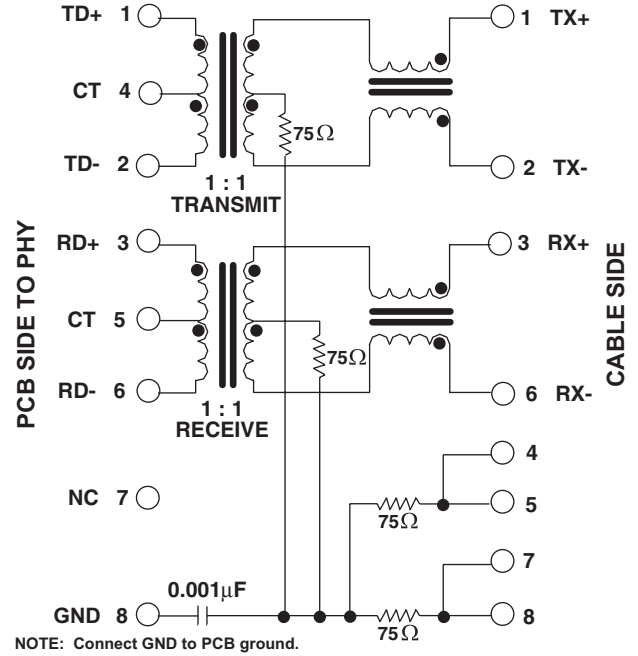
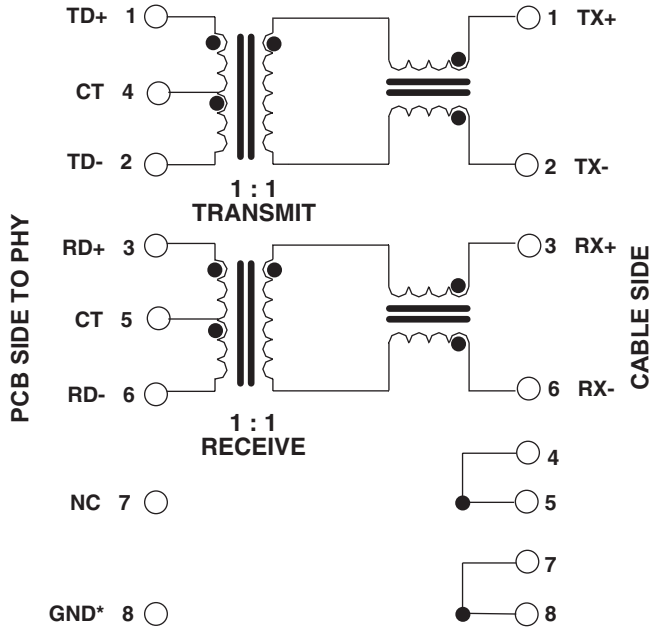
- Notes: 1. Connector dimensions comply with FCC part 68 dimension requirements. 2. MSL=Moisture Sensitivity Level rating: 1-5 (highest rating = 1, lowest rating = 5). 3. (X)=30μ inches gold for JV and J30 platforms and 15μ inches gold for JOC platform. 4. The MSL rating for JOC-000X is Level 4. All other connectors are Level 1. 5. NL parts are tin matte finish over nickel.

USA 858 674 8100 • Germany 49 7032 7806 0 • Singapore 65 6287 8998 • Shanghai 86 21 62787060 • China 86 755 33966678 • Taiwan 886 3 4643715

## J0C Platform Schematics

J0C-0003NL/04NL

J0C-0005NL/06NL

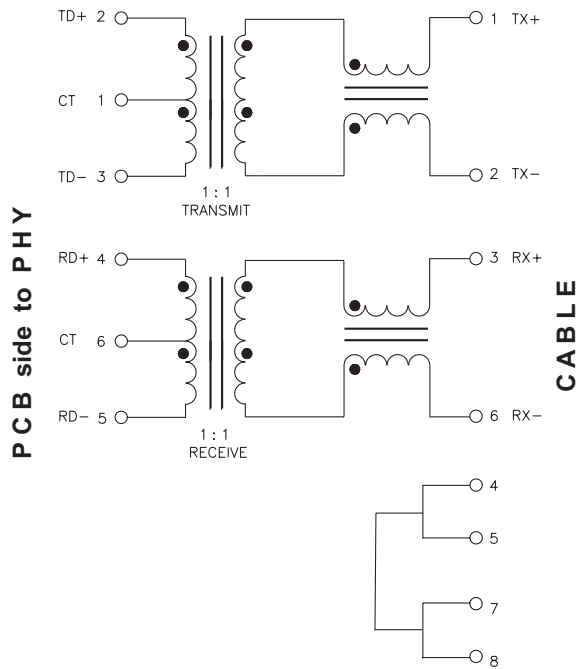


SUGGESTED FOOTPRINT (COMPONENT SIDE SHOWN)  
 DIMENSIONAL TOLERANCE: (UNLESS OTHERWISE SPECIFIED)  
 .XXX ±.003 [X.XX ±0.08]

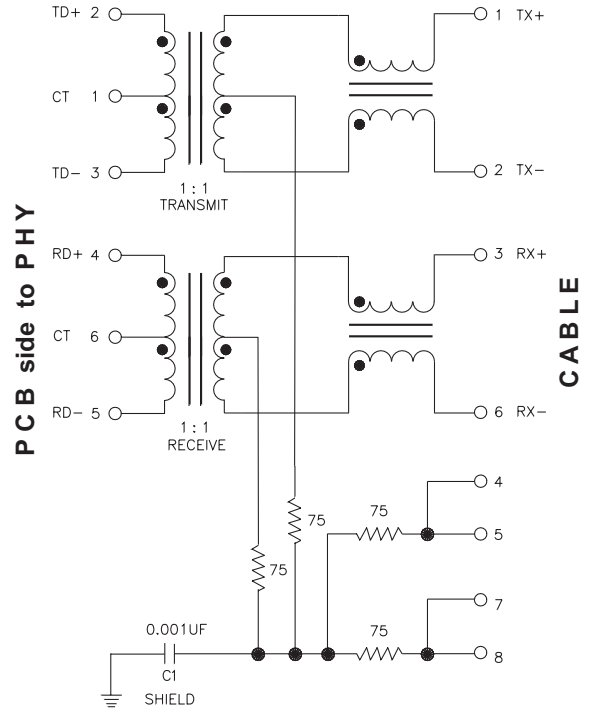


## JV Platform Schematics

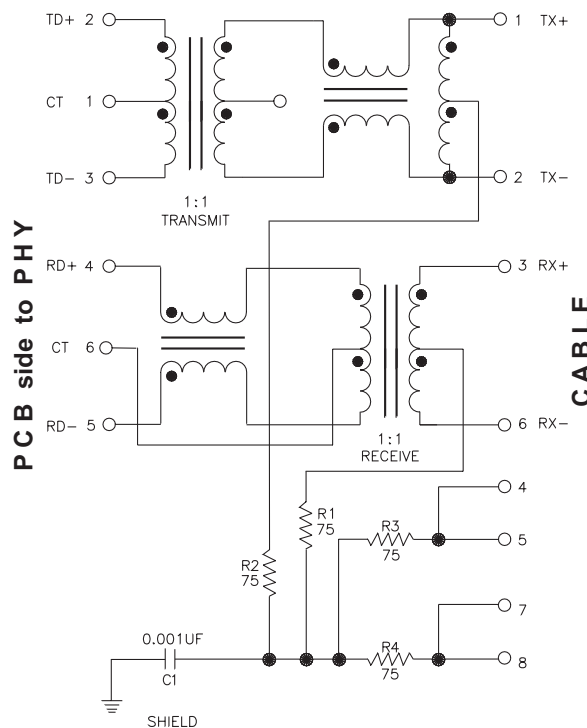
**JV006**



**JV011**

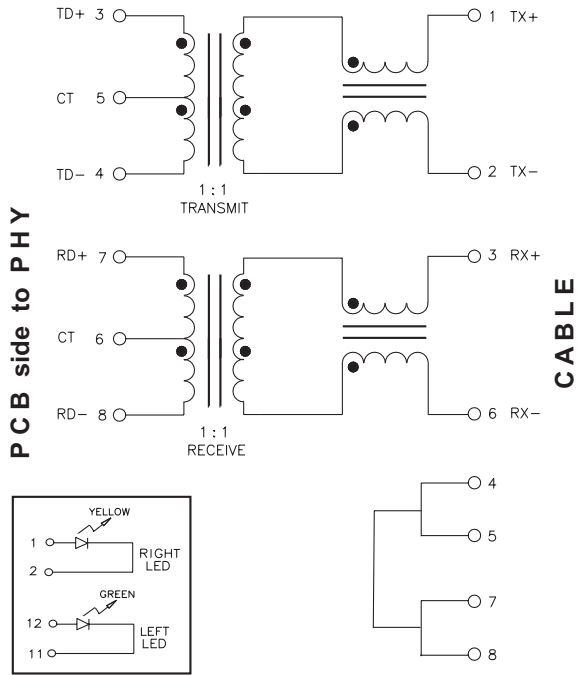


**JV026**

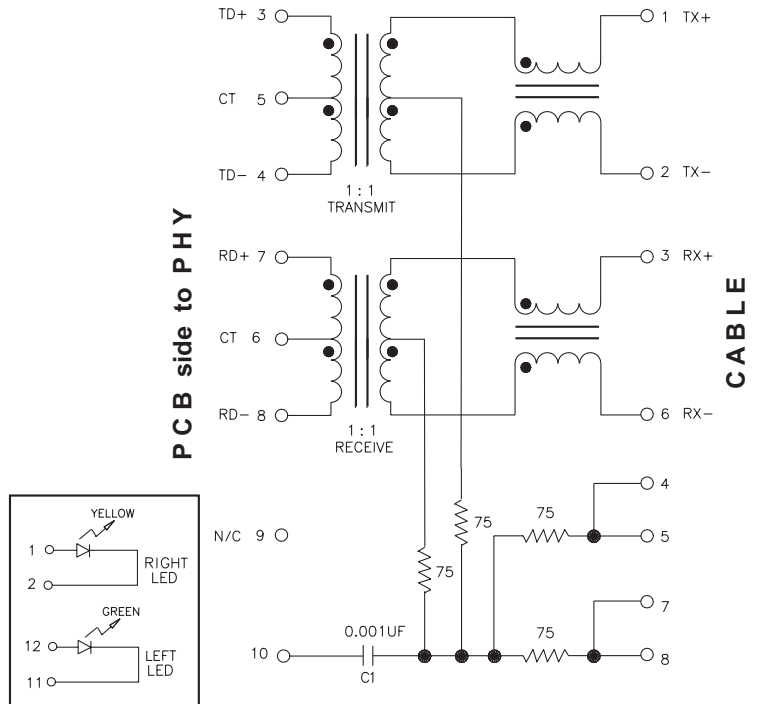


### J3 Platform Schematics

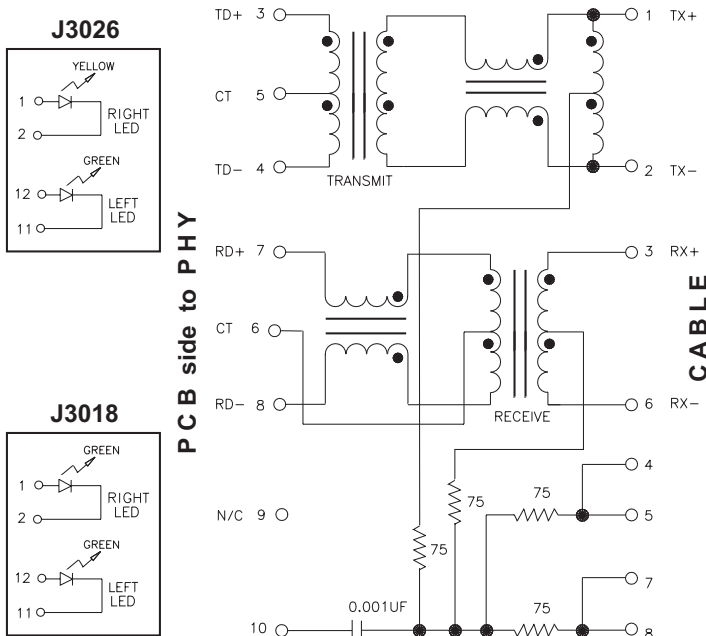
**J3006**



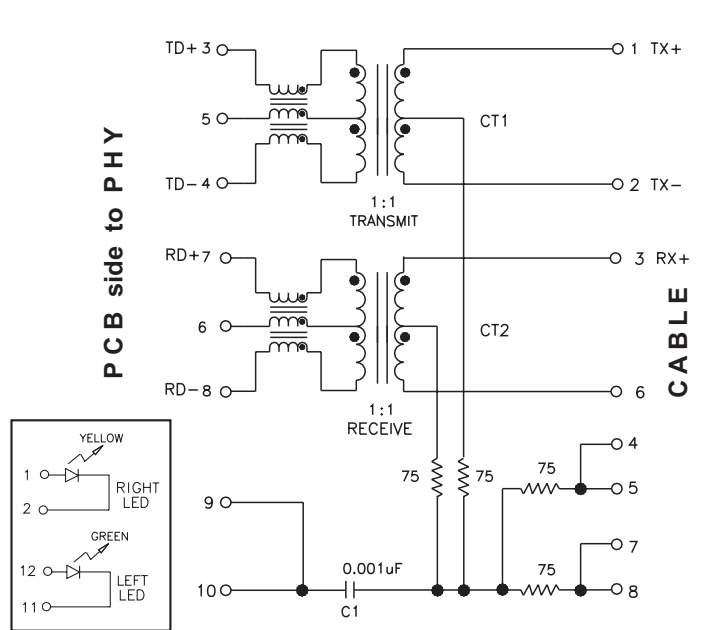
**J3011**



**J3018/J3026**



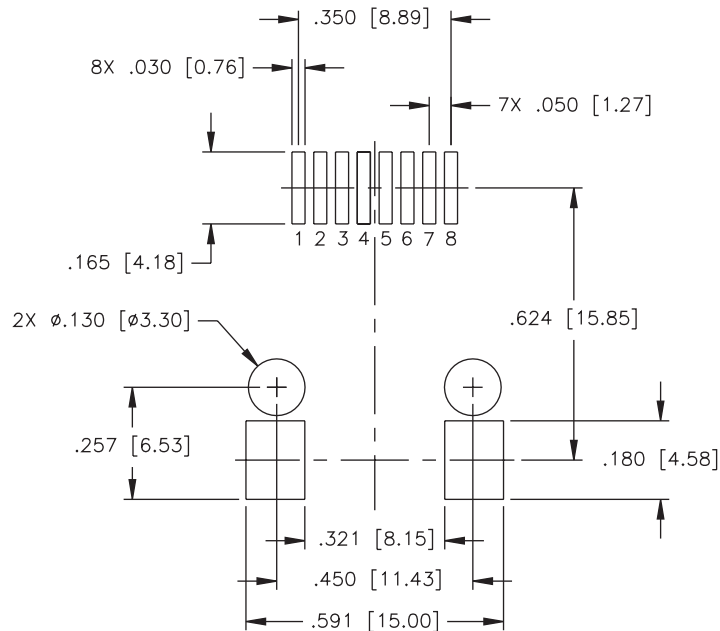
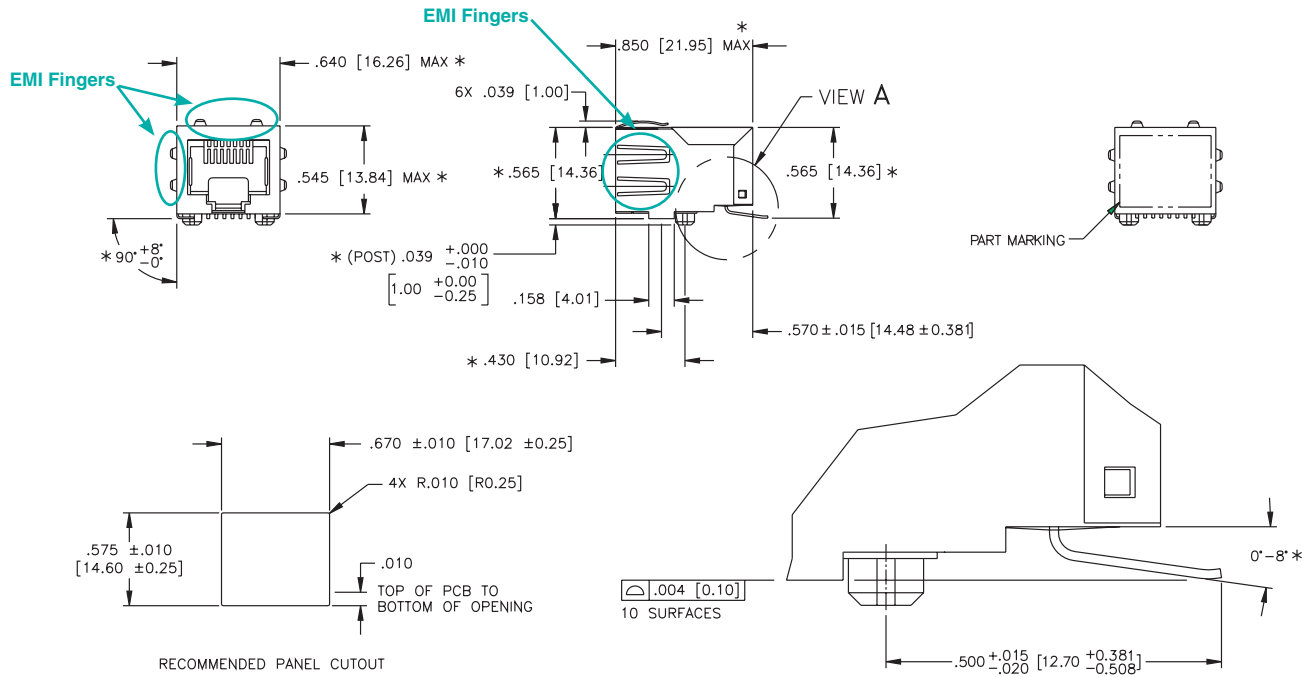
**JX30-0005NL**



### J0C Platform Mechanicals

J0C-0004NL/06NL

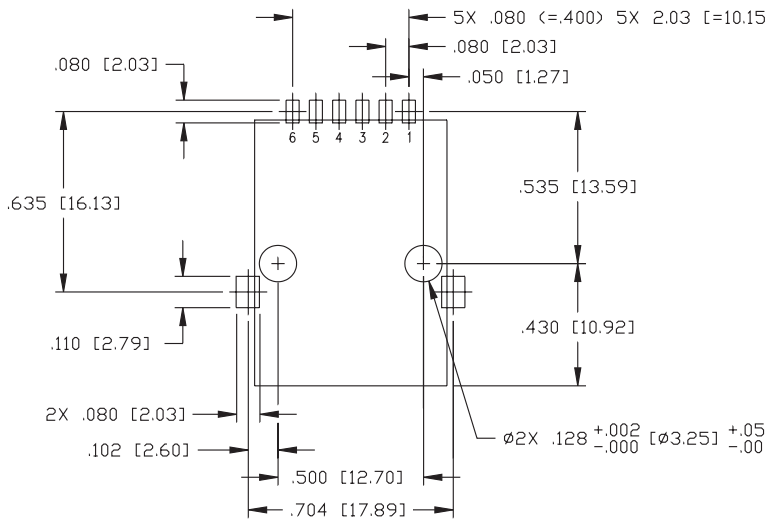
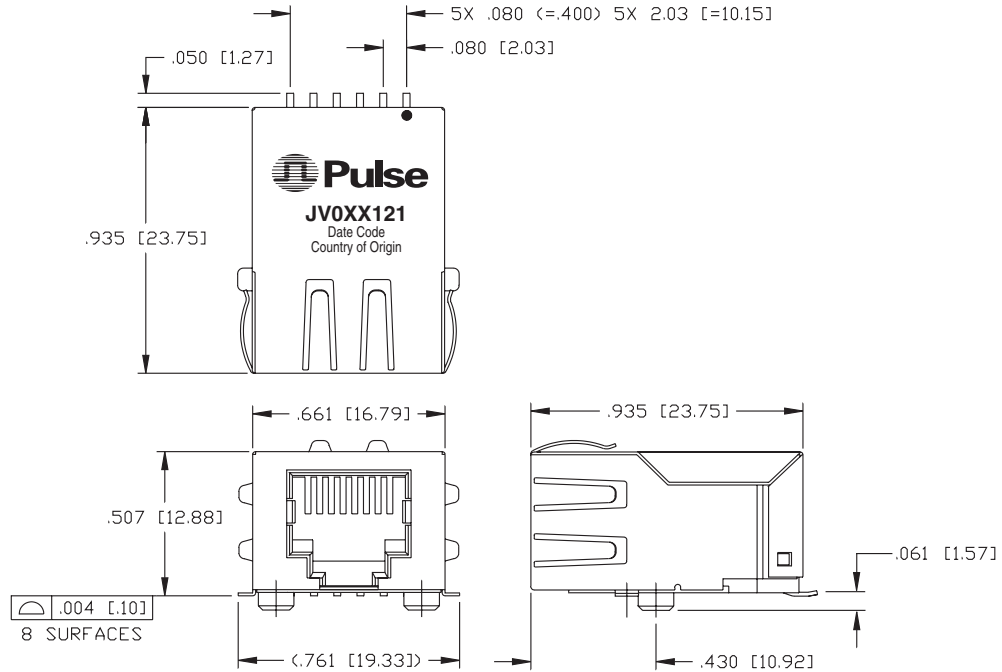
(J0C-0003NL/05NL - Same platform without



SUGGESTED FOOTPRINT (COMPONENT SIDE SHOWN)  
 DIMENSIONAL TOLERANCE: (UNLESS OTHERWISE SPECIFIED)  
 .XXX ±.003 [X.XX ±0.08]

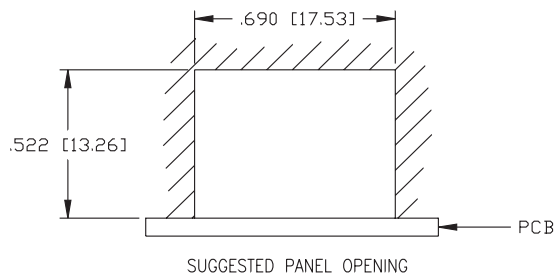
### JV Platform Mechanicals

#### JV Series



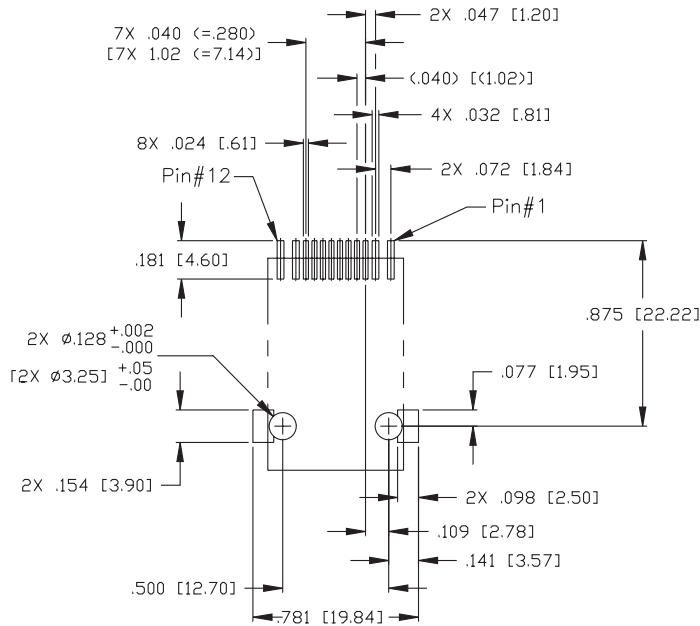
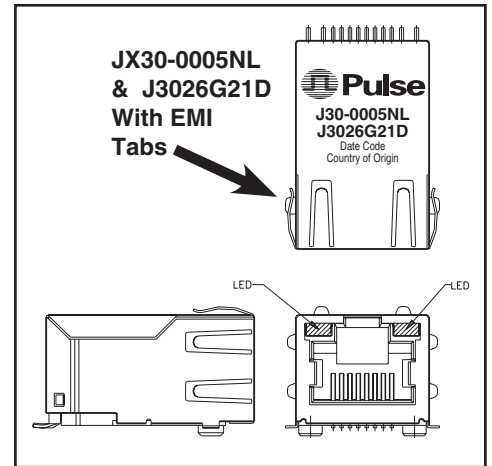
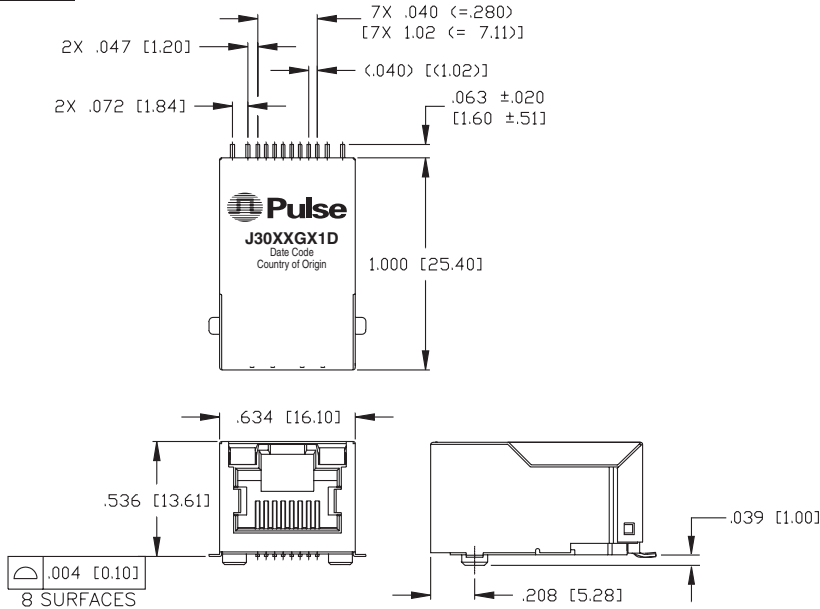
SUGGESTED PC BOARD LAYOUT VIEWED FROM COMPONENT SIDE  
 PCB LAYOUT DIMENSIONS TO BE  $\pm .003$  UNLESS OTHERWISE SPECIFIED

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



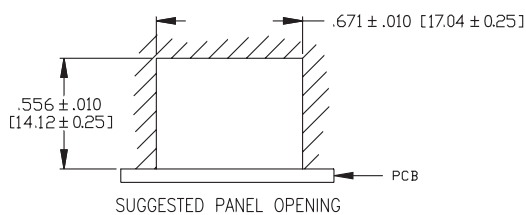
### J3 Platform Mechanical

#### J3 Series



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

SUGGESTED PC BOARD LAYOUT VIEWED FROM COMPONENT SIDE  
PCB LAYOUT DIMENSIONS TO BE  $\pm 0.003$  [ $\pm 0.08$ ] UNLESS OTHERWISE SPECIFIED





### J0C Application Note

This line of 10/100Base-TX SMT RJ45 1X1 Connector Magnetics Modules has been specifically designed for the implementation of a 10Base-T and 100Base-TX transmission over data-grade unshielded twisted pair cable (UTP-3, 5e and 6).

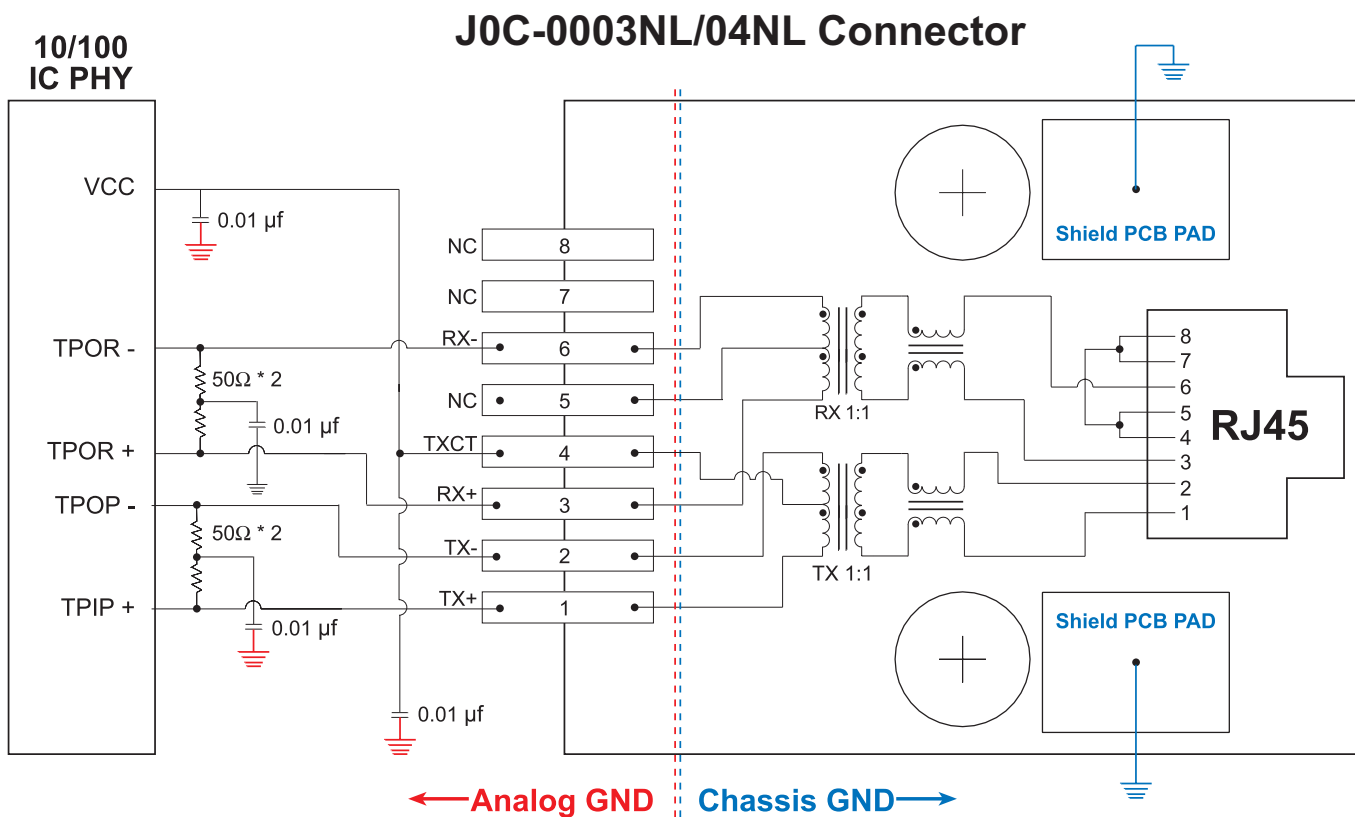
The connectors provide excellent EMI filtering and are suitable for adapter card and multiport applications. Pulse has worked closely with the leading IC manufacturers in providing these 10/100 solutions, thereby assuring compatibility with each transceiver.

The J0C series meets 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 350µH. The transformers used in each module also provide 1500Vrms minimum isolation, wide bandwidth with

minimal attenuation and fast rise times to minimize system level jitter.

The 1X1 SMT RJ45 connectors manufactured by Pulse are designed to meet all published specifications after exposure to surface mount soldering temperatures. The SMT are robust enough to withstand convection and infrared reflow solder temperatures. Additionally, compliant leads provide excellent solder-joint reliability with a coplanarity of 0.10mm (0.004")

**NOTE:** Modules are packaged in trays, unless Tape & Reel is specified (ex: J0C-0003NL for Trays and J0C-0003NLT for Tape & Reel).



NOTE: Connector design not to scale

#### PCB Layout Recommendations:

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

### JV Application Note

This line of 10/100Base-TX SMT RJ45 1X1 Connector Magnetics Modules has been specifically designed for the implementation of a 10Base-T and 100Base-TX transmission over data-grade unshielded twisted pair cable (UTP-3, 5e and 6).

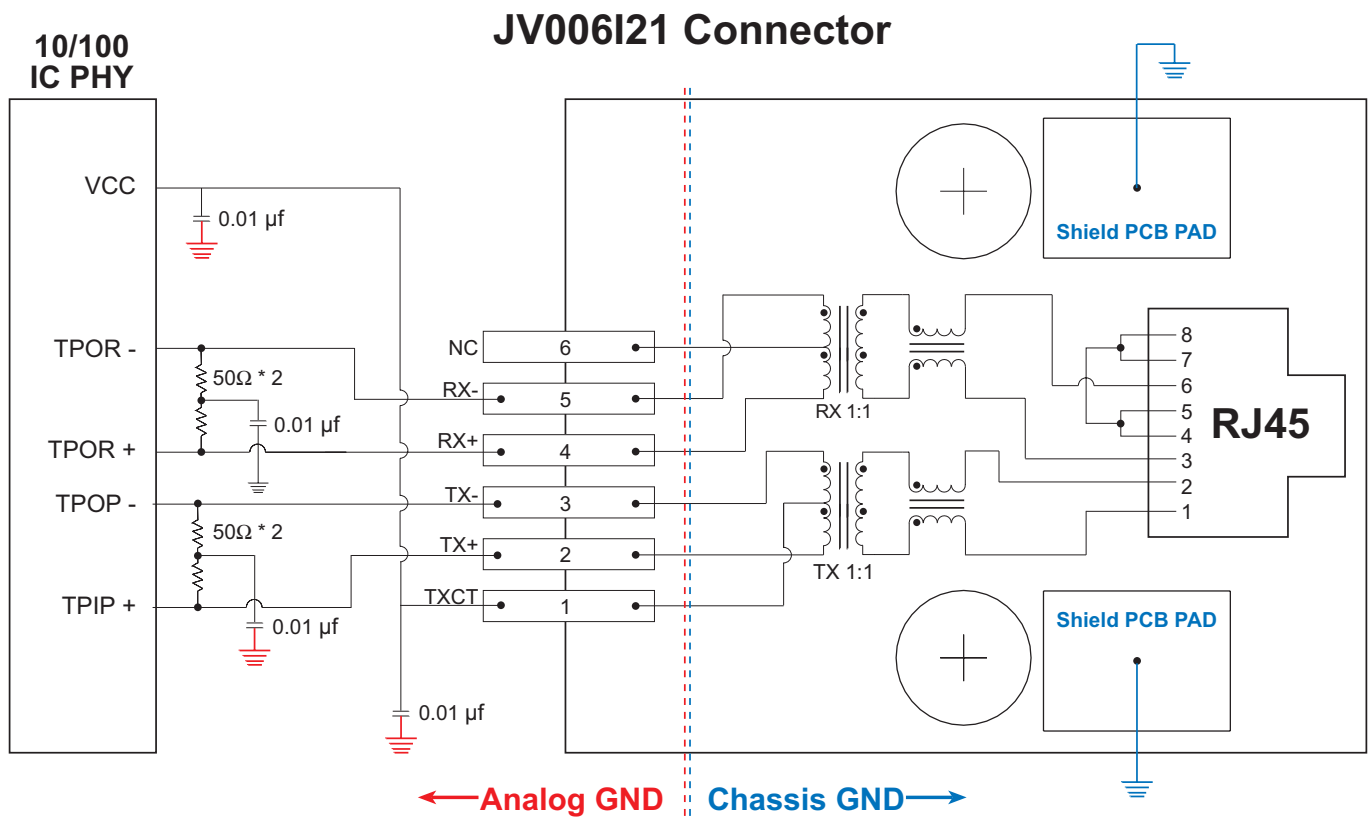
The connectors provide excellent EMI filtering and are suitable for adapter card and multiport applications. Pulse has worked closely with the leading IC manufacturers in providing these 10/100 solutions, thereby assuring compatibility with each transceiver.

The JV series meets 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 350µH. The transformers used in each module also provide 1500Vrms minimum isolation, wide bandwidth with

minimal attenuation and fast rise times to minimize system level jitter.

The 1X1 SMT RJ45 connectors manufactured by Pulse are designed to meet all published specifications after exposure to surface mount soldering temperatures. The SMT are robust enough to withstand convection and infrared reflow solder temperatures. Additionally, compliant leads provide excellent solder-joint reliability with a coplanarity of 0.10mm (0.004")

**NOTE:** Modules are packaged in trays, unless Tape & Reel is specified. Please add the suffix "T" for Tape & Reel orders (ex: JV006I21T). Add the suffix "NL" for RoHS compliant parts (ex: JV006I21NL for Trays and JV006I21NLT for Tape & Reel).



NOTE: Connector design not to scale

#### PCB Layout Recommendations:

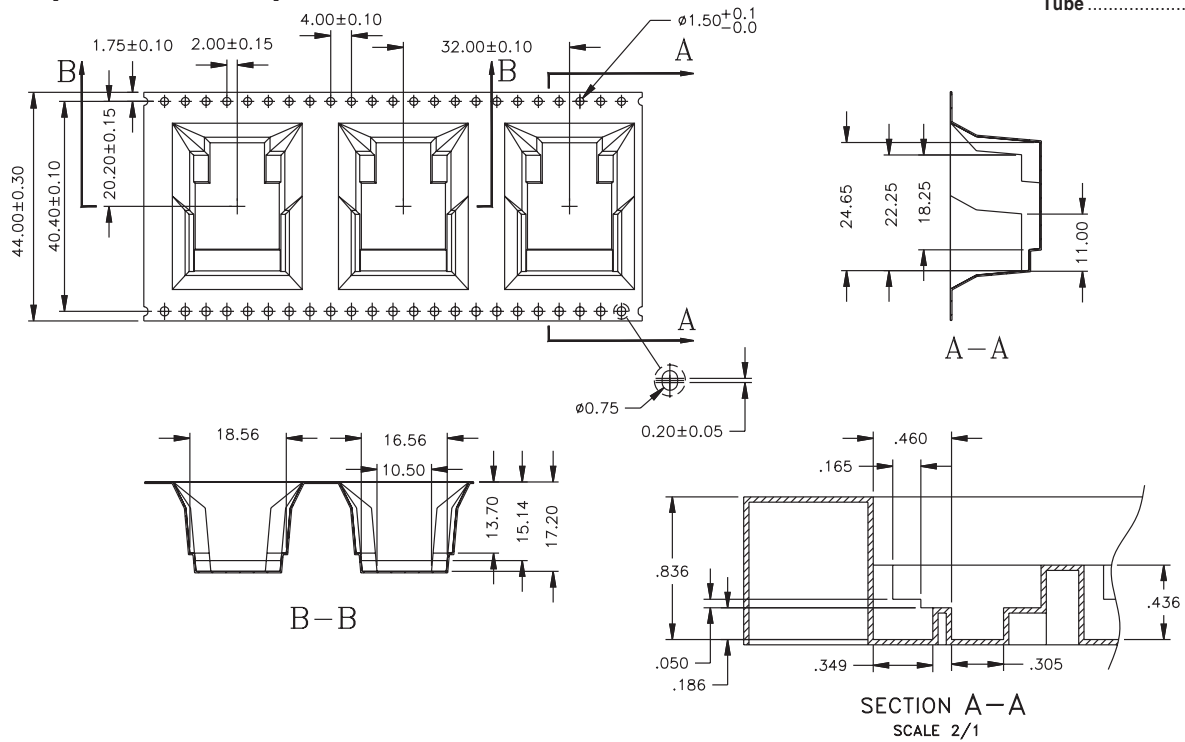
1. For maximum EMI suppression (electromagnetic interference) place the decoupling capacitors adjacent to Vcc and 50Ω connections.
2. Connections to ground should be as short as possible.
3. Connections between the 10/100 IC and the SMT connector should be direct (ideally no change in direction) and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

### J0C Packaging Specifications

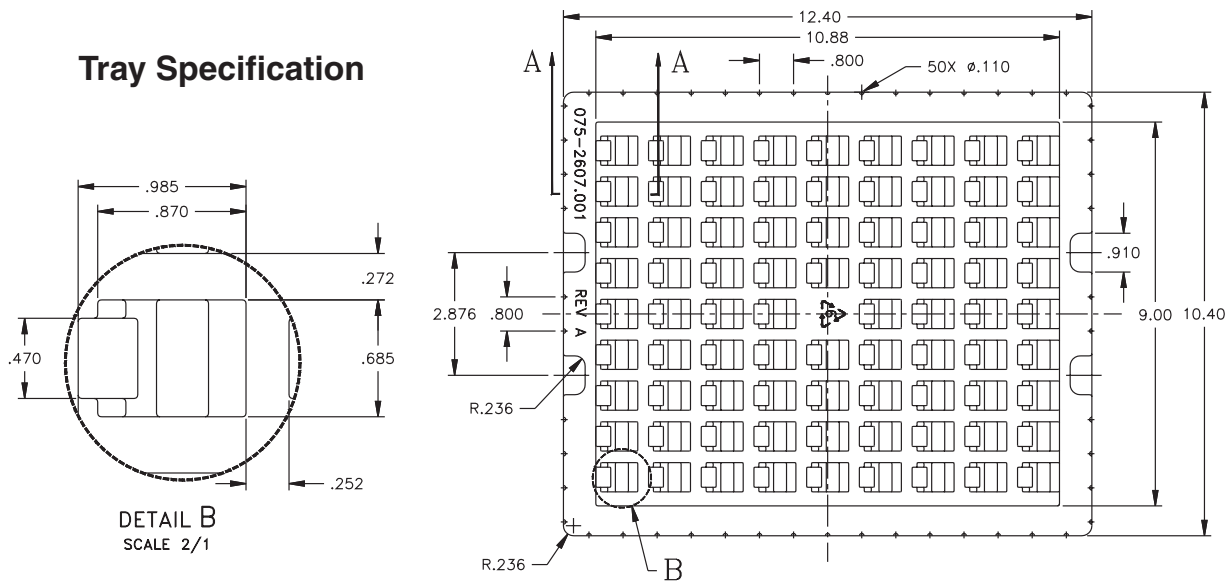
**J0C Series**

Weight.....7.07 grams  
 Tape & Reel..... 90/reel  
 Tray ..... 80/tray  
 Tape ..... 44x32mm  
 Tube ..... 25/tube

#### Tape and Reel Specification



#### Tray Specification

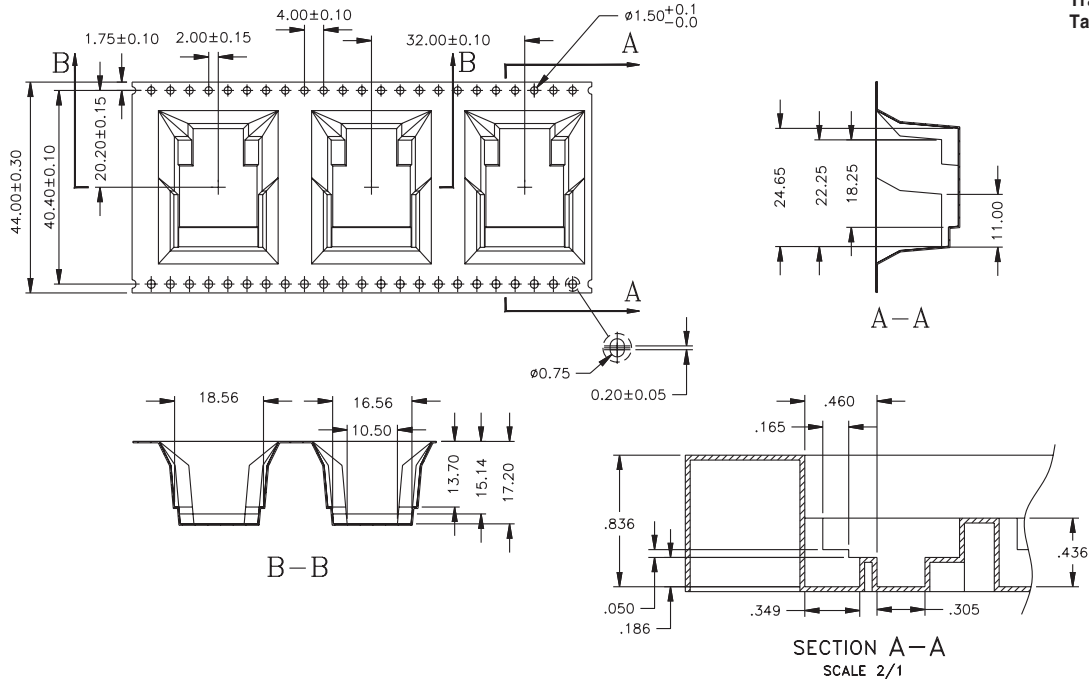




### J3 Packaging Specifications

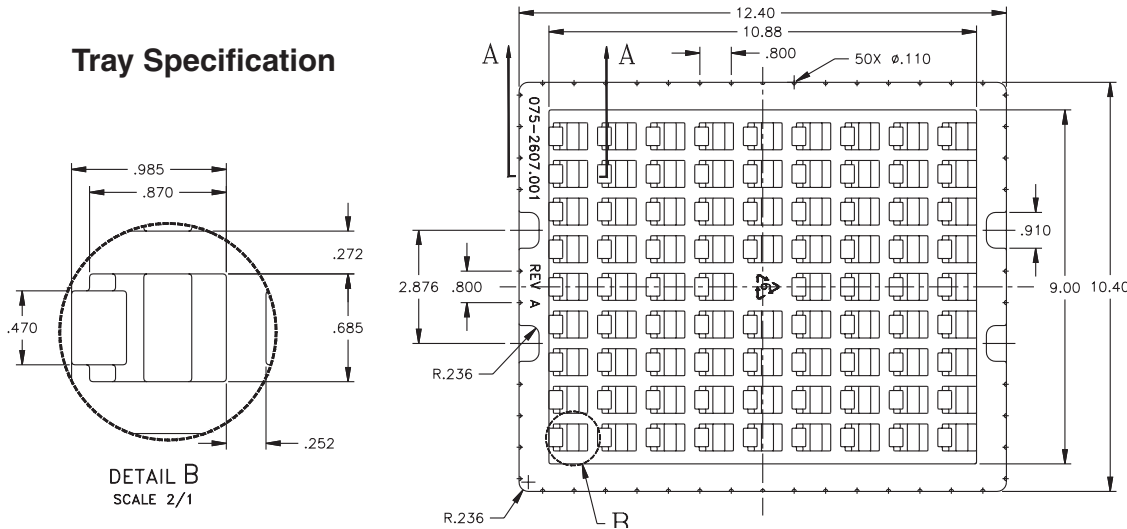
#### J3 Series

#### Tape and Reel Specification



Weight.....8.1 grams  
 Tape & Reel..... 75/reel  
 Tray ..... 45/tray  
 Tape .....56x32mm

#### Tray Specification



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