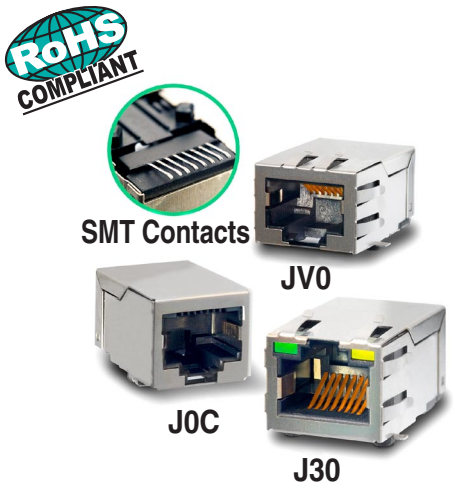
# PULSEJACK™
## Surface Mount 1x1

### 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
- J0C 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[1] 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 |
| J0C-0003NL | 1CT:1 | 1CT:1 | Down | No | No | No | -1.0 | -18 | -14 | -10 | -35 | -35 | -30 | -20 | -20 | 1500 |
| J0C-0004NL | 1CT:1 | 1CT:1 | Down | No | No | Yes | -1.0 | -18 | -14 | -10 | -35 | -35 | -30 | -20 | -20 | 1500 |
| J0C-0005NL | 1CT:1 | 1CT:1 | Down | No | Yes | No | -1.0 | -18 | -14 | -10 | -35 | -35 | -30 | -20 | -20 | 1500 |
| J0C-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[3] | 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. J0C-0004**T**).
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) |
|---|---|---|---|---|
| J0C/JV/J3 Series | 5 lbs./2.268 kgs. | 5 lbs./2.268 kgs. | 750 Insertions | 20 lbs./9.072 kgs. |

**RJ45 Material Specification**

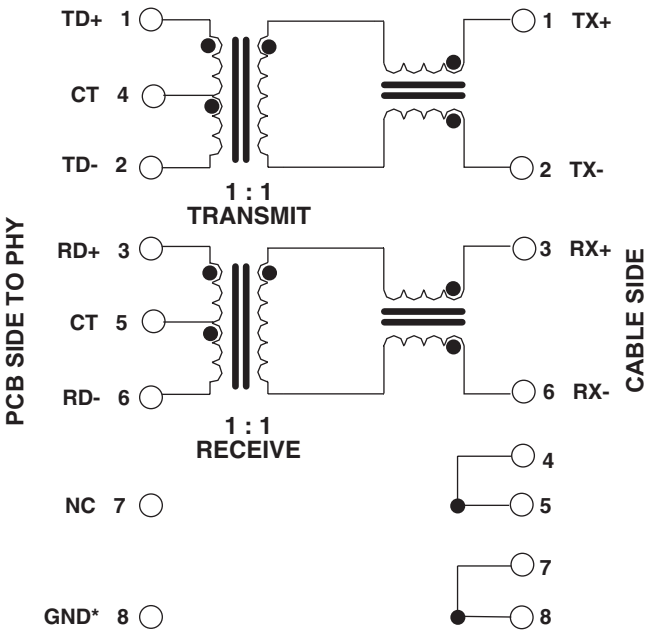
| Part Number | Shield | | Contact | | | Housing | | MSL[2] Rating |
|---|---|---|---|---|---|---|---|---|
| | Material | Finish | Material | Plating Area[3] | Solder Area[5] | Material | Specification | |
| J0C/JV/J3 Series | Brass | 20-40µ inches thick nickel over Brass | Phosphor Bronze | (**X**)µ inches gold over 30-80µ inches nickel | Tin matte finish | High Temp. Thermoplastic | UL 94 V-0 | 1[4] |

**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 J0C platform.
**4.** The MSL rating for J0C-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*

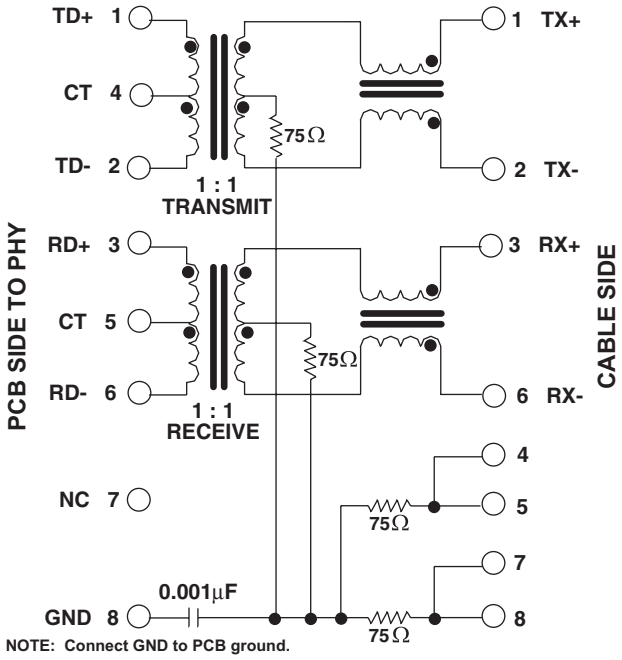
# J0C Platform Schematics

## J0C-0003NL/04NL

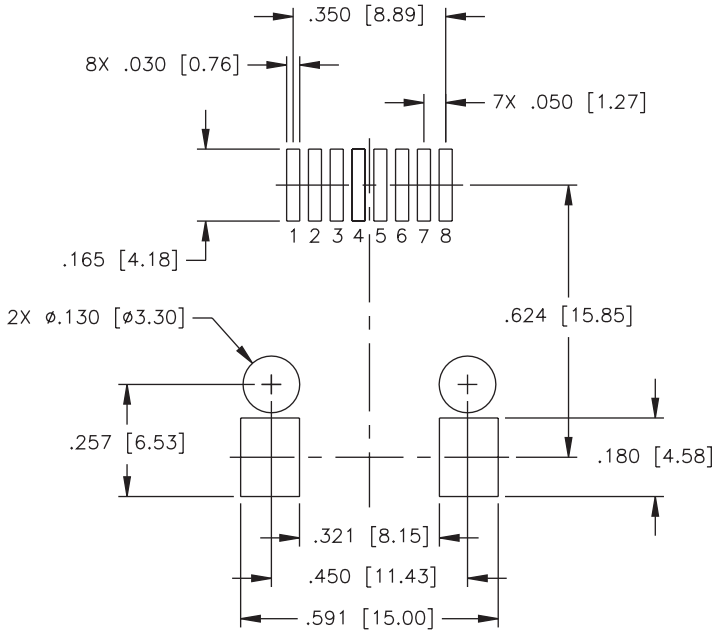



*Connecting pin 8 to Ground makes **J00-0042/46/64/66** footprint compatible to **J00-0014/45/61/65.**

## J0C-0005NL/06NL



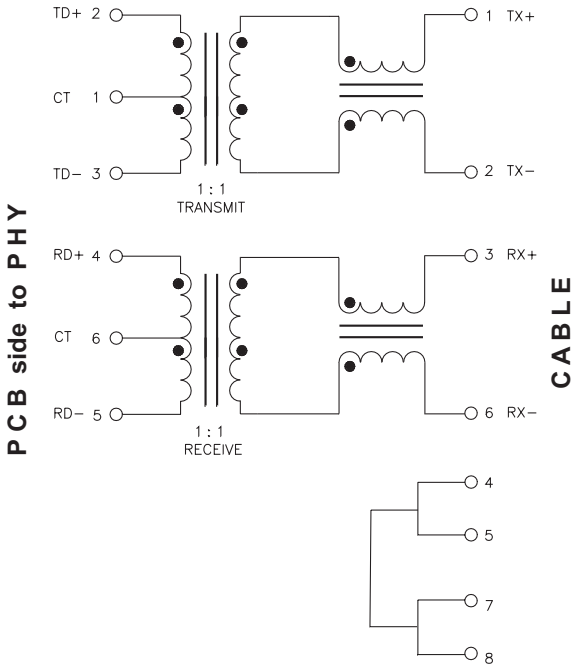

NOTE: Connect GND to PCB ground.



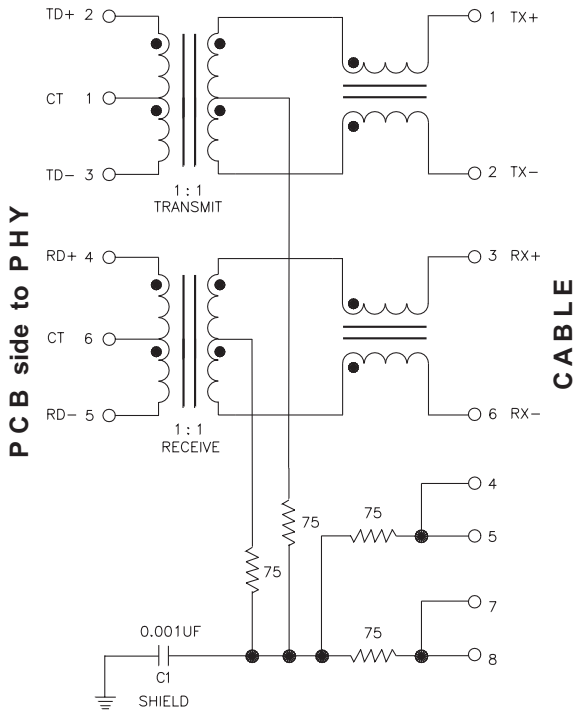

SUGGESTED FOOTPRINT (COMPONENT SIDE SHOWN)
DIMENSIONAL TOLERANCE: (UNLESS OTHERWISE SPECIFIED)
.XXX ±.003 [X.XX ±0.08]

# JV Platform Schematics

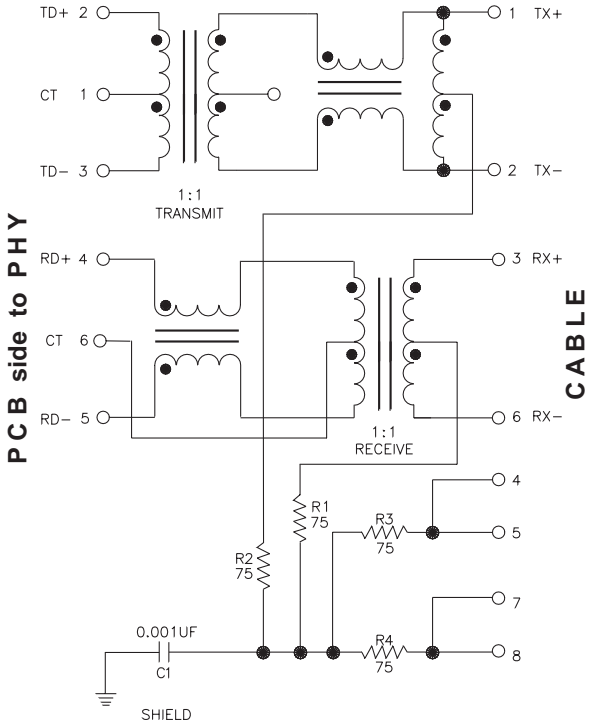
## JV006




## JV011

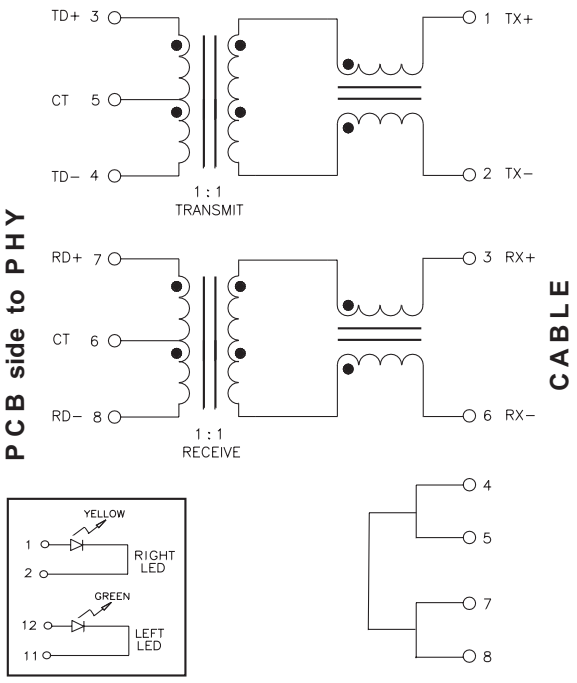



## JV026

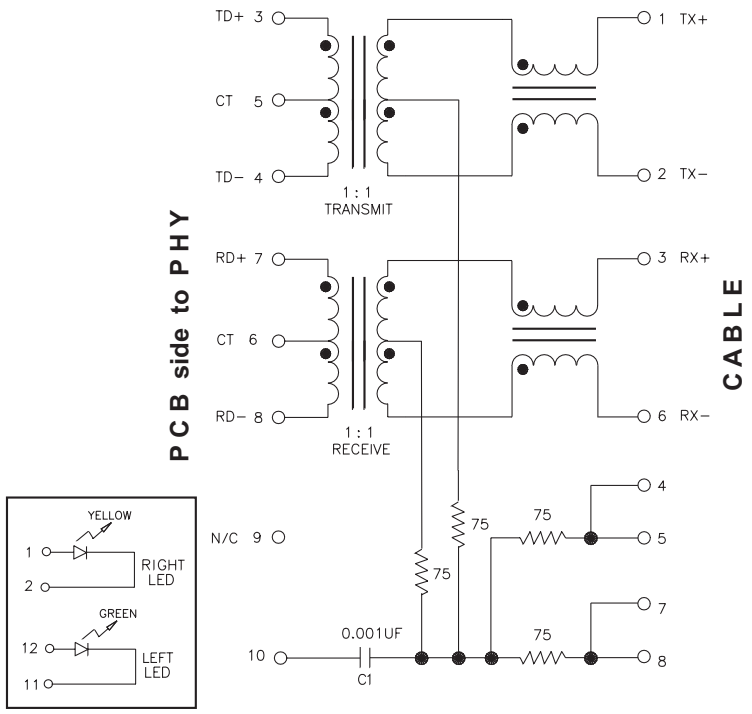


# J3 Platform Schematics

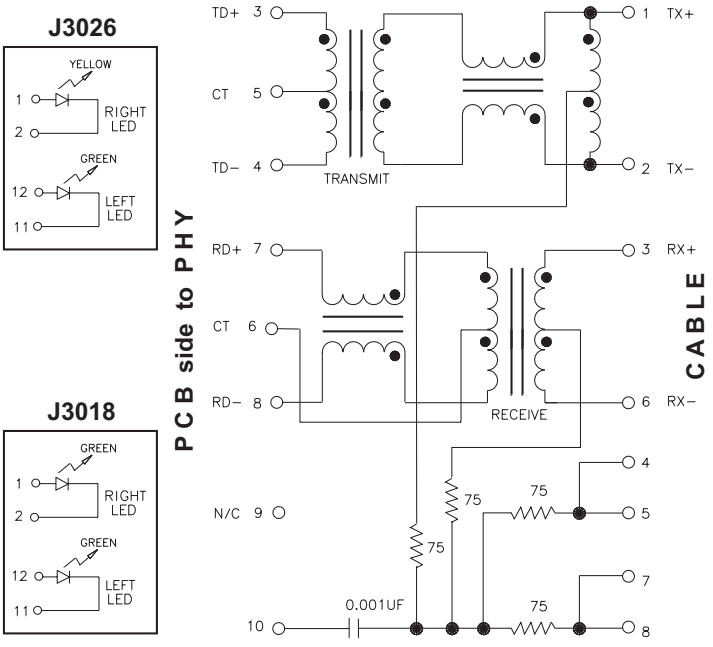
## J3006



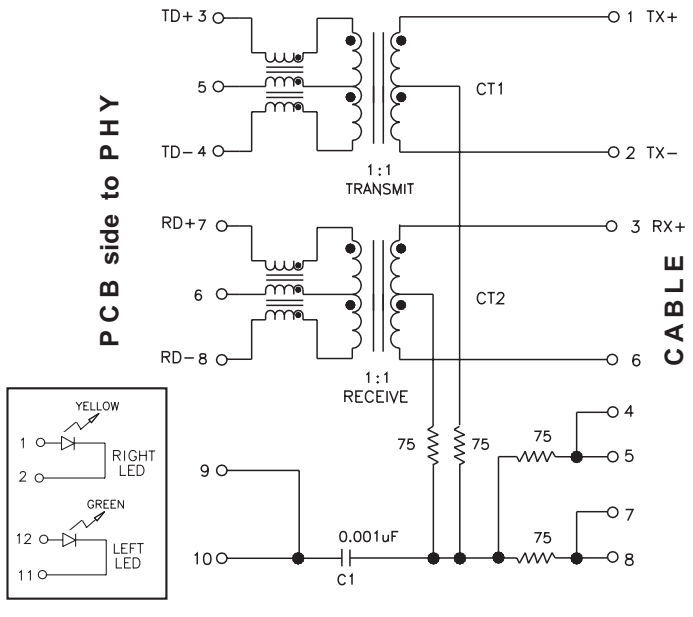

## J3011




## J3018/J3026

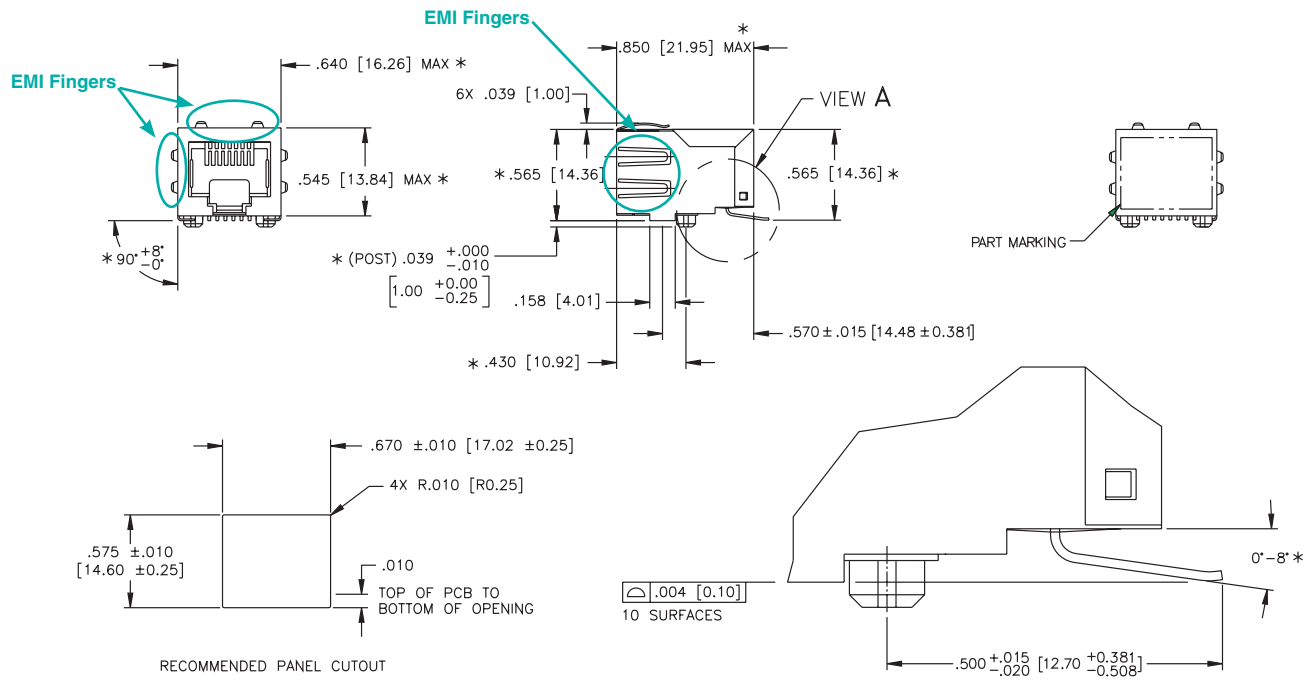


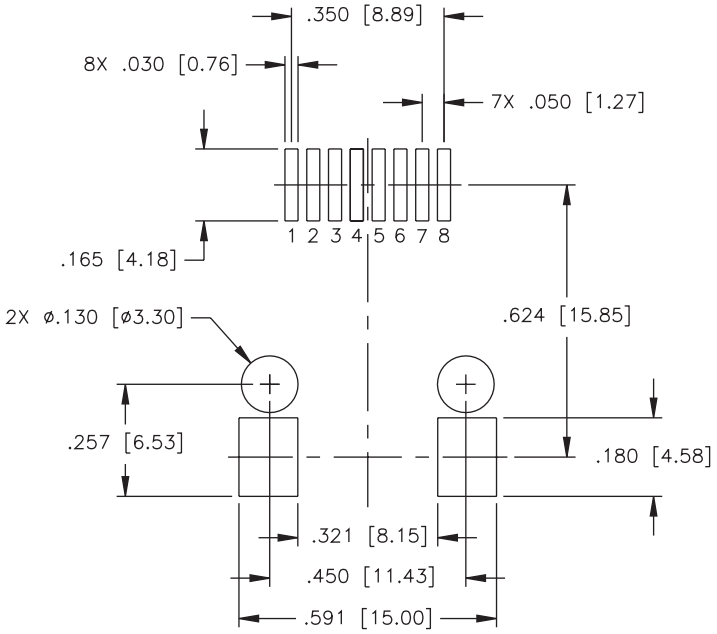

## JX30-0005NL



# J0C Platform Mechanicals

**J0C-0004NL/06NL** (J0C-0003NL/05NL - Same platform without

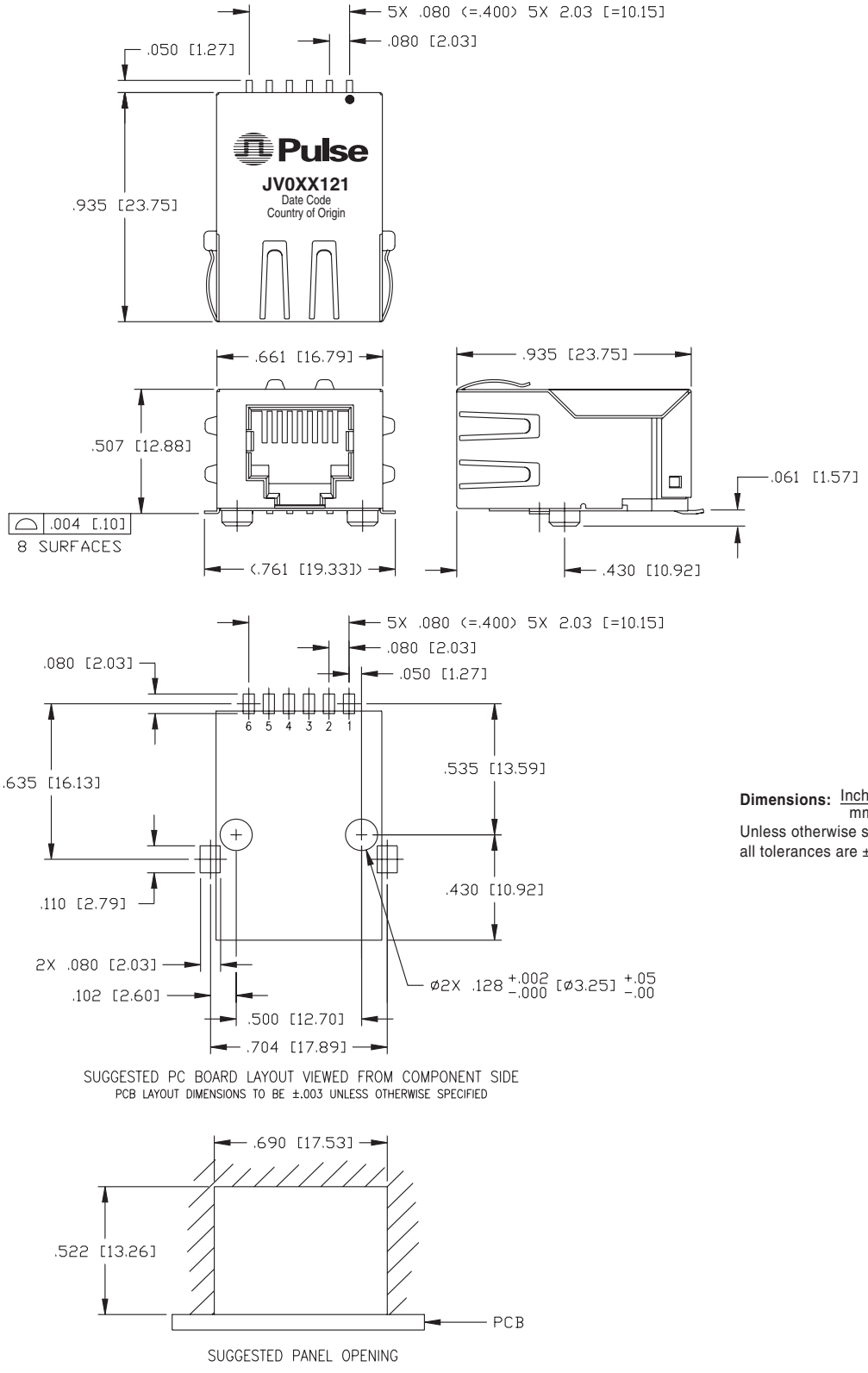



SUGGESTED FOOTPRINT (COMPONENT SIDE SHOWN)
DIMENSIONAL TOLERANCE: (UNLESS OTHERWISE SPECIFIED)
.XXX ±.003 [X.XX ±0.08]

# JV Platform Mechanicals

**JV Series**

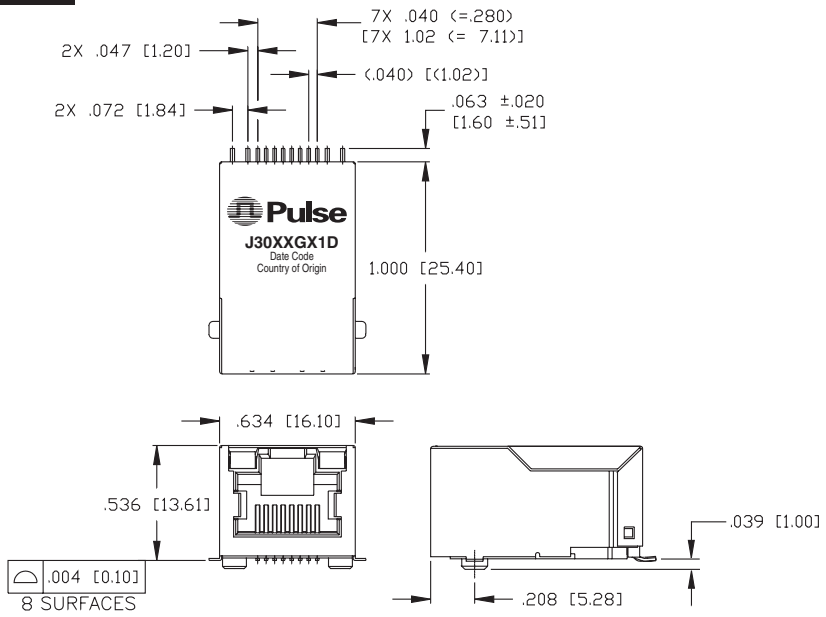


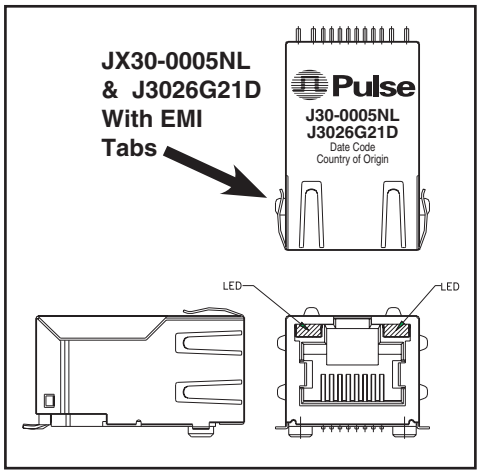

**Dimensions:** Inches / mm

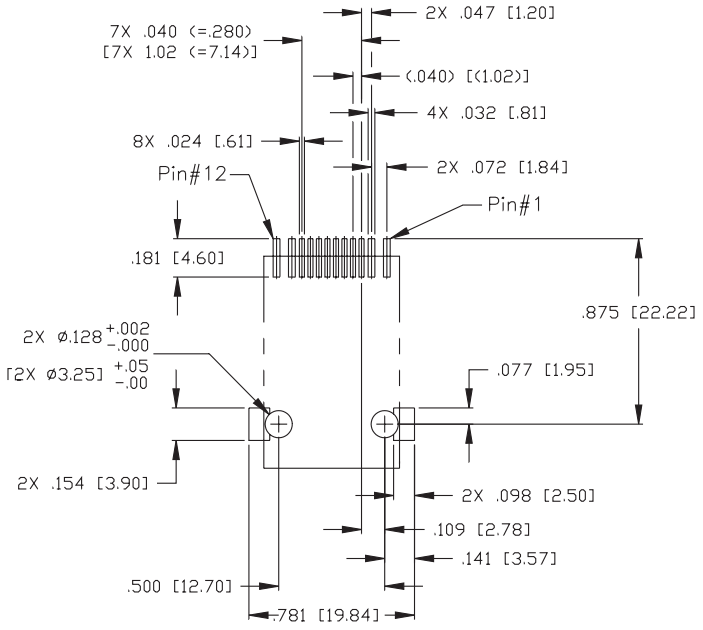
Unless otherwise specified, all tolerances are ± .010 / 0,25

# J3 Platform Mechanical

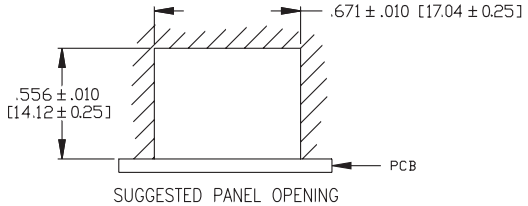
**J3 Series**




SUGGESTED PC BOARD LAYOUT VIEWED FROM COMPONENT SIDE
PCB LAYOUT DIMENSIONS TO BE ±.003 [±0.08] UNLESS OTHERWISE SPECIFIED




SUGGESTED PANEL OPENING

**Dimensions:** Inches / mm

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

# 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).

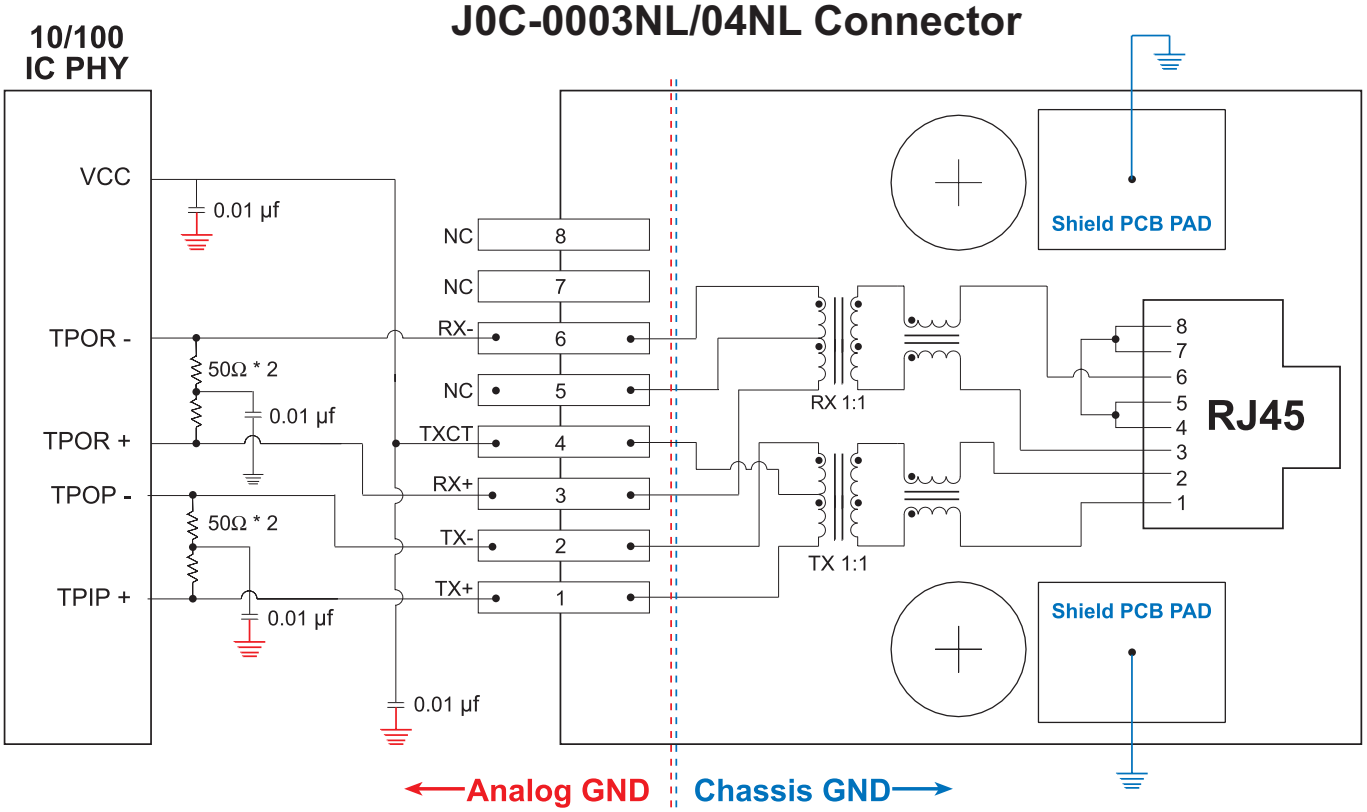
The connectors provide excellent EMI filtering and are suitable for adapter card and multiport applications. Pulse has worked closely with the leading IC manufacturers in providing these 10/100 solutions, thereby assuring compatibility with each transceiver.

The JC0 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-0003**NL** for Trays and J0C-0003NL**T** for Tape & Reel).

## J0C-0003NL/04NL Connector




**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).

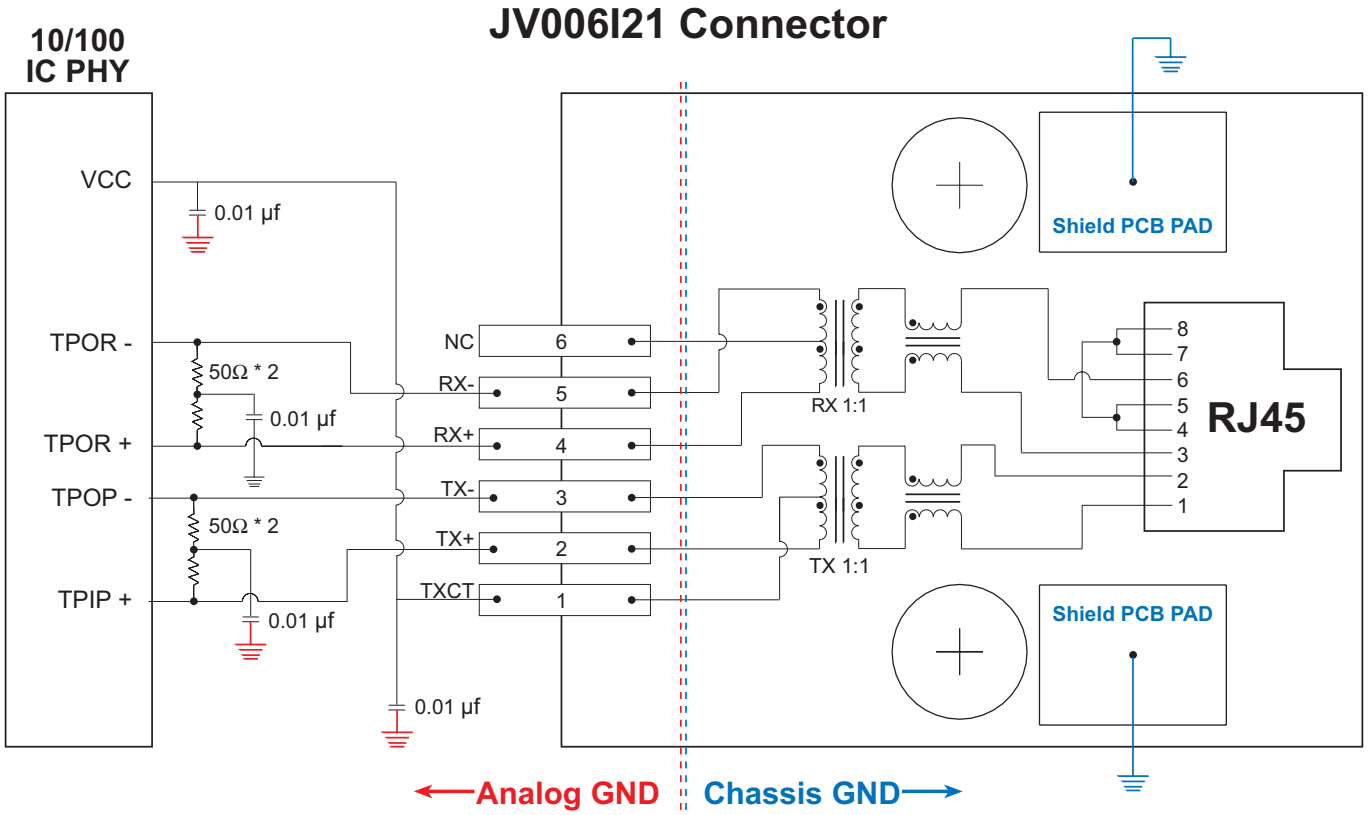
The connectors provide excellent EMI filtering and are suitable for adapter card and multiport applications. Pulse has worked closely with the leading IC manufacturers in providing these 10/100 solutions, thereby assuring compatibility with each transceiver.

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: JV006I21**T**). Add the suffix "**NL**" for RoHS compliant parts (ex: JV006I21**NL** for Trays and JV006I21NL**T** for Tape & Reel).

## JV006I21 Connector




**NOTE:** Connector design not to scale

**PCB Layout Recommendations:**

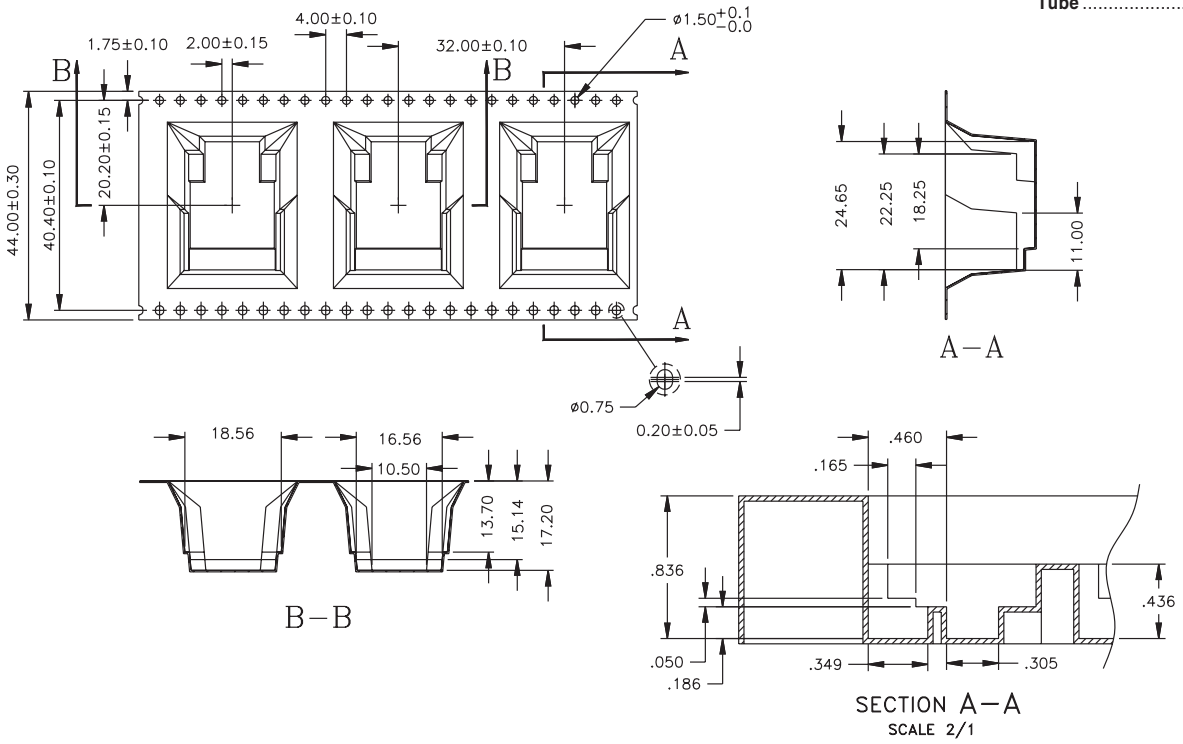
1. For maximum EMI suppression (electromagnetic interference) place the decoupling capacitors adjacent to Vcc and 50Ω connections.
2. Connections to ground should be as short as possible.
3. Connections between the 10/100 IC and the SMT connector should be direct (ideally no change in direction) and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

# J0C Packaging Specifications

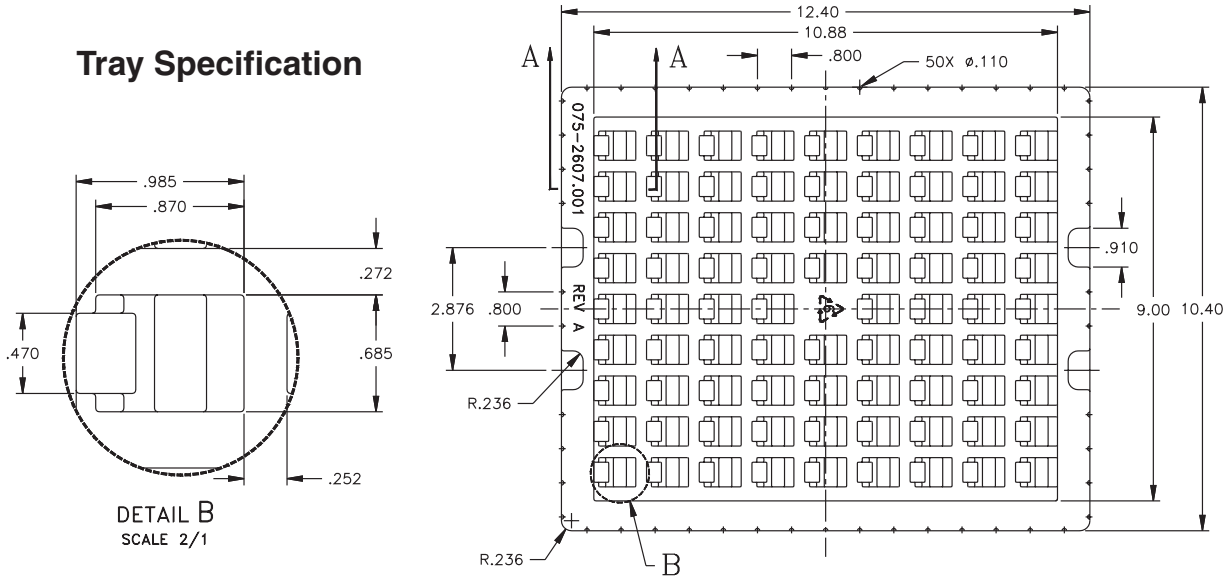
**J0C Series**

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

## Tape and Reel Specification




## Tray Specification

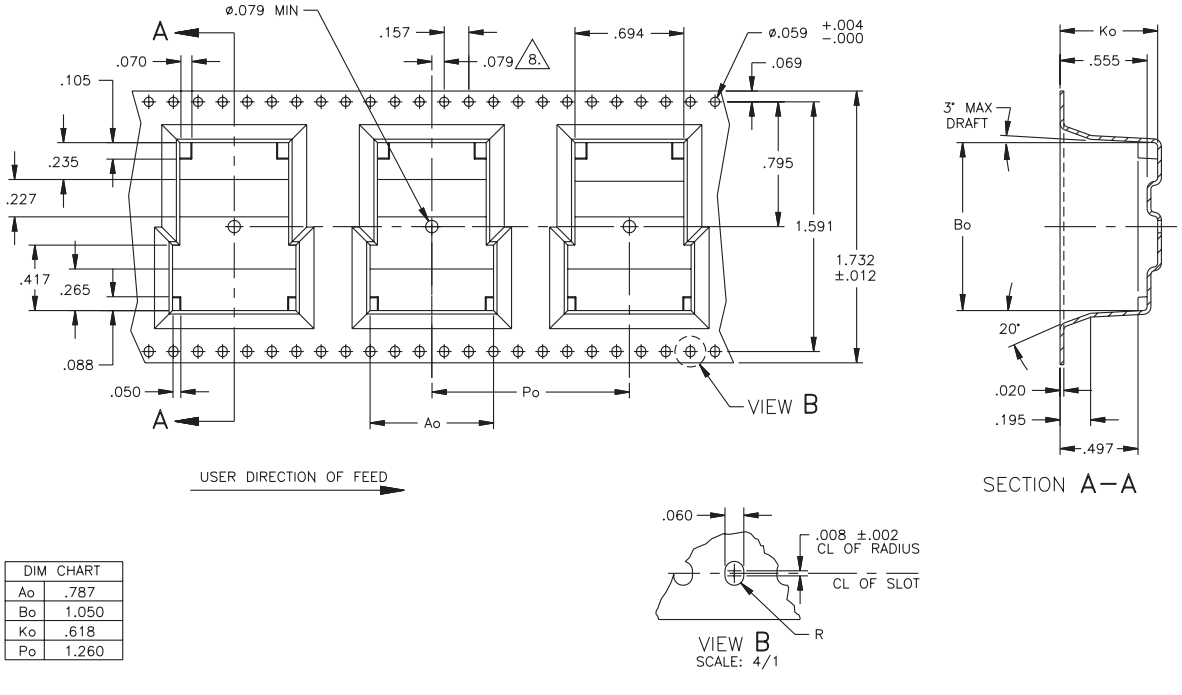


# JV Packaging Specifications

**JV Series**

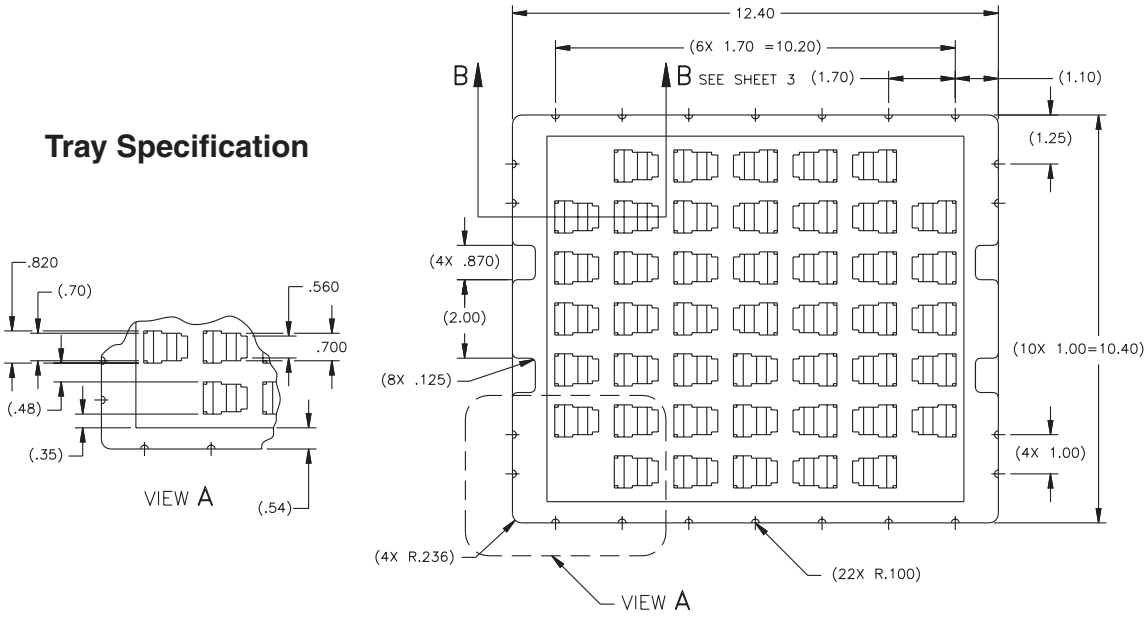
**Weight**.....6.6 grams
**Tape & Reel**..... 150/reel
**Tray**..... 45/tray
**Tape** ..... 44x32mm

## Tape and Reel Specification




| DIM | CHART |
|---|---|
| Ao | .787 |
| Bo | 1.050 |
| Ko | .618 |
| Po | 1.260 |

## Tray Specification

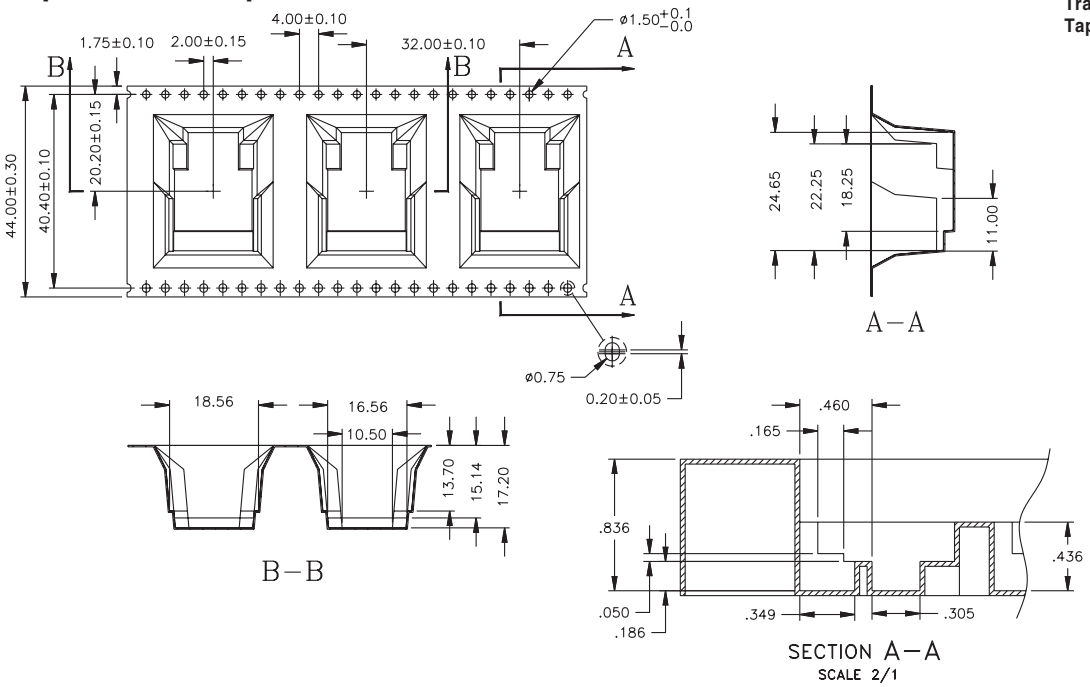


# J3 Packaging Specifications

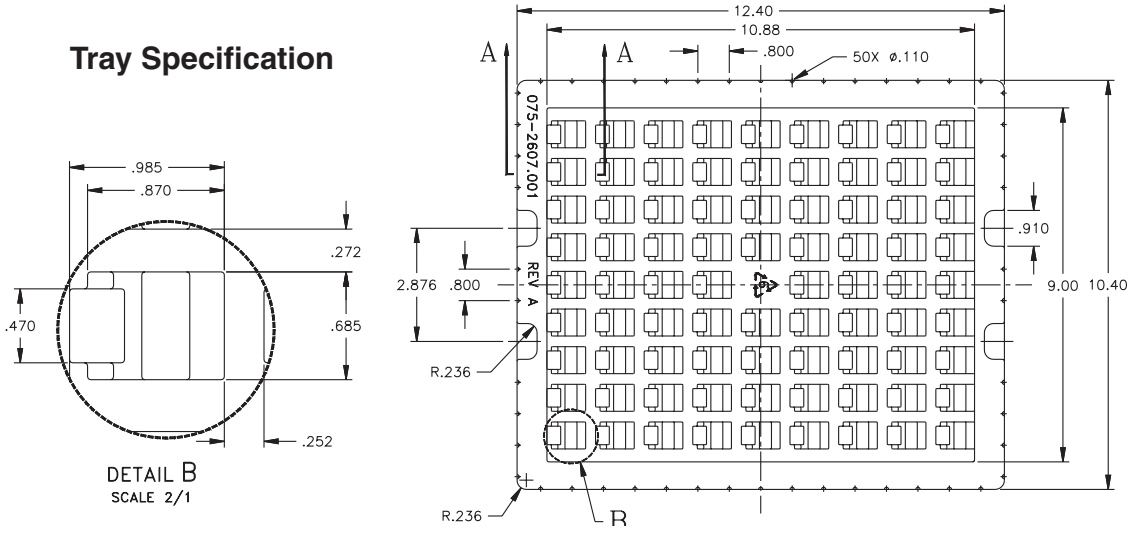
**J3 Series**

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

## Tape and Reel Specification




## Tray Specification




## For More Information:

**Pulse Worldwide Headquarters**
Two Pearl Buck Court
Bristol, PA 19007
U.S.A.

***www.pulseeng.com***
Tel: 215 781 6400
Fax: 215 781 6403

**Pulse Europe**
Einsteinstrasse 1
D-71083 Herrenberg
Germany

Tel: 49 7032 7806 0
Fax: 49 7032 7806 135

**Pulse China Headquarters**
B402, Shenzhen Academy of Aerospace Technology Bldg.
10th Kejinan Rd.
High-Tech Zone
Nanshan District
Shenzen, PR China 518057
Tel: 86 755 33966678
Fax: 86 755 33966700

**Pulse North China**
Room 2704/2705
Super Ocean Finance Ctr.
2067 Yan An Rd. West
Shanghai 200336
China

Tel: 86 21 62787060
Fax: 86 2162786973

**Pulse South Asia**
135 Joo Seng Rd.
#03-02
PM Industrial Bldg.
Singapore 368363

Tel: 65 6287 8998
Fax: 65 6280 0080

**Pulse North Asia**
No. 26, Kao Ching Rd.
Yang Mei Chen
Taoyuan Hsien
Taiwan
R. O. C.

Tel: 886 3 4643715
Fax: 886 3 4641911

Performance warranty of products offered on this data sheet is limited to the parameters specified. Data is subject to change without notice. Other brand and product names mentioned herein may be trademarks or registered trademarks of their respective owners. © Copyright, 2009. Pulse Engineering, Inc. All rights reserved.

LifeElectronics
Живое партнерство

**ООО «ЛайфЭлектроникс»** **“LifeElectronics” LLC**

*ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703*

*Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.*

*С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров*

*Мы предлагаем:*

- *Конкурентоспособные цены и скидки постоянным клиентам.*
- *Специальные условия для постоянных клиентов.*
- *Подбор аналогов.*
- *Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.*

- *Приемлемые сроки поставки, возможна ускоренная поставка.*
- *Доставку товара в любую точку России и стран СНГ.*
- *Комплексную поставку.*
- *Работу по проектам и поставку образцов.*
- *Формирование склада под заказчика.*

- *Сертификаты соответствия на поставляемую продукцию (по желанию клиента).*
- *Тестирование поставляемой продукции.*
- *Поставку компонентов, требующих военную и космическую приемку.*
- *Входной контроль качества.*
- *Наличие сертификата ISO.*

*В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.*

*Конструкторский отдел помогает осуществить:*

- *Регистрацию проекта у производителя компонентов.*
- *Техническую поддержку проекта.*
- *Защиту от снятия компонента с производства.*
- *Оценку стоимости проекта по компонентам.*
- *Изготовление тестовой платы монтаж и пусконаладочные работы.*

*Тел: +7 (812) 336 43 04 (многоканальный)*
*Email: org@lifeelectronics.ru*

***www.lifeelectronics.ru***