

PulseJack™ Surface Mount 1x1

Description:

100 Base-TX (Fast Ethernet) 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 Cars (NIC).



Features and Benefits:

- Ⓜ RoHS peak wave reflow temperature rating 245°C
- Ⓜ JOC SMT product, reduced size and low cost alternative to JV series
- Ⓜ 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) @ 60 Hz 1 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 | |
| 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 | |
| JV006I2INL | 1CT:1 | 1CT:1 | Down | No | No | Yes | -1.0 | -20 | -16 | -12 | -40 | -35 | -30 | -30 | -20 | 1500 | |
| JV011I2INL | 1CT:1 | 1CT:1 | Down | No | Yes | Yes | -1.0 | -20 | -16 | -12 | -40 | -35 | -30 | -30 | -20 | 1500 | |
| JV026I2INL | 1CTS:1 | 1CT:1 | Down | No | Yes | Yes | -1.0 | -20 | -16 | -12 | -40 | -35 | -30 | -30 | -20 | 1500 | |
| J3011G2IDNL | 1CT:1 | 1CT:1 | Up | G/Y | Yes | Yes | -1.0 | -20 | -16 | -12 | -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. JOC-0004T).
3. Extended Temperature: -40° to 85° C

RJ45 Durability Test 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. |

PulseJack™

Surface Mount 1x1

RJ45 Material Specification

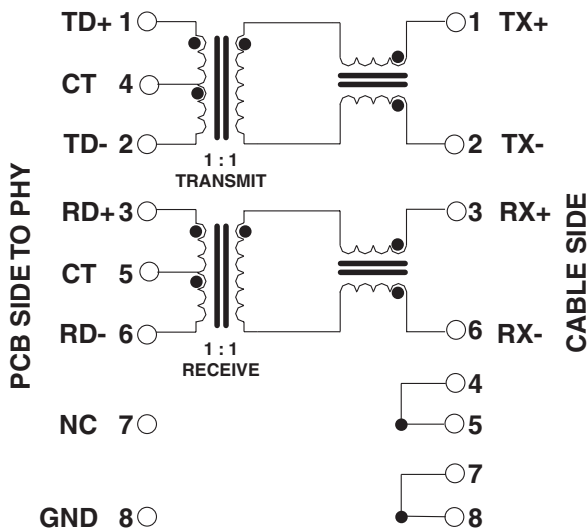
| Part Number | Shield | | Contact | | | Housing | | MSL ² Rating |
|------------------|----------|---------------------------------------|-----------------|--|--------------------------|--------------------------|---------------|-------------------------|
| | Material | Finish | Material | Plating Area ³ | Solder Area ⁴ | 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 |

Notes:

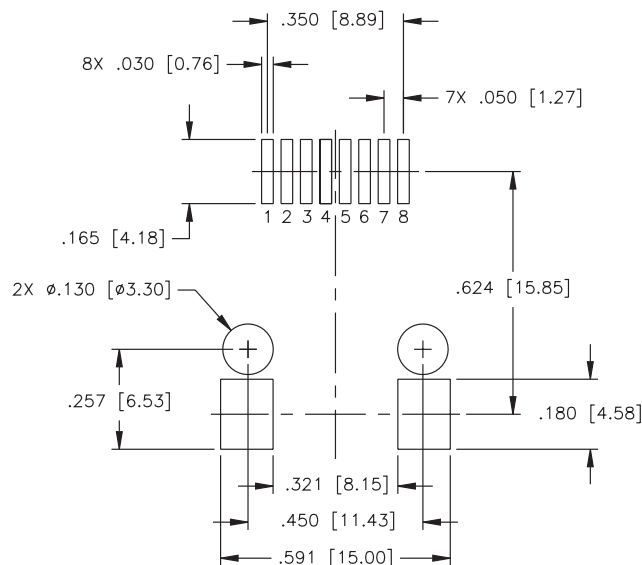
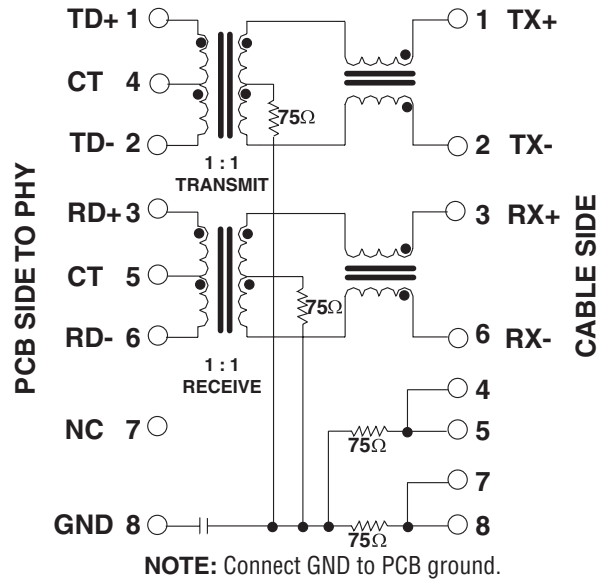
1. Connector dimensions comply with FCC part 68 dimension requirements.
2. MSL = Moisture Sensitivity Level rating: 1-5 (highest rating = 1, lowest rating = 5)
3. (X) = 30 inches gold for JV and J30 platforms and 15 inches gold for JOC platform.
4. NL parts are tin matte finish over nickel.

JOC Platform Schematics

JOC-0003NL/JOC-0004NL



JOC-0005NL/JOC-0006NL

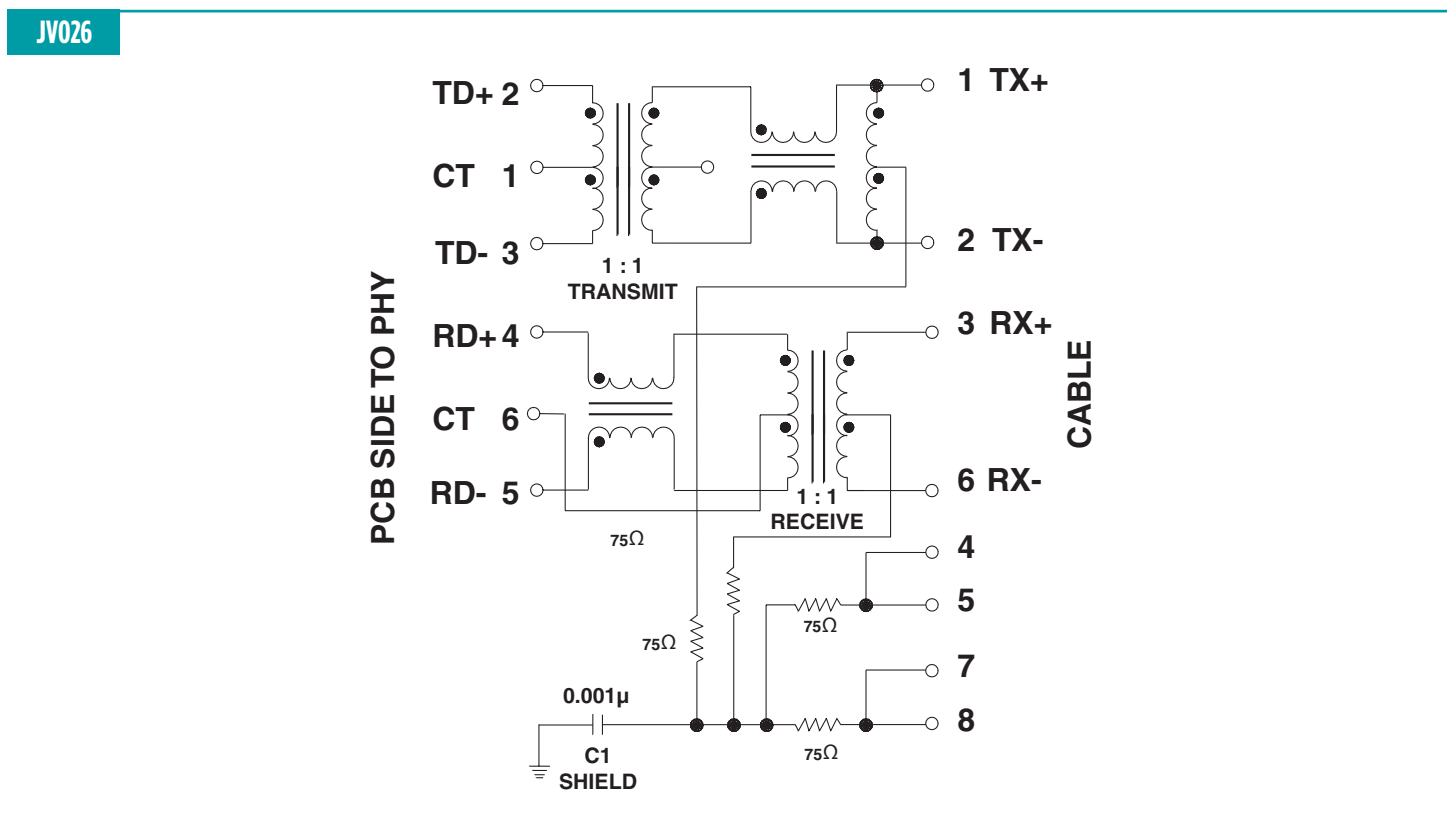
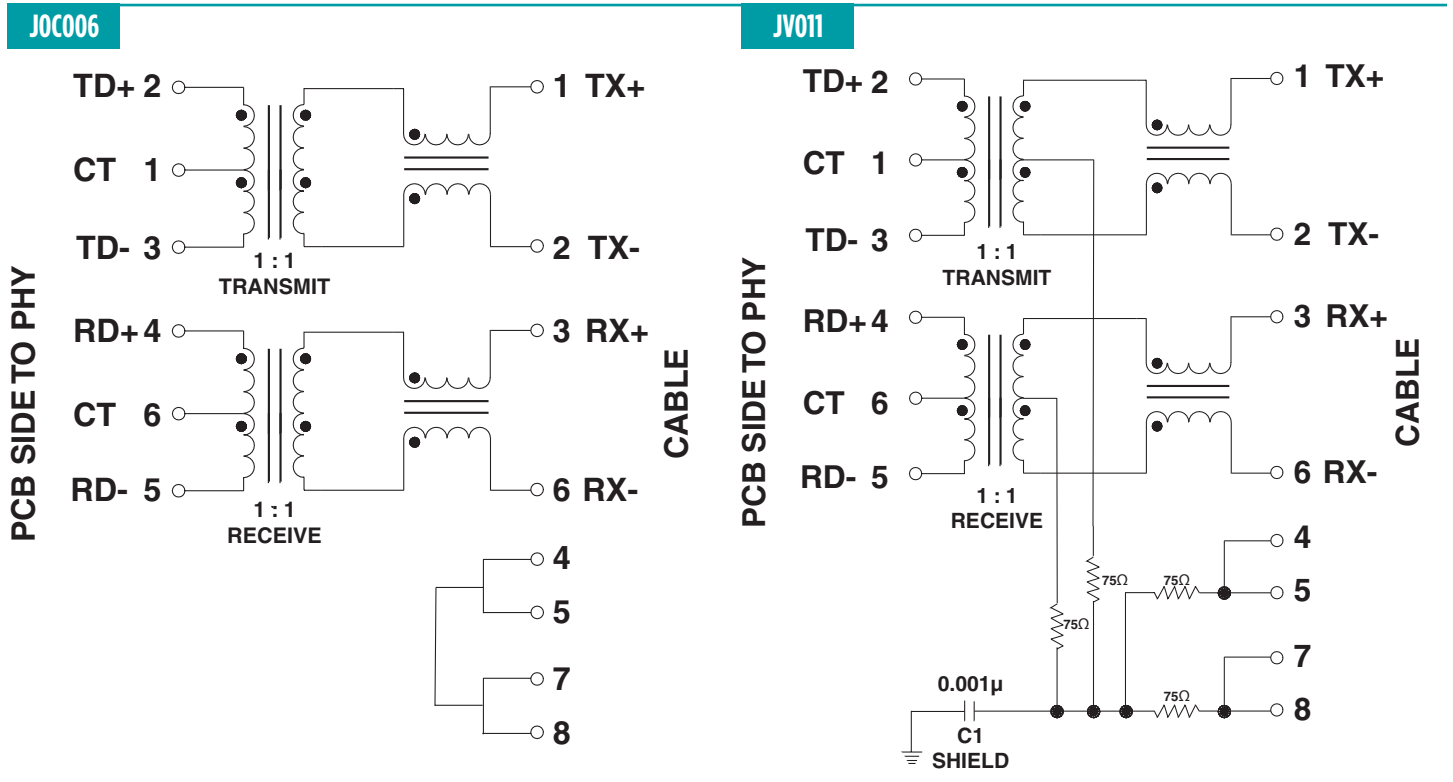


SUGGESTED FOOTPRINT (COMPONENT SIDE SHOWN)
 DIMENSIONAL TOLERANCE: (UNLESS OTHERWISE SPECIFIED)
 .XXX ±.003 [X.XX ±0.08]

PulseJack™

Surface Mount 1x1

JV Platform Schematics

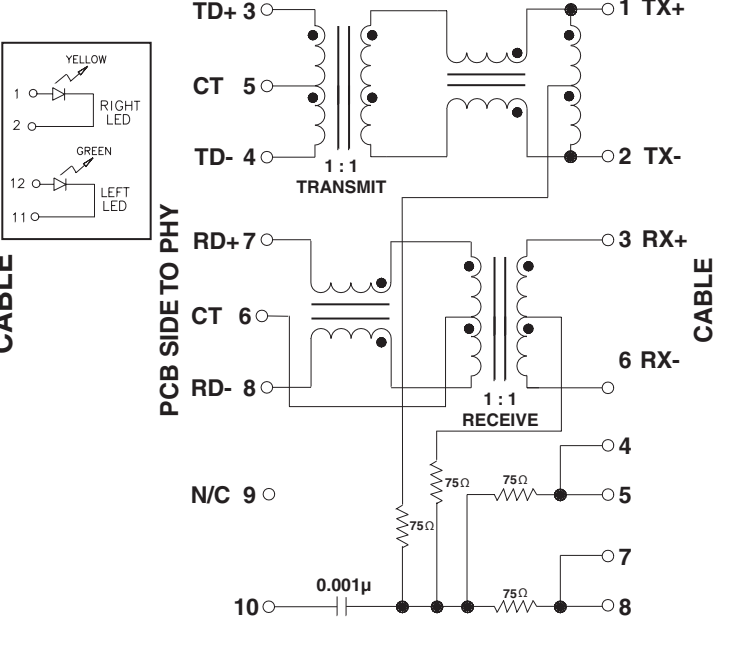
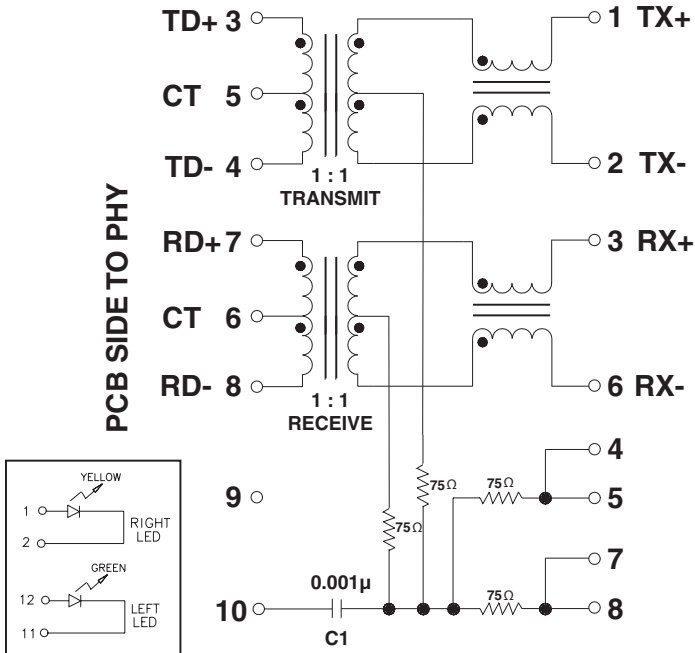


PulseJack™ Surface Mount 1x1

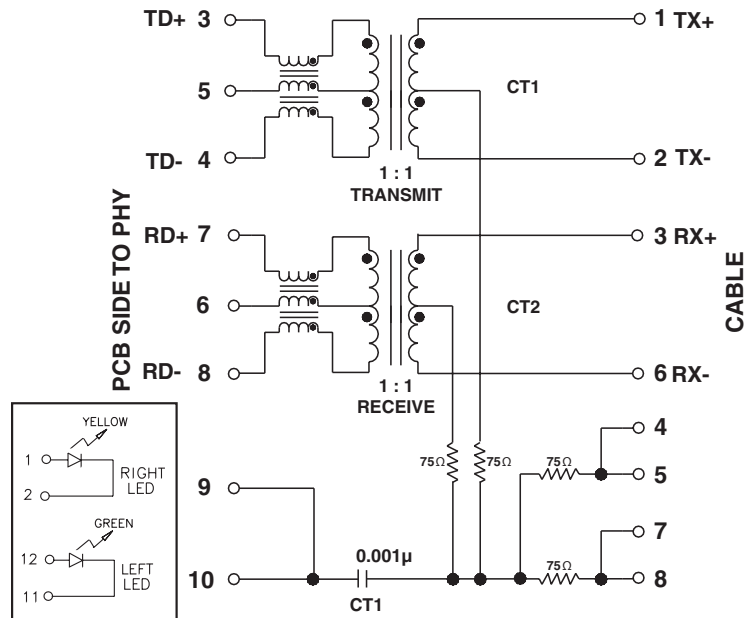
J3 Platform Schematics

J3011

J3026



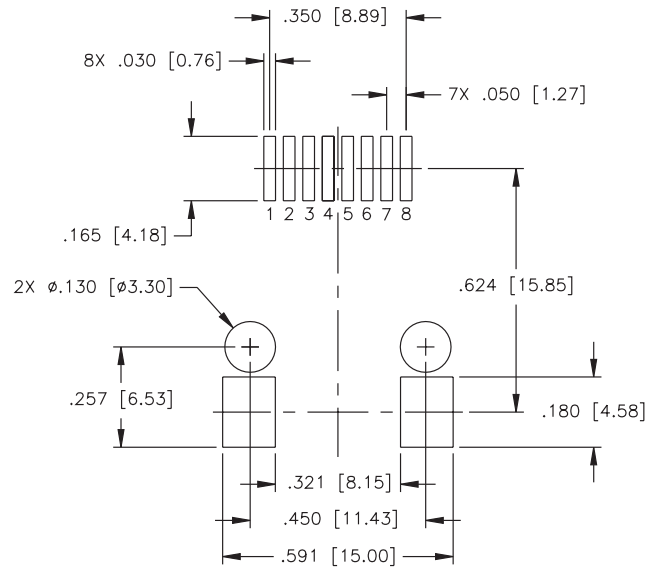
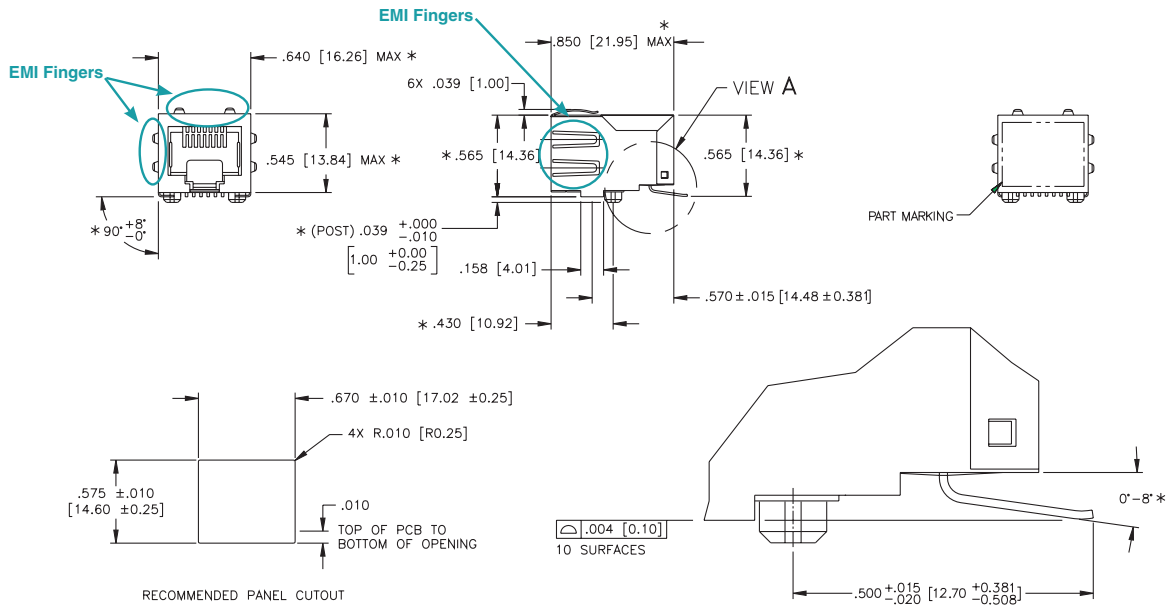
JX30-0005NL



PulseJack™ Surface Mount 1x1

JOC Platform Mechanicals

JOC-0004NL/06NL

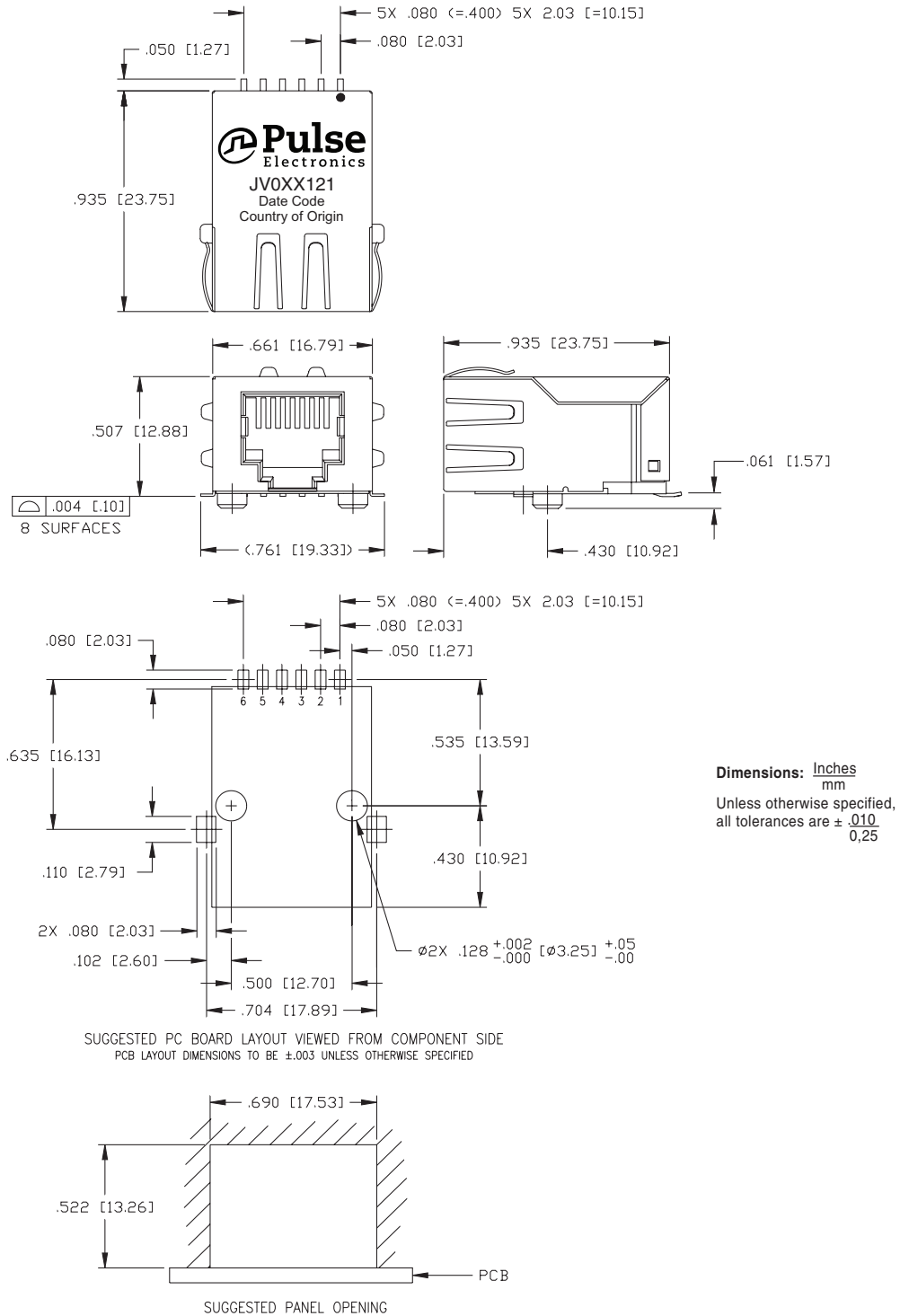


SUGGESTED FOOTPRINT (COMPONENT SIDE SHOWN)
DIMENSIONAL TOLERANCE: (UNLESS OTHERWISE SPECIFIED)
.XXX ±.003 [X.XX ±0.08]

PulseJack™ Surface Mount 1x1

JV Platform Mechanicals

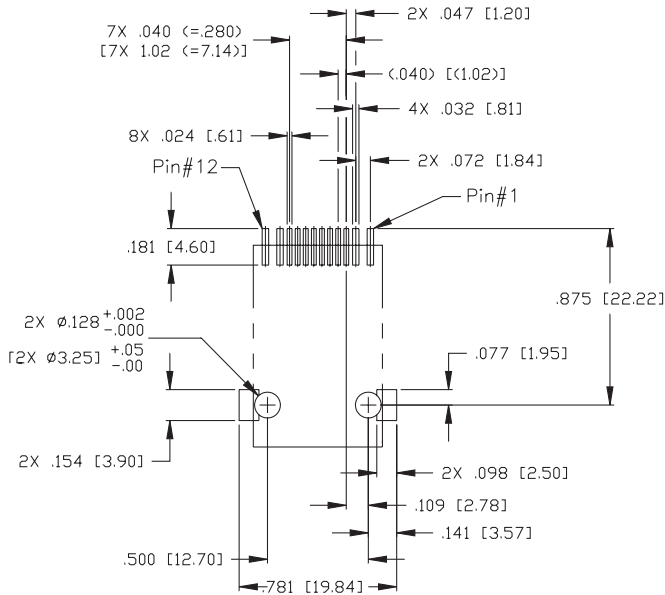
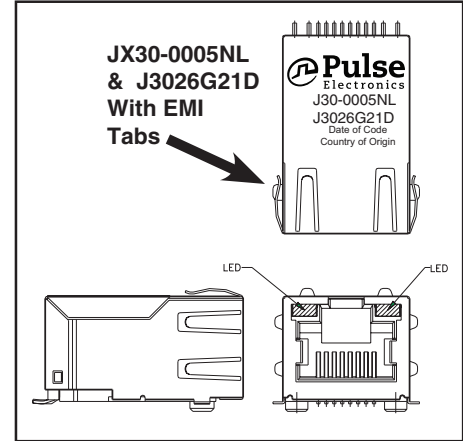
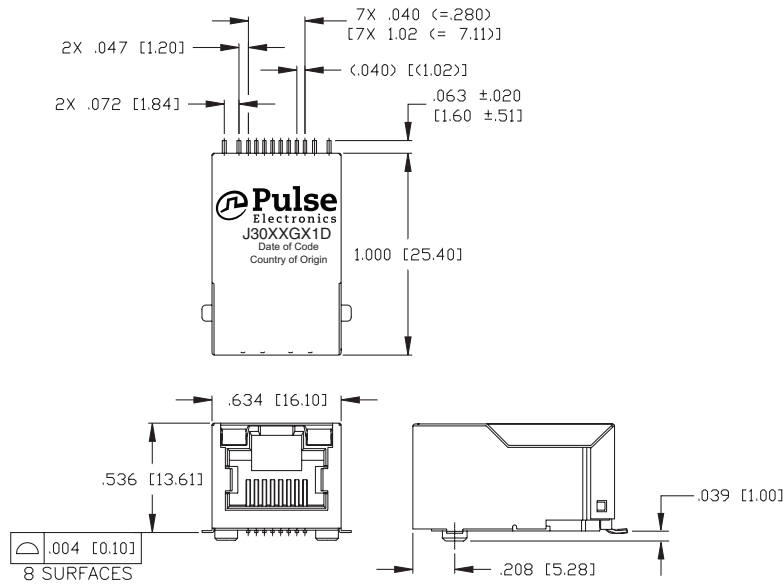
JV Series



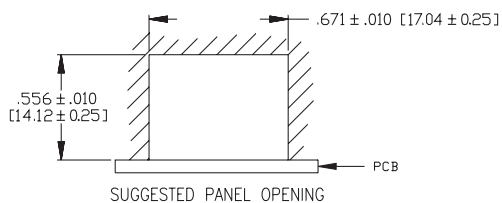
PulseJack™ Surface Mount 1x1

J3 Platform Mechanical

J3 Series



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



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

PulseJack™

Surface Mount 1x1

JOC 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).

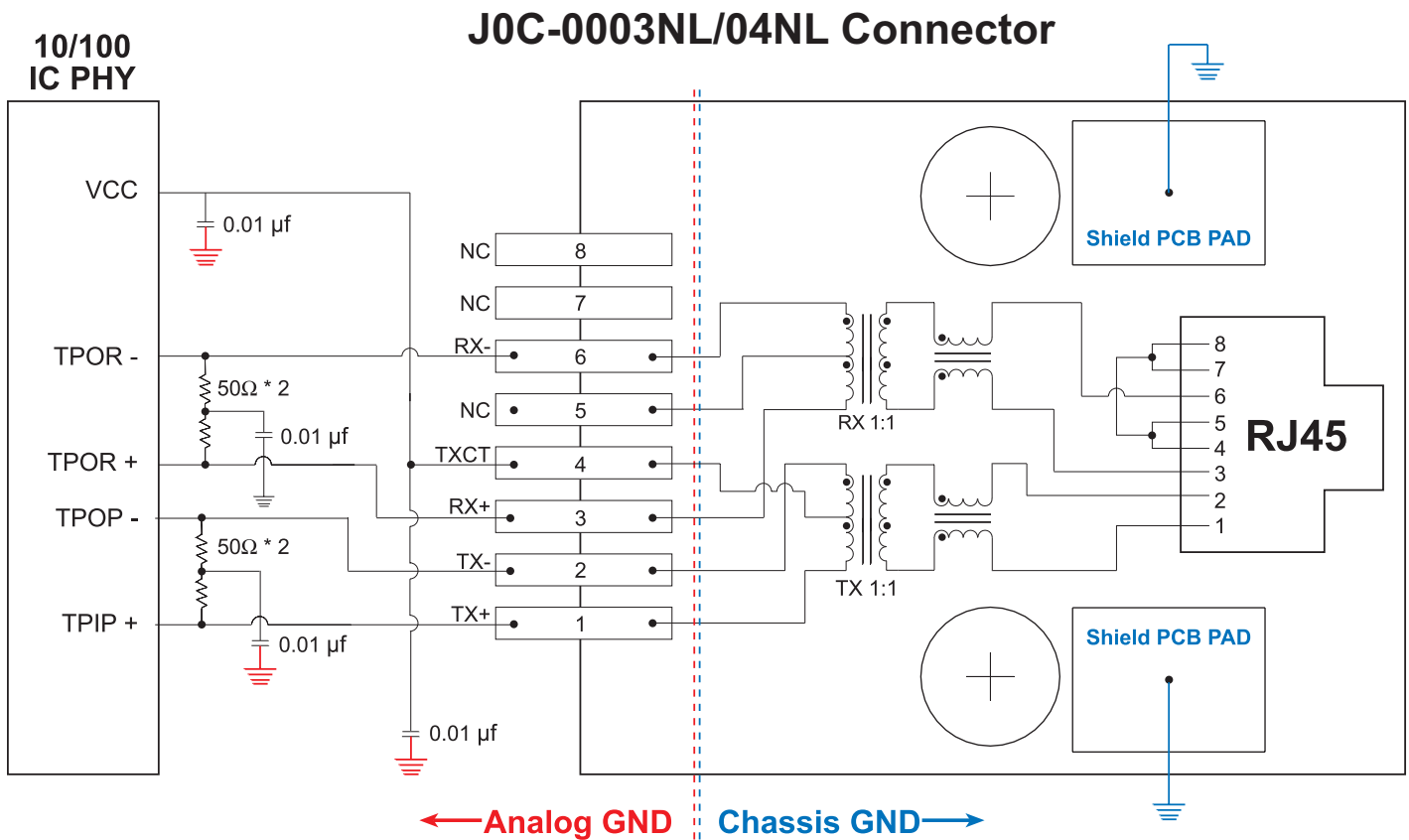
The connectors provide excellent EMI filtering and are suitable for adapter card and multiport applications. Pulse has worked closely with the leading IC manufacturers in providing these 10/100 solutions, thereby assuring compatibility with each transceiver.

The JCO 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 0.10 (0.004”).

Note: Modules are packaged in trays, unless Tape & Reel is specified (ex: JOC-0003NL for Trays and JOC-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.

PulseJack™

Surface Mount 1x1

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).

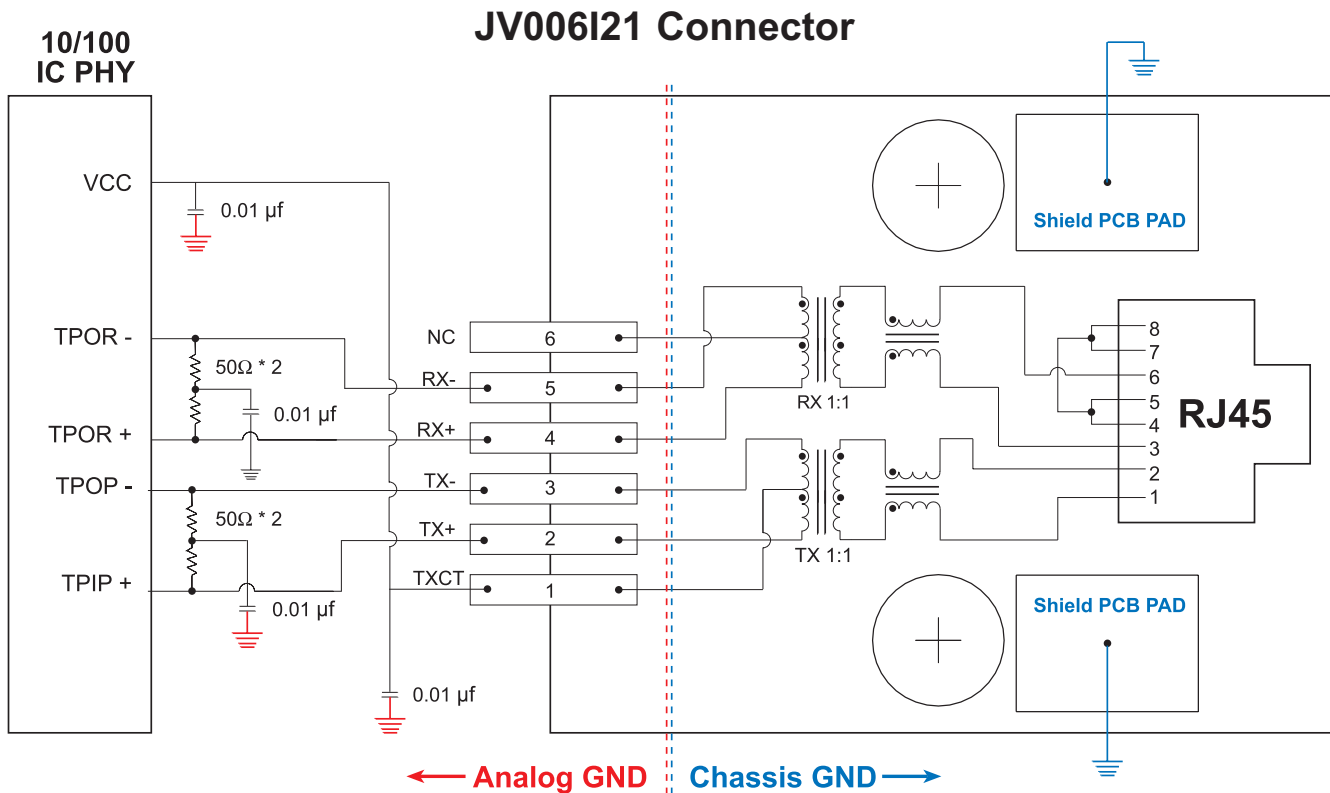
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isolation, wide bandwidth with minimal attenuation and fast rise times to minimize system level jitter.

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Note: Modules are packaged in trays, unless Tape & Reel is specified. Please add the suffix “T” for Tape & Reel orders (ex: JVO006I21T). Add the suffix “NL” for RoHS compliant parts (ex: JVO06I21NL for Trays and JVO06I21NLT for Tape & Reel).



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.

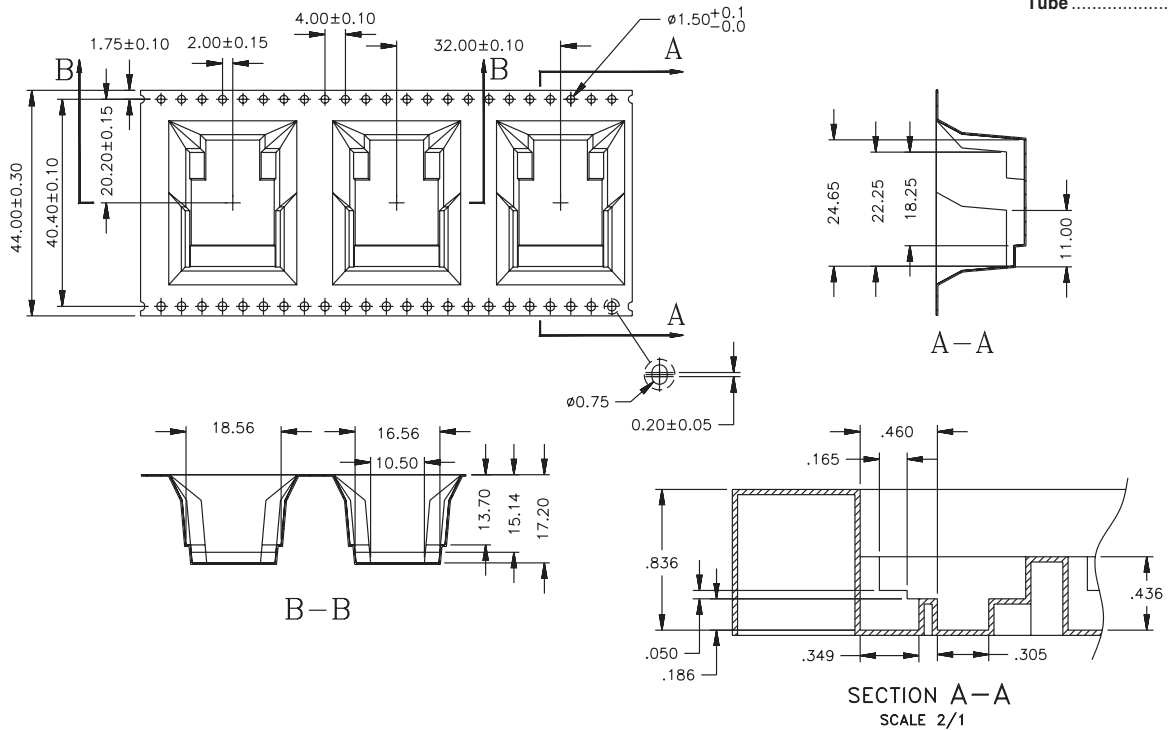
PulseJack™ Surface Mount 1x1

JOC Packaging Specifications

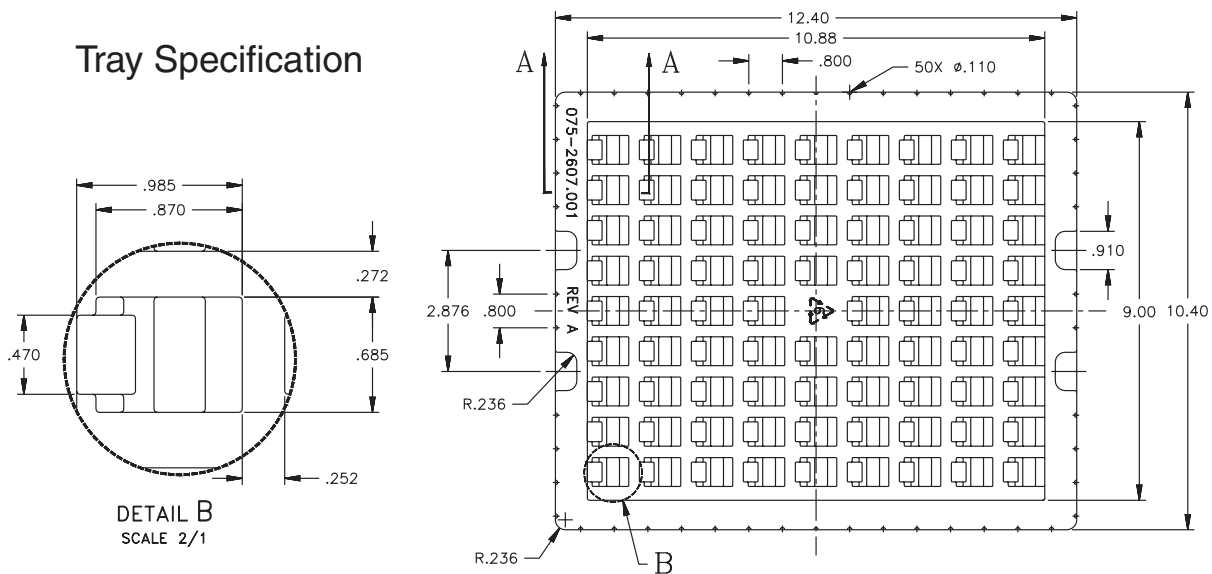
JOC Series

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

Tape and Reel Specification



Tray Specification



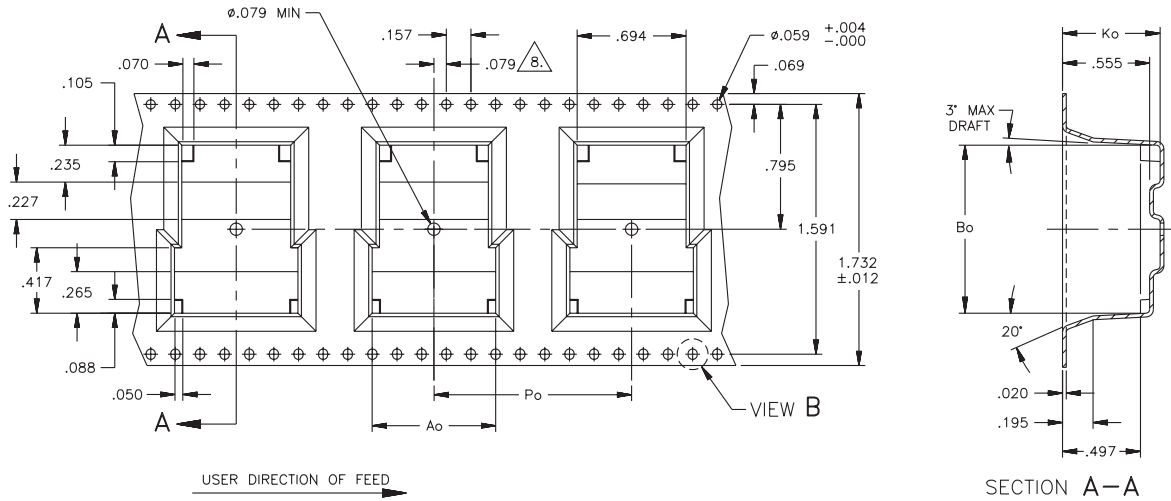
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JV Packaging Specifications

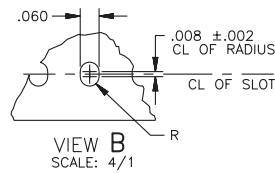
JV Series

Weight6.6 grams
Tape & Reel 150/reel
Tray 45/tray
Tape 44x32mm

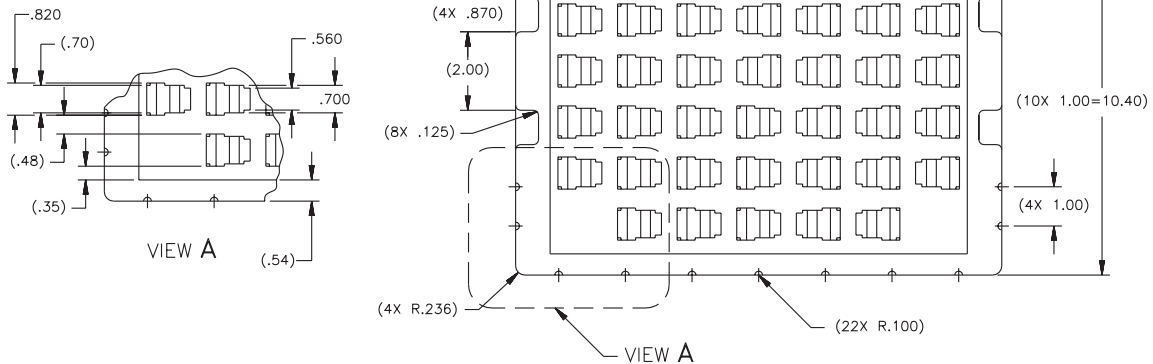
Tape and Reel Specification



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



Tray Specification



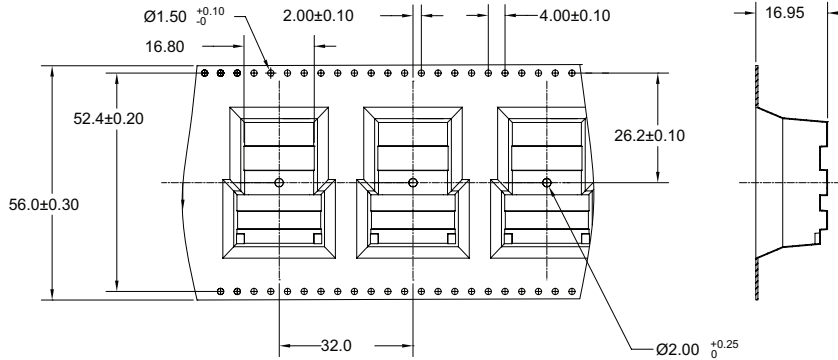
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J3 Packaging Specifications

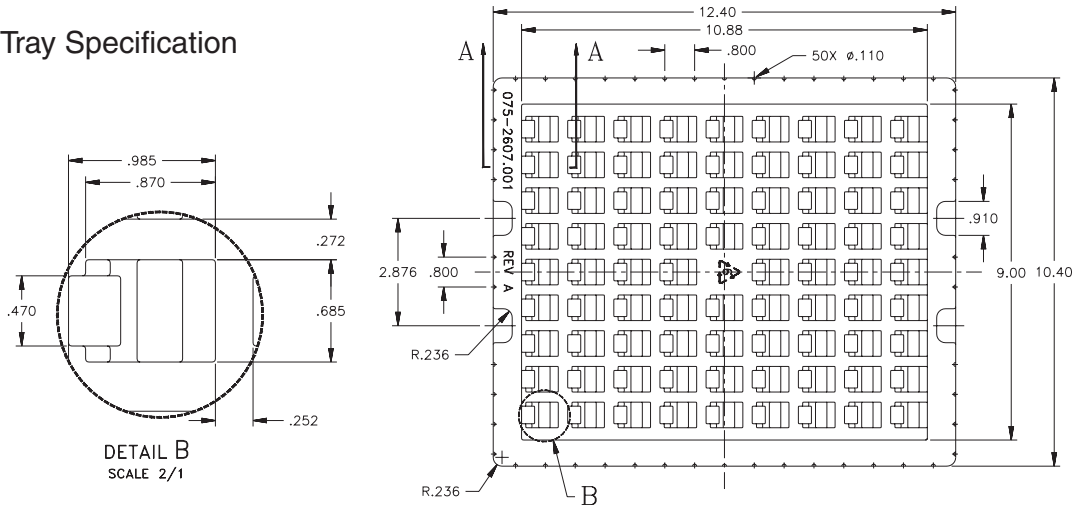
J3 Series

Tape and Reel Specification

Weight.....8.1 grams
Tape & Reel.....75/reel
Tray45/tray
Tape56x32mm



Tray Specification



For More Information:

Americas - prodinfo@networkamericas@pulseelectronics.com | Europe - comms@pulseelectronics.com | Asia - prodinfo@networkapac@pulseelectronics.com

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