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
- J0C 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

<table>
<thead>
<tr>
<th>RoHS Compliant Part No.</th>
<th>TX</th>
<th>RX</th>
<th>Tab Option Up/Down</th>
<th>LEDS1 L/R</th>
<th>BST Circuit</th>
<th>EMI Finger</th>
<th>Insertion Loss (dB MAX)</th>
<th>Return Loss (dB MIN)</th>
<th>Crosstalk (dB MIN)</th>
<th>Common Mode Rejection (dB MIN)</th>
<th>Hipot (Vrms MIN)</th>
<th>Turn Ratios</th>
</tr>
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<tbody>
<tr>
<td>J0C-0003NL</td>
<td>1CT:1</td>
<td>1CT:1</td>
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<td>No</td>
<td>No</td>
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</tbody>
</table>

Notes:
1. LEDs Left/Right: G = green; Y = yellow.
2. Add suffix “T” for Tape & Reel option (e.g. J0C-0004T).
3. Extended Temperature: -40° to 85° C

<table>
<thead>
<tr>
<th>RJ45 Durability Test Rating</th>
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<tbody>
<tr>
<td>Part Number</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>J0C/JV/J3 Series</td>
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</tbody>
</table>
PulseJack™
Surface Mount 1x1

RJ45 Material Specification

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Shield</th>
<th>Finish</th>
<th>Material</th>
<th>Contact</th>
<th>Solder Area</th>
<th>Housing</th>
<th>MSL Rating</th>
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</thead>
<tbody>
<tr>
<td>J0C/JV/J3 Series</td>
<td>Brass</td>
<td>20-40µ inches thick nickel over Brass</td>
<td>Phosphor Bronze</td>
<td>(X)µ inches gold over 30-80µ inches nickel</td>
<td>Tin matte finish</td>
<td>High Temp. Thermoplastic</td>
<td>UL 94 V-0</td>
</tr>
</tbody>
</table>

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 J0C platform.
4. NL parts are tin matte finish over nickel.

JOC Platform Schematics

JOC-0003NL/JOC-0004NL

JOC-0005NL/JOC-0006NL

NOTE: Connect GND to PCB ground.

SUGGESTED FOOTPRINT (COMPONENT SIDE SHOWN)
DIMENSIONAL TOLERANCE: (UNLESS OTHERWISE SPECIFIED)
XXX ±.003 [X.XX ±.08]
PulseJack™
Surface Mount 1x1

JV Platform Schematics

**JV006**

```
<table>
<thead>
<tr>
<th>1</th>
<th>TX+</th>
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<tbody>
<tr>
<td>2</td>
<td>TX-</td>
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PCB SIDE TO PHY

1:1 TRANSMIT

```

**JV011**

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PCB SIDE TO PHY

1:1 TRANSMIT

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**JV026**

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PCB SIDE TO PHY

1:1 RECEPT

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PCB SIDE TO PHY

1:1 RECEIVE

```

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<tbody>
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<td>RX-</td>
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PCB SIDE TO PHY

CABLE

0.001µ

```

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<th>4</th>
<th>RX+</th>
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<tbody>
<tr>
<td>5</td>
<td>RX-</td>
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PCB SIDE TO PHY

CABLE

0.001µ

```

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<th>RX+</th>
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</thead>
<tbody>
<tr>
<td>8</td>
<td>RX-</td>
</tr>
</tbody>
</table>

PCB SIDE TO PHY

CABLE

0.001µ

```

C1 SHIELD

```

C1 SHIELD
PulseJack™
Surface Mount 1x1

J3 Platform Schematics

J3011

J3026

JX30-0005NL

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PulseJack™
Surface Mount 1x1

JOC Platform Mechanicals

JOC-0004NL/06NL

EMI Fingers

RECOMMENDED PANEL CUTOUT

0.010 TOP OF PCB TO BOTTOM OF OPENING

SUGGESTED FOOTPRINT (COMPONENT SIDE SHOWN)

DIMENSIONAL TOLERANCE: (UNLESS OTHERWISE SPECIFIED)

.xxx ±.003 (x.xxx ±.008)
PulseJack™
Surface Mount 1x1

JV Platform Mechanicals

Dimensions: Inches
mm
Unless otherwise specified, all tolerances are ± .010
.25

Suggested PCB board layout viewed from component side
PCB layout dimensions to be ±.005 unless otherwise specified

Suggested panel opening
PulseJack™
Surface Mount 1x1

**J3 Platform Mechanical**

**J3 Series**

**Dimensions:**
- **Inches mm**
- **Unless otherwise specified, all tolerances are ± 0.010 ± 0.25**

**Suggested PC Board Layout Viewed from Component Side**

PCB layout dimensions to be ±0.003 [±0.08] unless otherwise specified.

**JX30-0005NL & J3026G21D With EMI Tabs**

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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 JOC 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).

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).

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 350\(\mu\)H. 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. Please add the suffix “T” for Tape & Reel orders (ex: JVO006121T). Add the suffix “NL” for RoHS compliant parts (ex: JVO006I21NL for Trays and JVO006I21NLT for Tape & Reel).

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**PCB Layout Recommendations:**

1. For maximum EMI suppression (electromagnetic interference) place the decoupling capacitors adjacent to VCC and 50\(\Omega\) 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.
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Surface Mount 1x1

JOC Packaging Specifications

Tape and Reel Specification

Tray Specification

Weight .................. 7.07 grams
Tape & Reel ............. 90/reel
Tray ..................... 80/tray
Tape .................... 44x32mm
Tube ................... 25/tube
PulseJack™
Surface Mount 1x1

JV Packaging Specifications

Tape and Reel Specification

Tray Specification

Weight: 6.6 grams
Tape & Reel: 150/reel
Tray: 45/tray
Tape: 44x32mm
PulseJack™
Surface Mount 1x1

J3 Packaging Specifications

Tape and Reel Specification

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

Tray Specification

For More Information:
Americas - prodinfonetworkamericas@pulseelectronics.com | Europe - comms-Apps-Europe@pulseelectronics.com | Asia - prodinfonetworkapac@pulseelectronics.com

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