

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-5 peak reflow temperature rating 235°C
- RoHS-6 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-5 ³ Compliant Part No.	RoHS-6 ⁴ Compliant Part No.	Turns Ratios		Tab Option Up/Down	LEDs ¹ L/R	BST Circuit	EMI Finger	Insertion Loss TX/RX (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	
JOC-0003	JOC-0003NL	1CT:1	1CT:1	Down	No	No	No	-1.0	-18	-14	-10	-35	-35	-30	-20	-20	1500	
JOC-0004	JOC-0004NL	1CT:1	1CT:1	Down	No	No	Yes	-1.0	-18	-14	-10	-35	-35	-30	-20	-20	1500	
JOC-0005	JOC-0005NL	1CT:1	1CT:1	Down	No	Yes	No	-1.0	-18	-14	-10	-35	-35	-30	-20	-20	1500	
JOC-0006	JOC-0006NL	1CT:1	1CT:1	Down	No	Yes	Yes	-1.0	-18	-14	-10	-35	-35	-30	-20	-20	1500	
JV006I21	JV006I21NL	1CT:1	1CT:1	Down	No	No	Yes	-1.0	-20	-16	-12	-40	-35	-30	-30	-20	1500	
JV011I21	JV011I21NL	1CT:1	1CT:1	Down	No	Yes	Yes	-1.0	-20	-16	-12	-40	-35	-30	-30	-20	1500	
JV026I21	JV026I21NL	1CTS:1	1CT:1	Down	No	Yes	Yes	-1.0	-20	-16	-12	-40	-35	-30	-30	-20	1500	
J3006G21D	J3006G21DNL	1CT:1	1CT:1	Up	G/Y	No	Yes	-1.0	-20	-16	-12	-40	-35	-30	-30	-20	1500	
J3011G21D	J3011G21DNL	1CT:1	1CT:1	Up	G/Y	Yes	Yes	-1.0	-20	-16	-12	-40	-35	-30	-30	-20	1500	
J3018G21K	—	1CTS:1.414	1CT:1	Up	G/G	Yes	Yes	-1.0	-20	-16	-11.5	-40	-35	-30	-30	-20	1500	
J3026G01D	J3026G01DNL	1CTS:1	1CT:1	Up	G/Y	Yes	No	-1.0	-20	-16	-12	-40	-35	-30	-30	-20	1500	
J3026G21D	J3026G21DNL	1CTS:1	1CT:1	Up	G/Y	Yes	Yes	-1.0	-20	-16	-12	-40	-35	-30	-30	-20	1500	
—	JX30-0005NL ⁵	1CT:1	1CT:1	Up	G/Y	Yes	Yes	-1.0	-20	-16	-12	-40	-35	-30	-30	-20	1500	

NOTES:

- LEDs Left/Right: **G** = green; **Y** = yellow.
- Add suffix "T" for Tape & Reel option (e.g. JOC-0004T).
- RoHS-5 - Product does not contain 5 out of the 6 banned substances specified in the RoHS directive. Product contains lead in applications considered as solders.
- RoHS-6 - Product does not contain 5 out of the 6 banned substances specified in the RoHS directive. Some internal connections may contain lead in high temperature solder (solder alloys containing more than 85% lead).
- 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

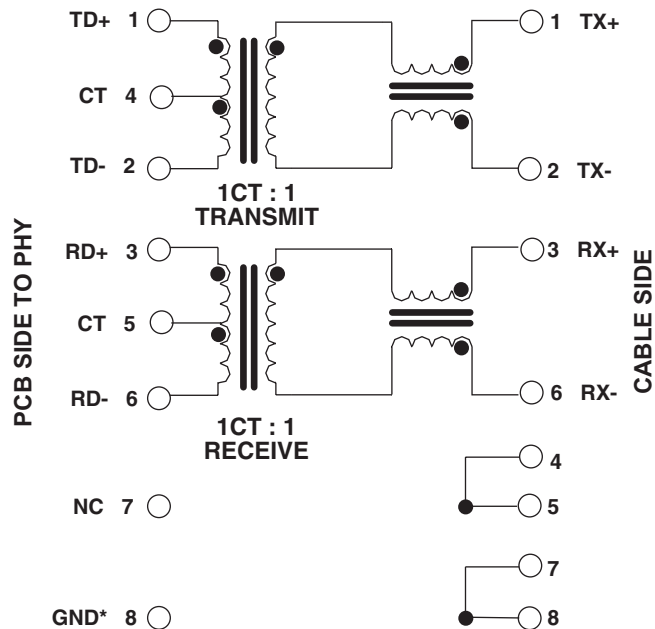
Part Number	Shield		Contact			Housing		MSL ² Rating
	Material	Finish	Material	Plating Area ³	Solder Area ⁵	Material	Specification	
JOC/JV/J3 Series	Brass	20-40μ inches thick nickel over Brass	Phosphor Bronze	(X)μ inches gold over 30-80μ inches nickel	75-300μ inches tin-lead over 30-80μ inches nickel	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 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 54643211/2 • China 86 769 85538070 • Taiwan 886 3 4641811

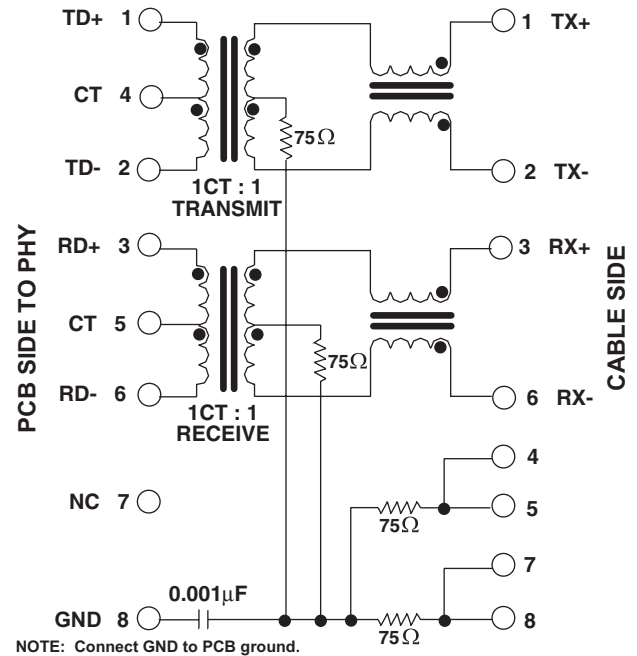
J0C Platform Schematics

J0C-0003/4

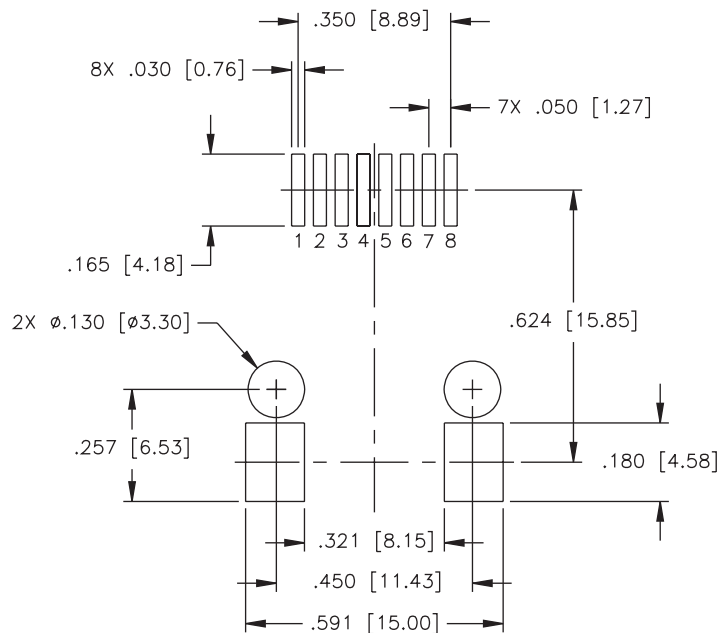


*Connecting pin 8 to Ground makes J00-0042/46/64/66 footprint compatible to J00-0014/45/61/65.

J0C-0005/6



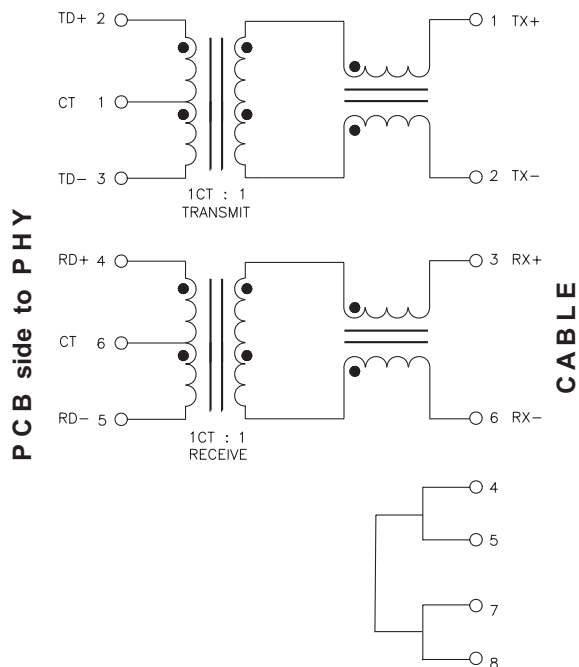
NOTE: Connect GND to PCB ground.



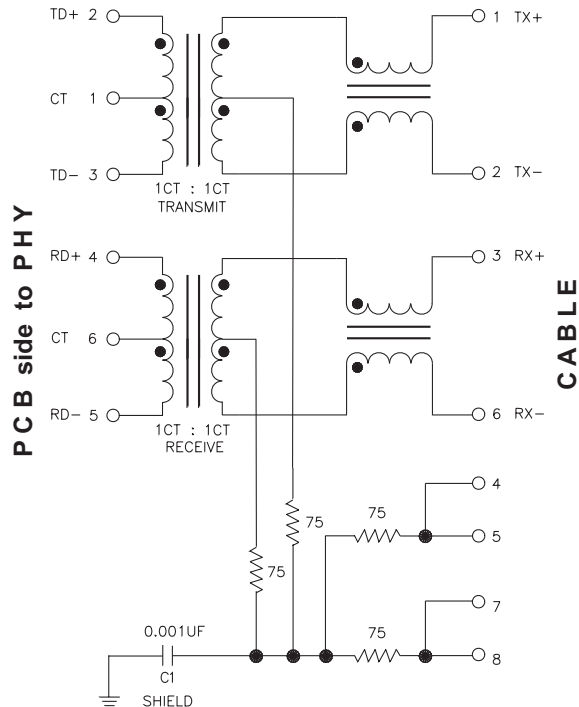
SUGGESTED FOOTPRINT (COMPONENT SIDE SHOWN)
 DIMENSIONAL TOLERANCE: (UNLESS OTHERWISE SPECIFIED)
 .XXX ±.003 [X.XX ±0.08]

JV Platform Schematics

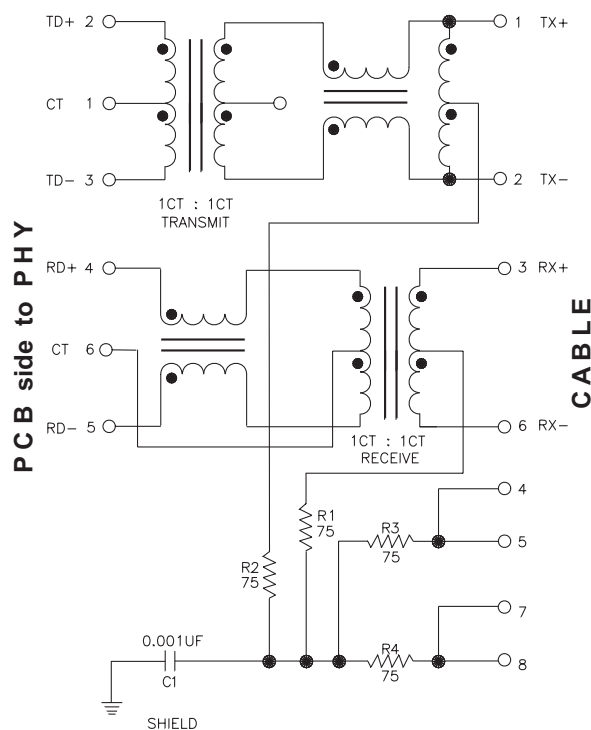
JV006



JV011

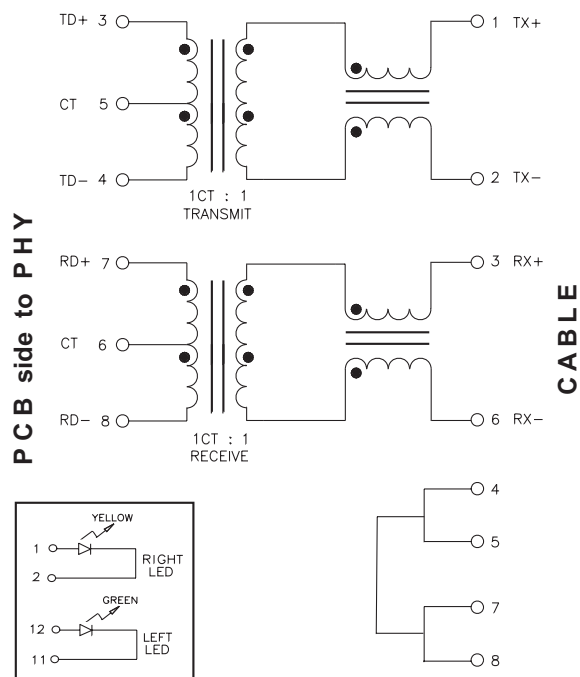


JV026

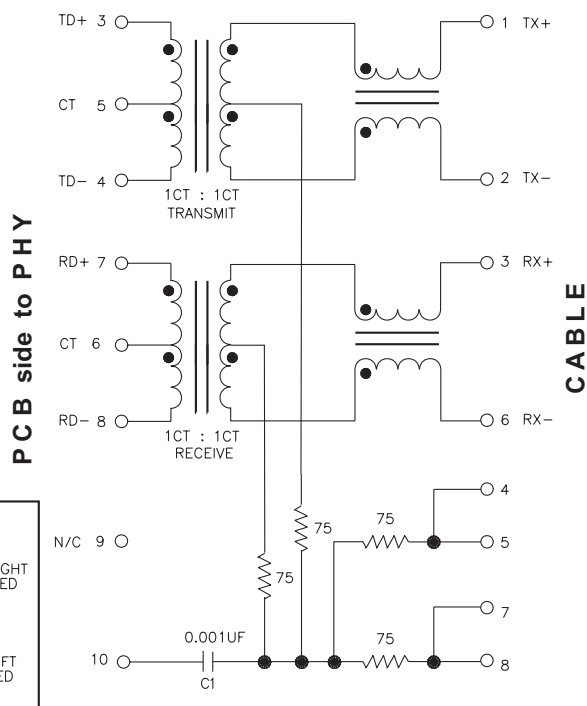


J3 Platform Schematics

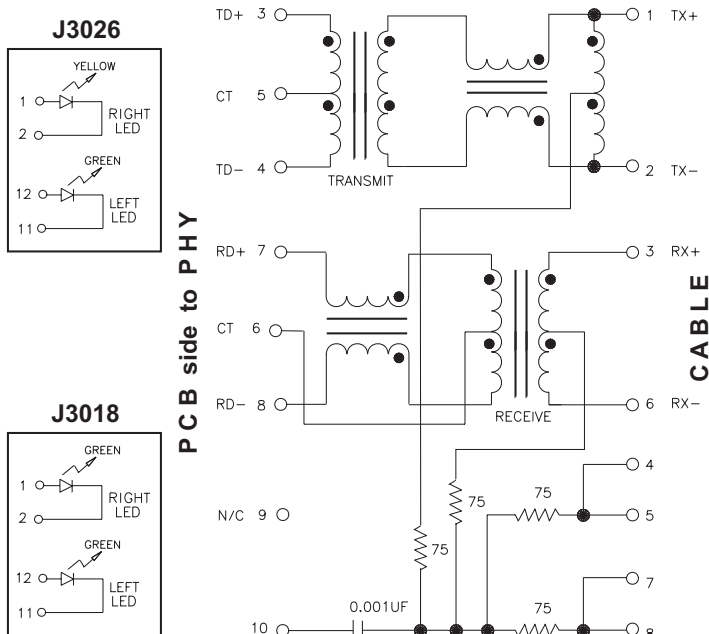
J3006



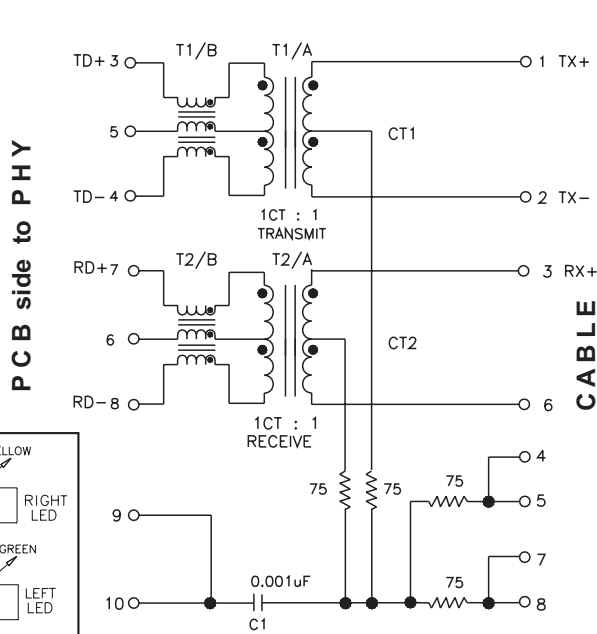
J3011



J3018/J3026

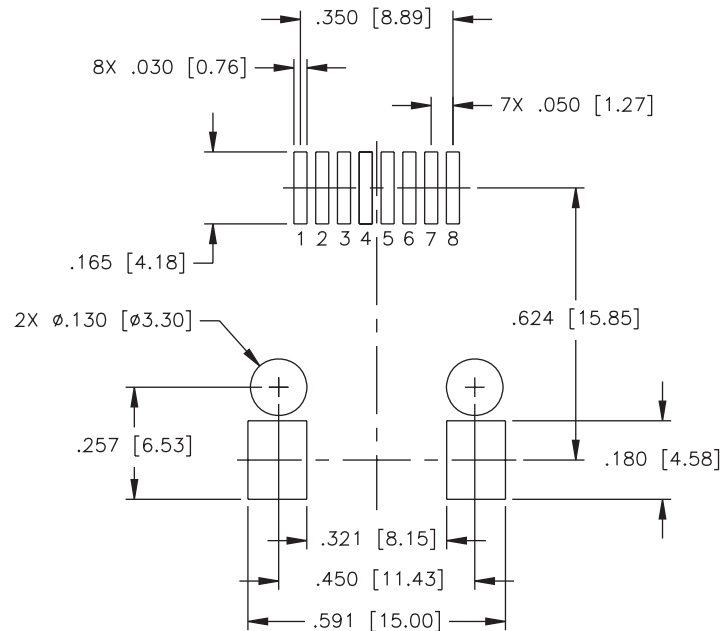
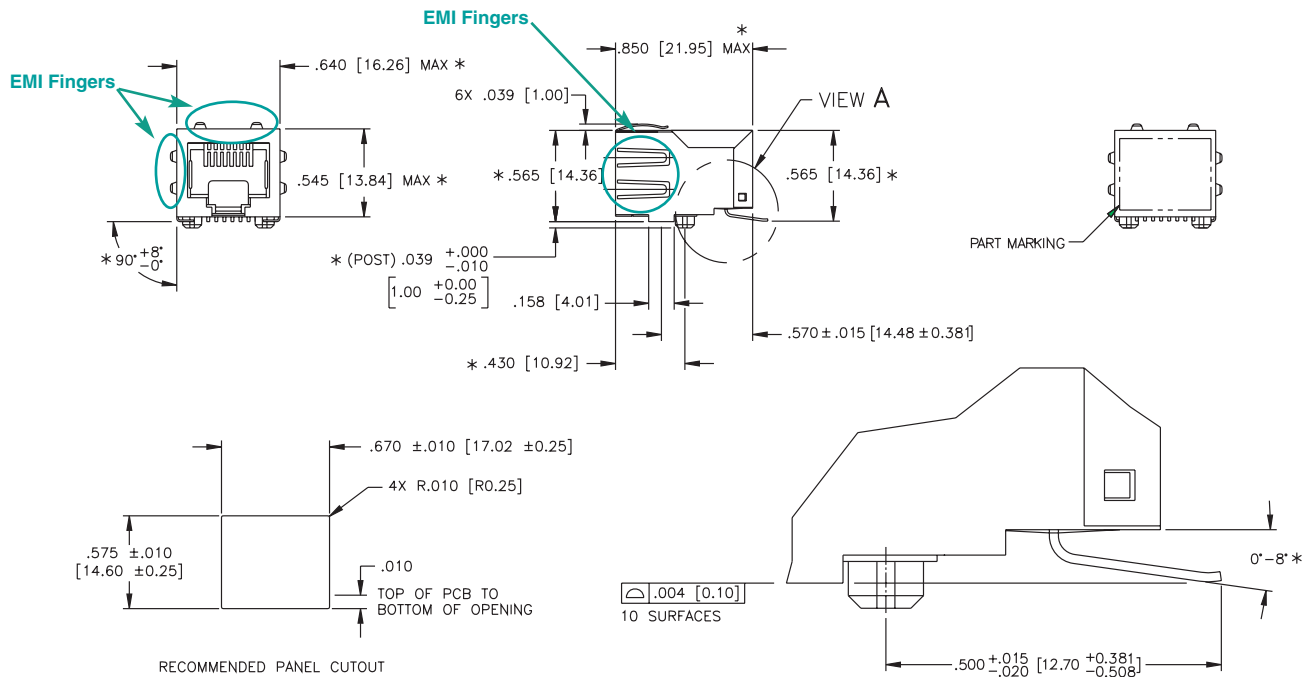


JX30-0005NL



J0C Platform Mechanicals

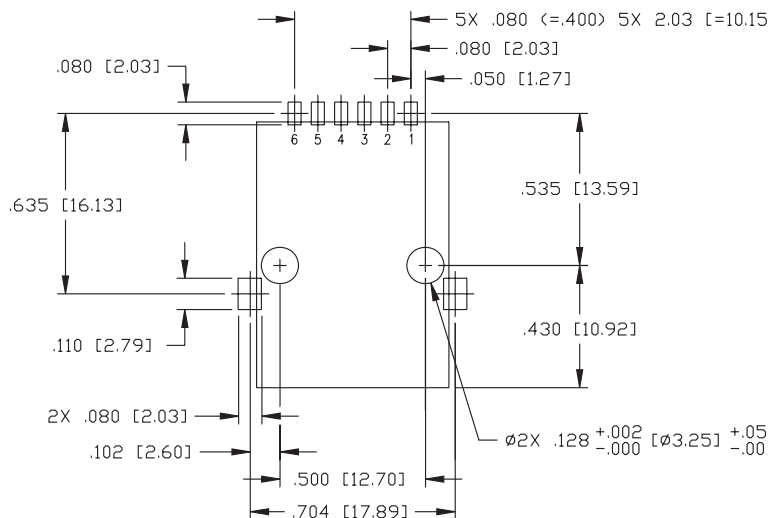
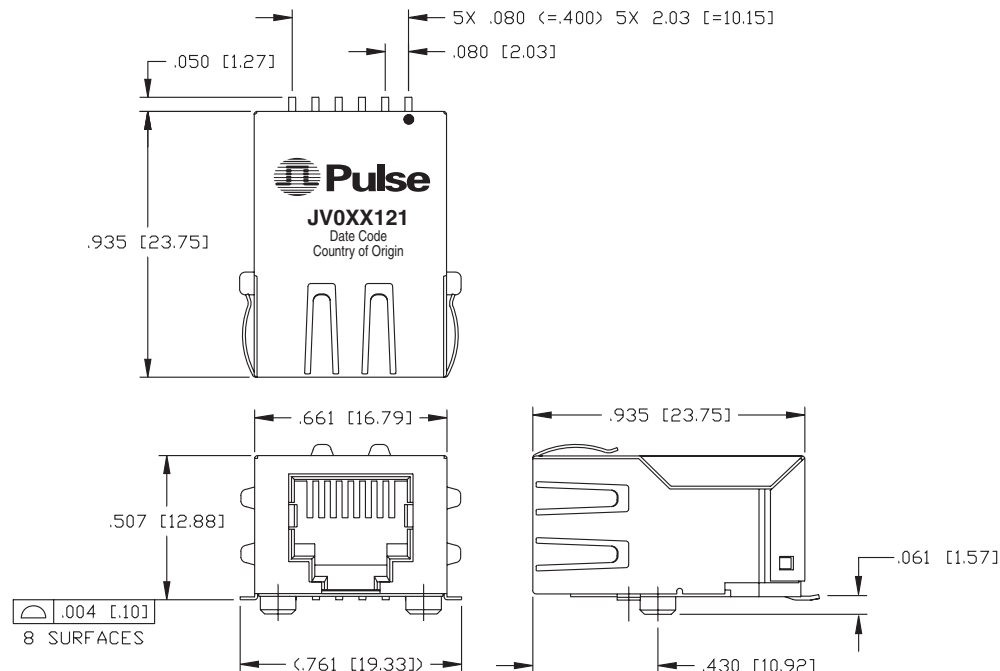
J0C-0004/6 (J0C-0003/5 - Same platform without EMI Fingers)



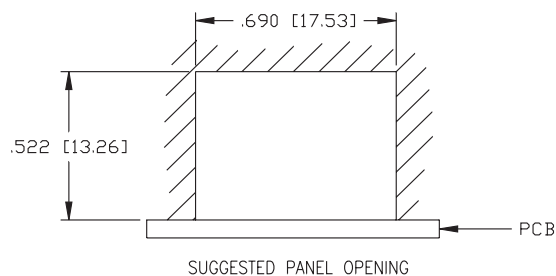
SUGGESTED FOOTPRINT (COMPONENT SIDE SHOWN)
 DIMENSIONAL TOLERANCE: (UNLESS OTHERWISE SPECIFIED)
 .XXX $\pm .003$ [X.XX ± 0.08]

JV Platform Mechanicals

JV Series



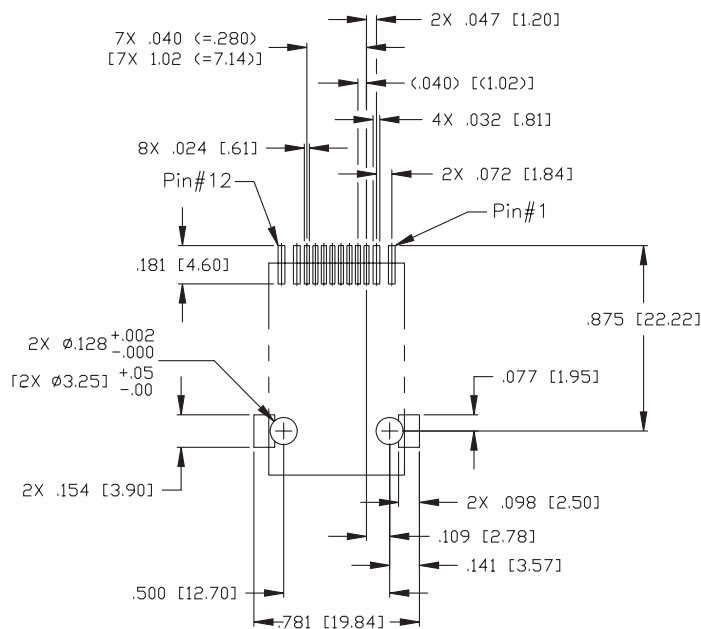
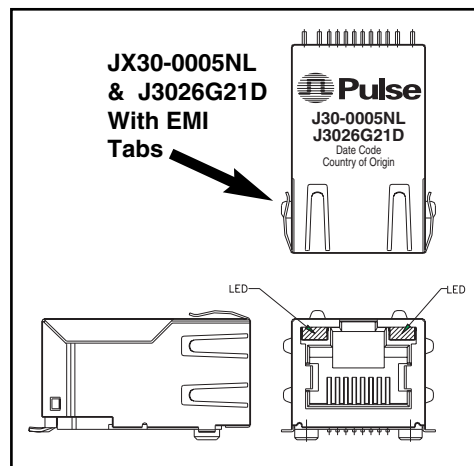
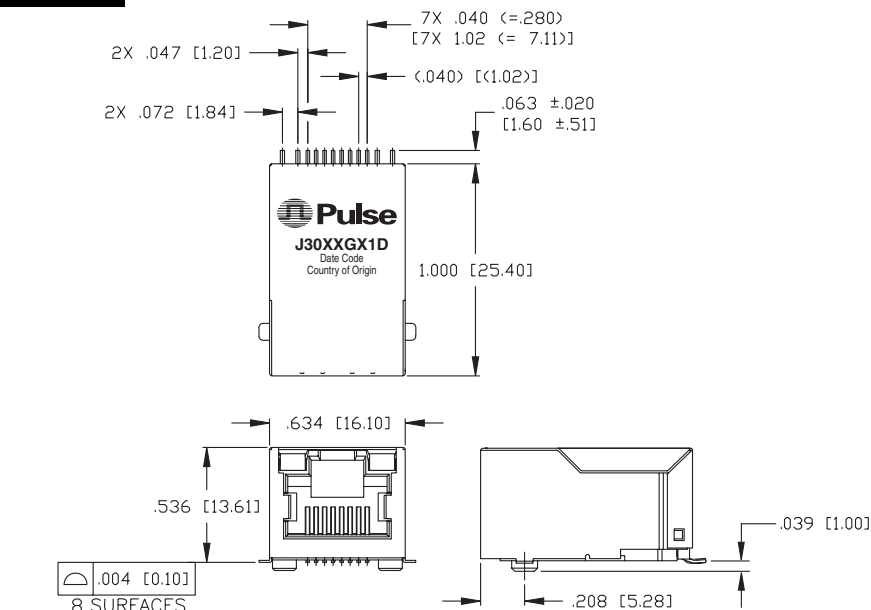
SUGGESTED PC BOARD LAYOUT VIEWED FROM COMPONENT SIDE
PCB LAYOUT DIMENSIONS TO BE $\pm .003$ UNLESS OTHERWISE SPECIFIED



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

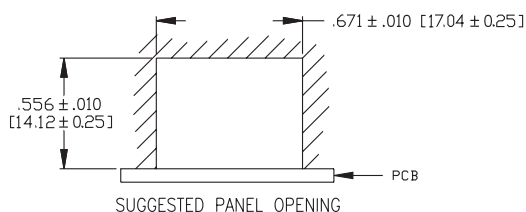
J3 Platform Mechanical

J3 Series



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

SUGGESTED PC BOARD LAYOUT VIEWED FROM COMPONENT SIDE
 PCB LAYOUT DIMENSIONS TO BE ±.003 [±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).

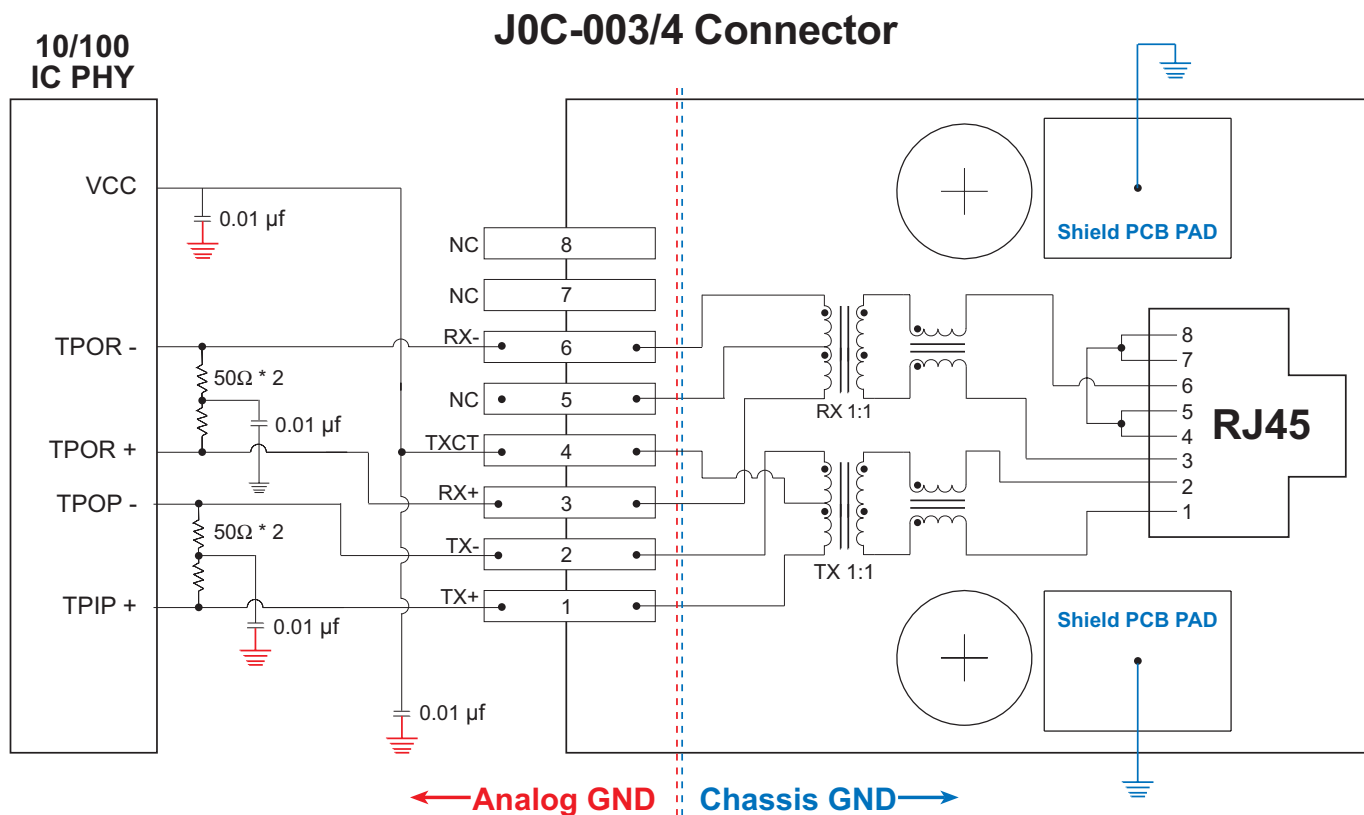
The connectors provide excellent EMI filtering and are suitable for adapter card and multiport applications. Pulse has worked closely with the leading IC manufacturers in providing these 10/100 solutions, thereby assuring compatibility with each transceiver.

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. Please add the suffix "T" for Tape & Reel orders (ex: J0C-0003T). Add the suffix "NL" for RoHS compliant parts (ex: J0C-0003NL for Trays and J0C-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.

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).

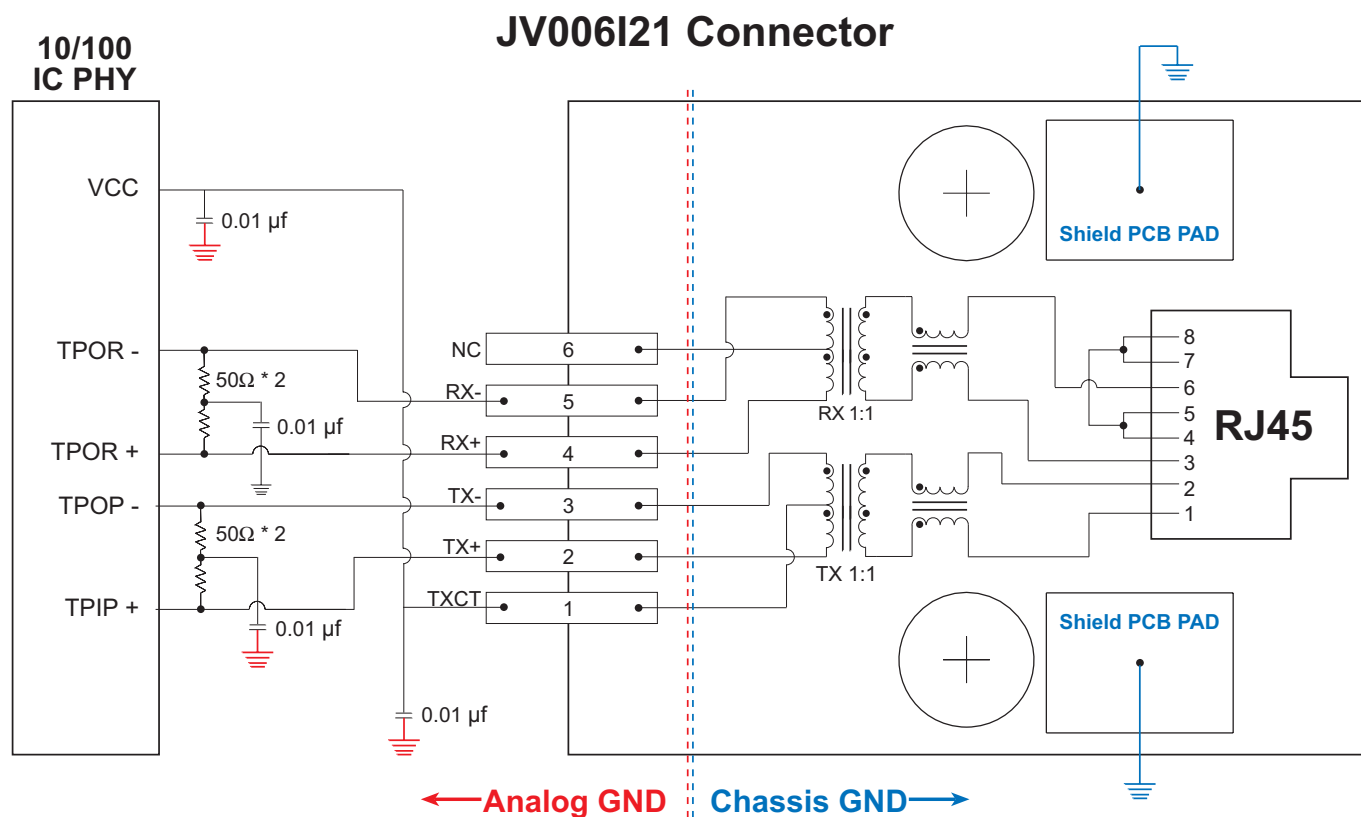
The connectors provide excellent EMI filtering and are suitable for adapter card and multiport applications. Pulse has worked closely with the leading IC manufacturers in providing these 10/100 solutions, thereby assuring compatibility with each transceiver.

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:

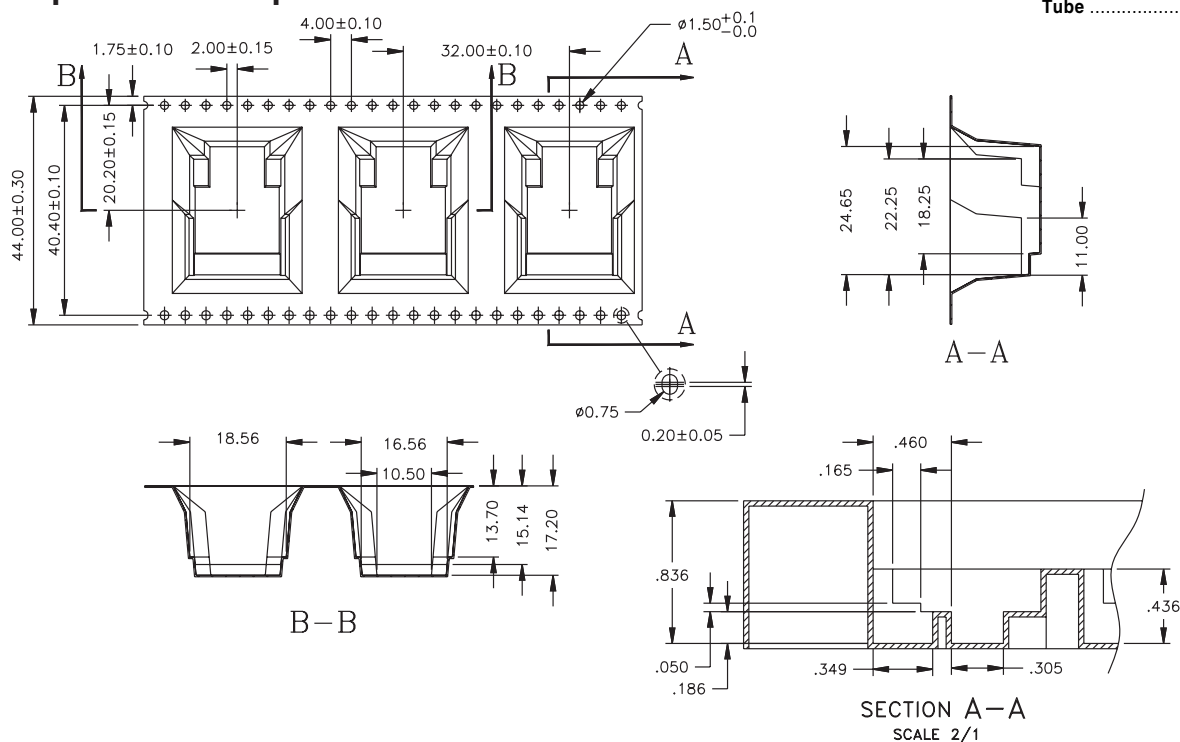
1. For maximum EMI suppression (electromagnetic interference) place the decoupling capacitors adjacent to Vcc and 50Ω connections.
2. Connections to ground should be as short as possible.
3. Connections between the 10/100 IC and the SMT connector should be direct (ideally no change in direction) and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

J0C Packaging Specifications

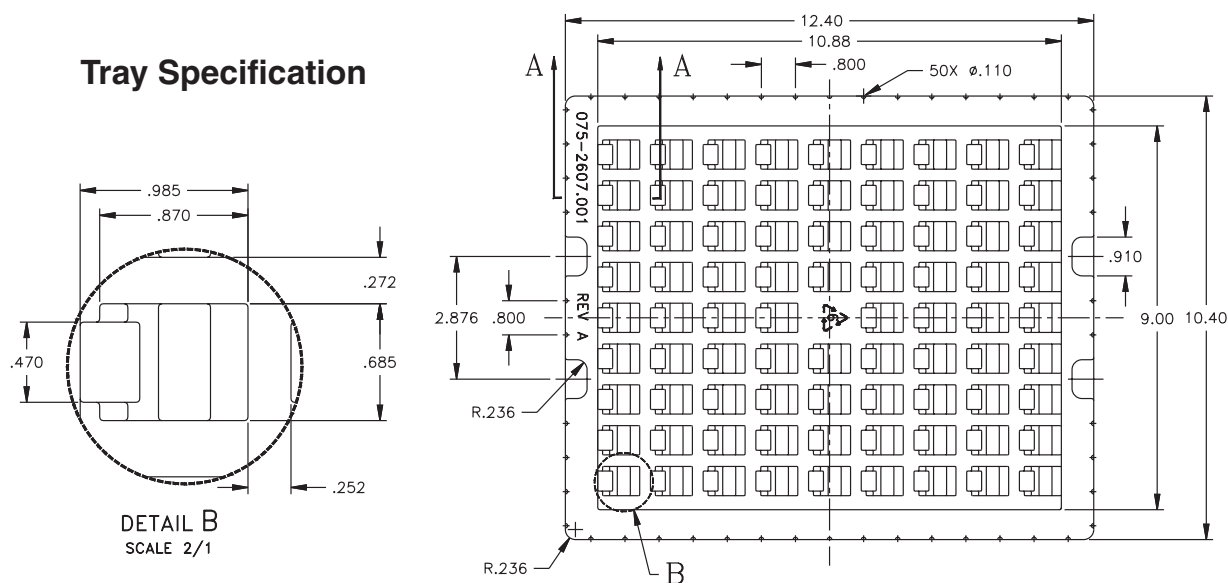
J0C Series

Weight.....7.07 grams
Tape & Reel90/reel
Tray80/tray
Tape44x32mm
Tube25/tube

Tape and Reel Specification



Tray Specification

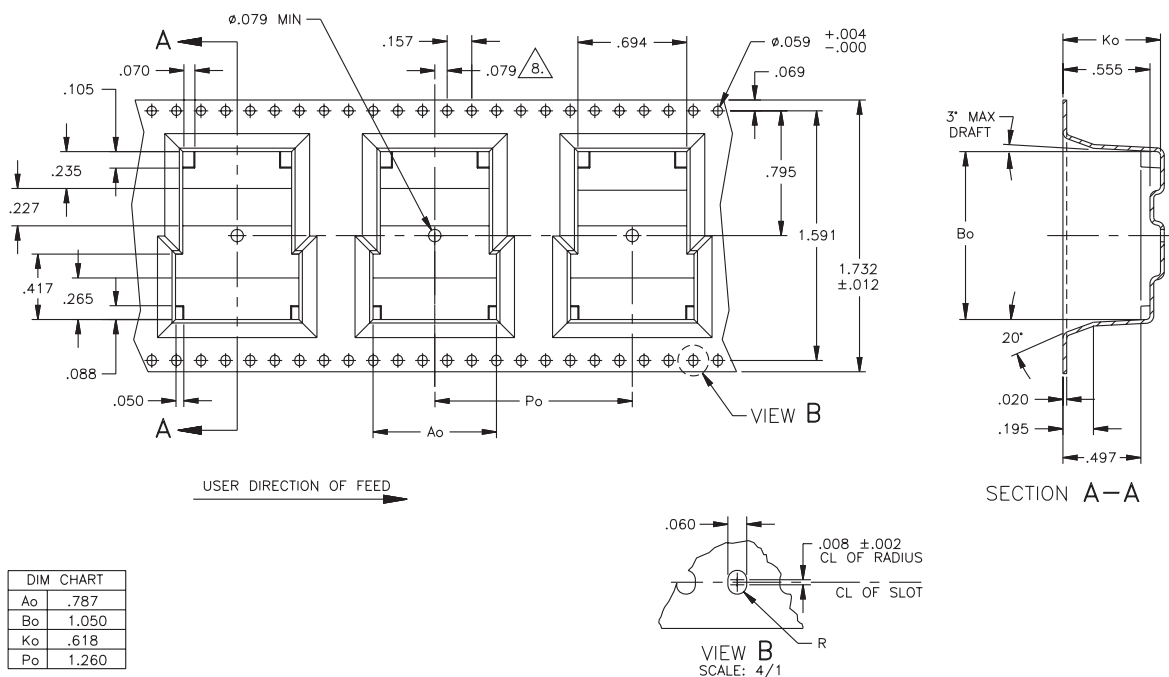


JV Packaging Specifications

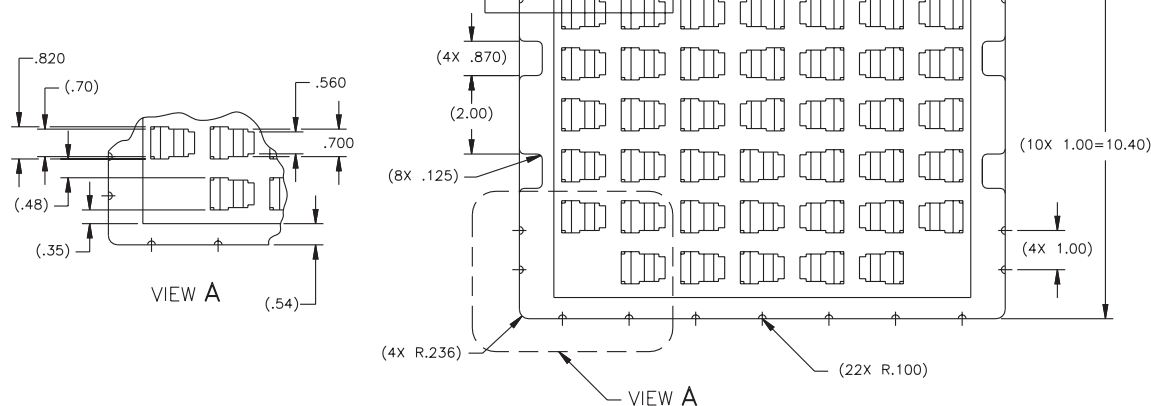
JV Series

Weight6.6 grams
Tape & Reel150/reel
Tray45/tray
Tape44x32mm

Tape and Reel Specification



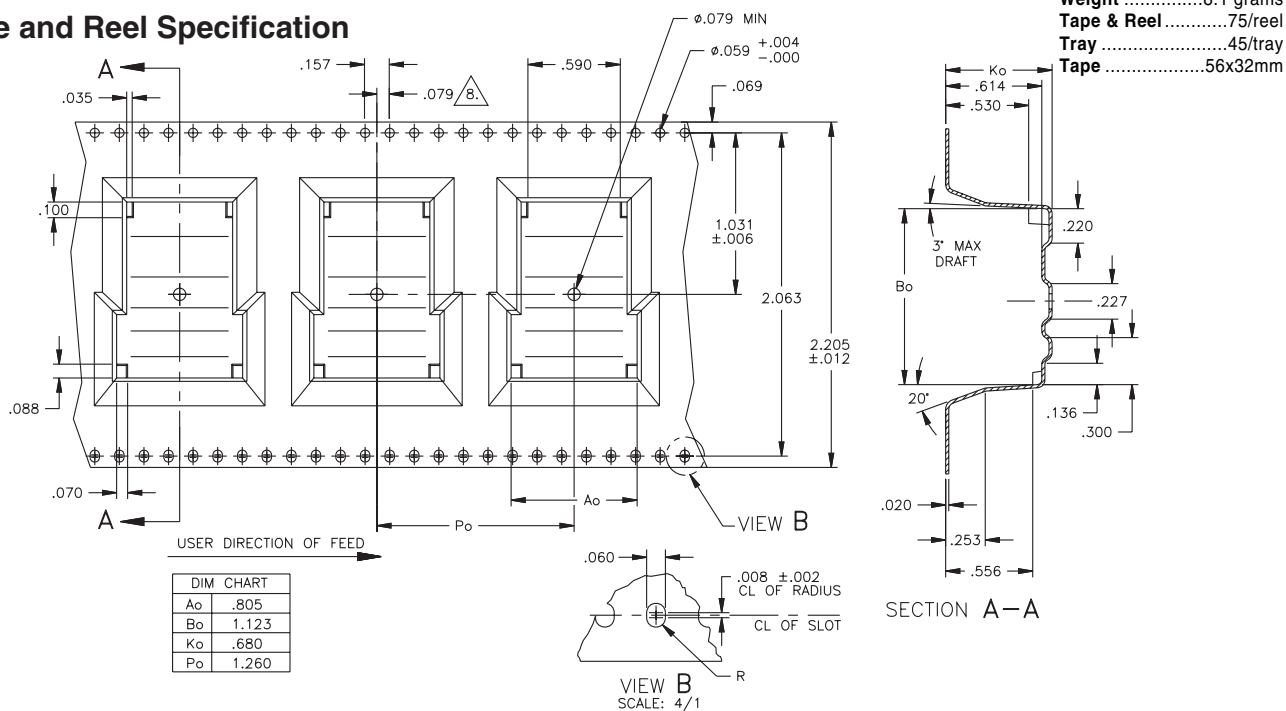
Tray Specification



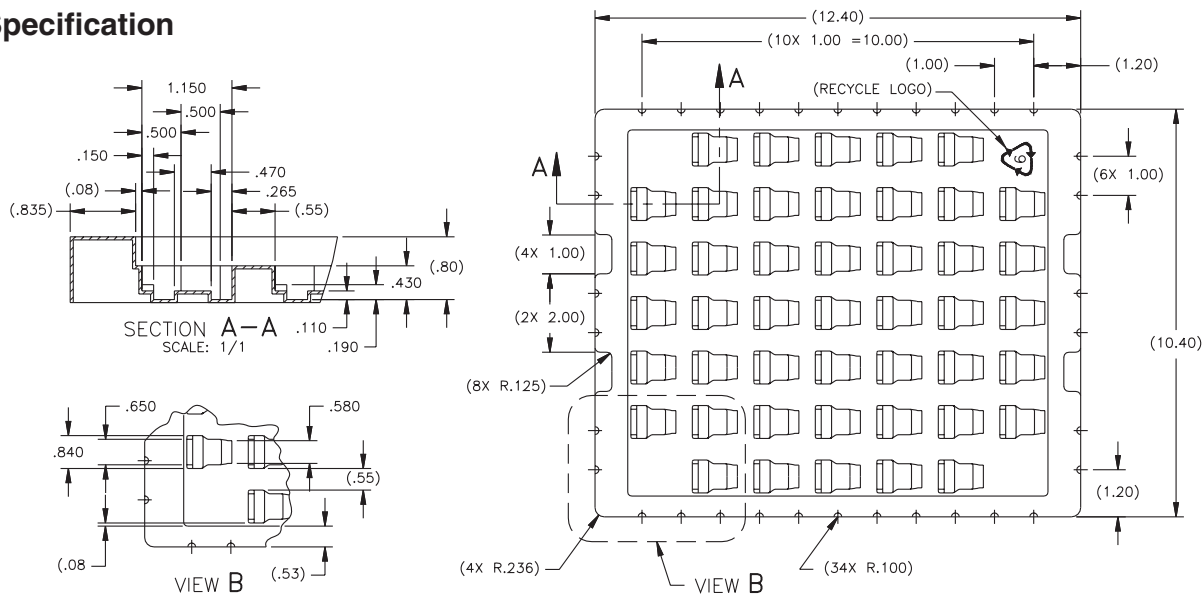
J3 Packaging Specifications

J3 Series

Tape and Reel Specification



Tray Specification



For More Information:

Pulse Worldwide Headquarters

12220 World Trade Dr.
San Diego, CA 92128
U.S.A.
www.pulseeng.com

Tel: 858 674 8100
Fax: 858 674 8262

Pulse Europe

Einsteinstrasse 1
D-71083 Herrenberg
Germany

Tel: 49 7032 7806 0
Fax: 49 7032 7806 12

Pulse China Headquarters

B402, Shenzhen
Tech-Innovation International
Tenth Kejinan Rd.
High-Tech Industrial Park
Nanshan District, Shenzhen
China

Tel: 86 755 33966678
Fax: 86 755 33966700

Pulse North China

Room 1503
XinYin Building
No. 888 YiShan Rd.
Shanghai 200233
China

Tel: 86 21 54643211/2
Fax: 86 21 54643210

Pulse South Asia

150 Kampong Ampat
#07-01/02
KA Centre
Singapore 368324

Tel: 65 6287 8998
Fax: 65 6280 0080

Pulse North Asia

No. 26
Kao Ching Rd.
Yang Mei Chen
Tao Yuan Hsien
Taiwan, R. O. C.

Tel: 886 3 4641811
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, 2007. Pulse Engineering, Inc. All rights reserved.