



**THE DATASHEET OF  
JP006821U**



# PULSEJACK™

## 1X1 Tab-UP RJ45

### Description:

10/100 Base-TX RJ45 1X1 Tab-UP with LEDs 8-pin (J1 series) and 6-pin (JP series) integrated magnetics connector (ICM), designed to support applications, such as SOHO (ADSL modems), LAN-on-Motherboard (LOM), Hub and Switches.



### Features and Benefits:

- 1X1 Tab-UP RJ45 with internal magnetics
- 8 or 6-pin signal pin versions available
- Available with LEDs
- Suitable for CAT 5 & 6 Fast Ethernet Cable or better UTP
- Internal magnetics are 100% electrically tested for HI-POT and functionality

### Electrical Performance Summary:

- Internal magnetics options available
- Meets or exceeds IEEE 802.3 standard for 100Base-T
- 350 µH minimum OCL with 8 mA bias current
- High performance for maximum EMI suppression
- Minimum 1500 Vrms isolation per IEEE 802.3 requirement

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

Part Number	Turns <sup>1,2</sup> Ratios		EMI <sup>5</sup> Fingers	LEDs <sup>3</sup> L/R	Insertion Loss (dB TYP)	Return Loss (dB TYP) 100 Ω ±15 Ω					Crosstalk (dB TYP)			Common Mode Rejection (dB TYP)		Hipot (Vrms)
	TX	RX				L/R	1-65 MHz	1-10 MHz	10-30 MHz	30-60 MHz	60-80 MHz	1-30 MHz	30-60 MHz	60-100 MHz	1-50 MHz	
J1006F01P	1CT:1	1CT:1	No	G/Y	-1.0	-20	-16	-12	-10	-40	-35	-30	-30	-20	1500	
J1006F21	1CT:1	1CT:1	YES	NONE	-1.0	-20	-16	-12	-10	-40	-35	-30	-30	-20	1500	
J1011F01P	1CT:1	1CT:1	No	G/Y	-1.0	-20	-16	-12	-10	-40	-35	-30	-30	-20	1500	
J1011F21P	1CT:1	1CT:1	YES	G/Y	-1.0	-20	-16	-12	-10	-40	-35	-30	-30	-20	1500	
J1012F01C	1CT:1	1CT:1	No	Y/G	-1.0	-20	-16	-12	-10	-40	-35	-30	-30	-20	1500	
J1012F21C	1CT:1	1CT:1	YES	Y/G	-1.0	-20	-16	-12	-10	-40	-35	-30	-30	-20	1500	
J1012F21K	1CT:1	1CT:1	YES	G/G	-1.0	-20	-16	-12	-10	-40	-35	-30	-30	-20	1500	
J1012F21R	1CT:1	1CT:1	YES	RG/R	-1.0	-20	-16	-12	-10	-40	-35	-30	-30	-20	1500	
J1012F21L	1CT:1	1CT:1	YES	RY/RG	-1.0	-20	-16	-12	-10	-40	-35	-30	-30	-20	1500	
J1026F01	1CT:1	1CT:1	No	NONE	-1.0	-20	-16	-12	-10	-40	-35	-30	-30	-20	1500	
J1026F01P	1CT:1	1CT:1	No	G/Y	-1.0	-20	-16	-12	-10	-40	-35	-30	-30	-20	1500	
J1026F21C	1CT:1	1CT:1	YES	Y/G	-1.0	-20	-16	-12	-10	-40	-35	-30	-30	-20	1500	
JP006821U	1CT:1	1CT:1	YES	G_O/Y	-1.0	-20	-16	-12	-10	-40	-35	-30	-30	-20	1500	
JP011821U	1CT:1	1CT:1	YES	G_O/Y	-1.0	-20	-16	-12	-10	-40	-35	-30	-30	-20	1500	
JP026821U	1CT:1	1CT:1	YES	G_O/Y	-1.0	-20	-16	-12	-10	-40	-35	-30	-30	-20	1500	

#### Notes:

1. Both transmit and receive channels meet IEEE 802.3 specifications.
2. Different electrical and mechanical specifications can be accommodated.
3. LEDs Left/Right: G=green, Y=yellow, G\_O=green/orange bi-color, R = LEDs with resistors.
4. J1/JP series platform capable of withstanding 235°C solder reflow.
5. For explanation of EMI fingers, refer to mechanical drawing on page 2.

### RJ45 Durability Testing Rating

Part Number	Mating Force (MAX)	Unmating Force (MAX)	Durability	Plug to Jack Retention (MIN)
JP/J1 Series	5 lbs./2.268 kgs.	5 lbs./2.268 kgs.	750 Insertions	20 lbs./9.072 kgs.

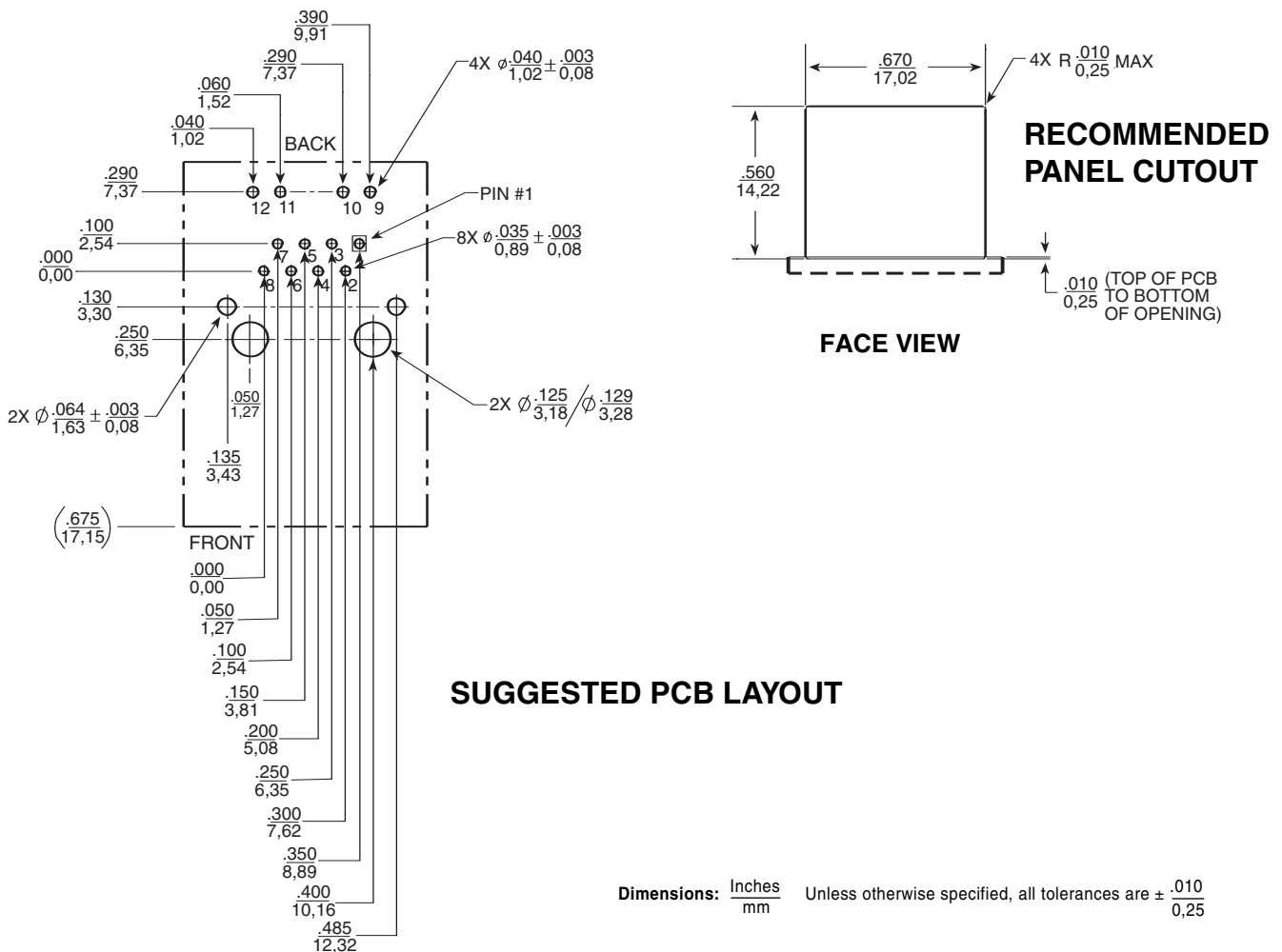
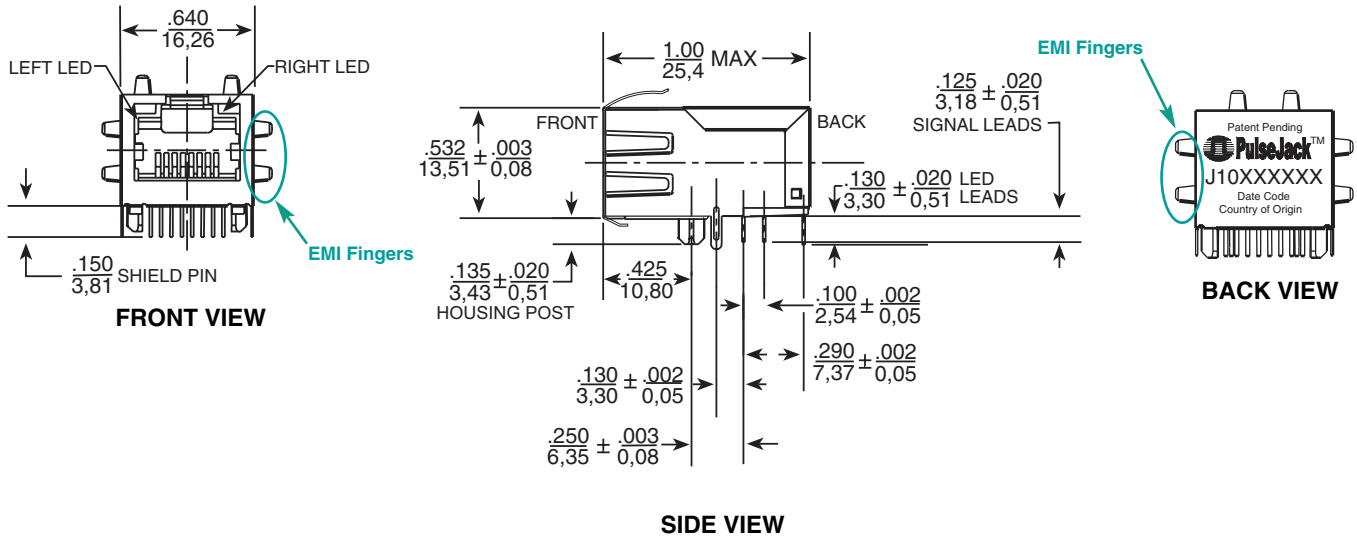
### RJ45 Material Specification

Part Number	Shield		Contact			Housing	
	Material	Finish	Material	Plating Area	Solder Area	Material	Specification
JP/J1 Series	Brass	10-20m inches Nickel over 10-20m inches Brass	Phosphor Bronze	Nickel underplating and selective gold plating 15µ inches	120µ inches Sn90/Pb10 over 50µ inches nickel	Thermoplastic	UL 94 V-0

#### Notes:

1. All connector part numbers starting with the series prefix JP/J1 comply to the above limits.
2. Connector dimensions comply with FCC dimension requirements.

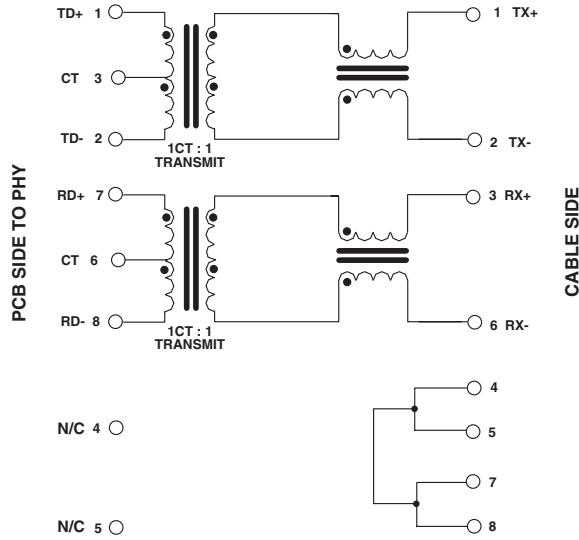
### J1 Series Mechanicals



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

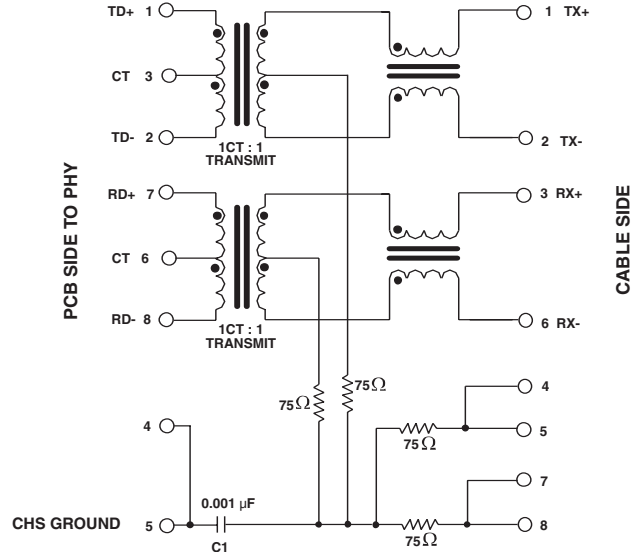
### J1 Series Electrical Schematics

#### J1006



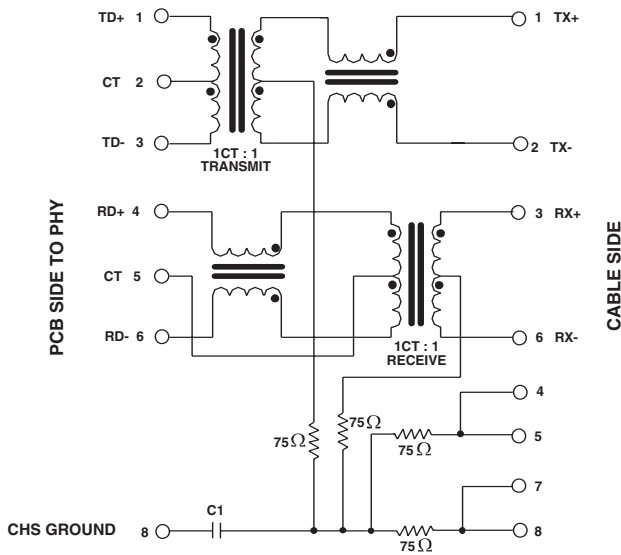
NOTE: Connect CHS GND to PCB ground.

#### J1011



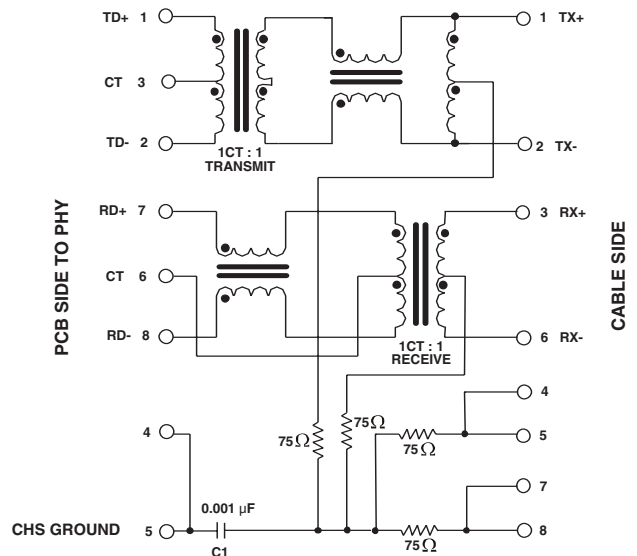
NOTE: Connect CHS GND to PCB ground.

#### J1012



NOTE: Connect CHS GND to PCB ground.

#### J1026



NOTE: Connect CHS GND to PCB ground.

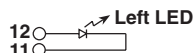
LED = P



LED = L or R



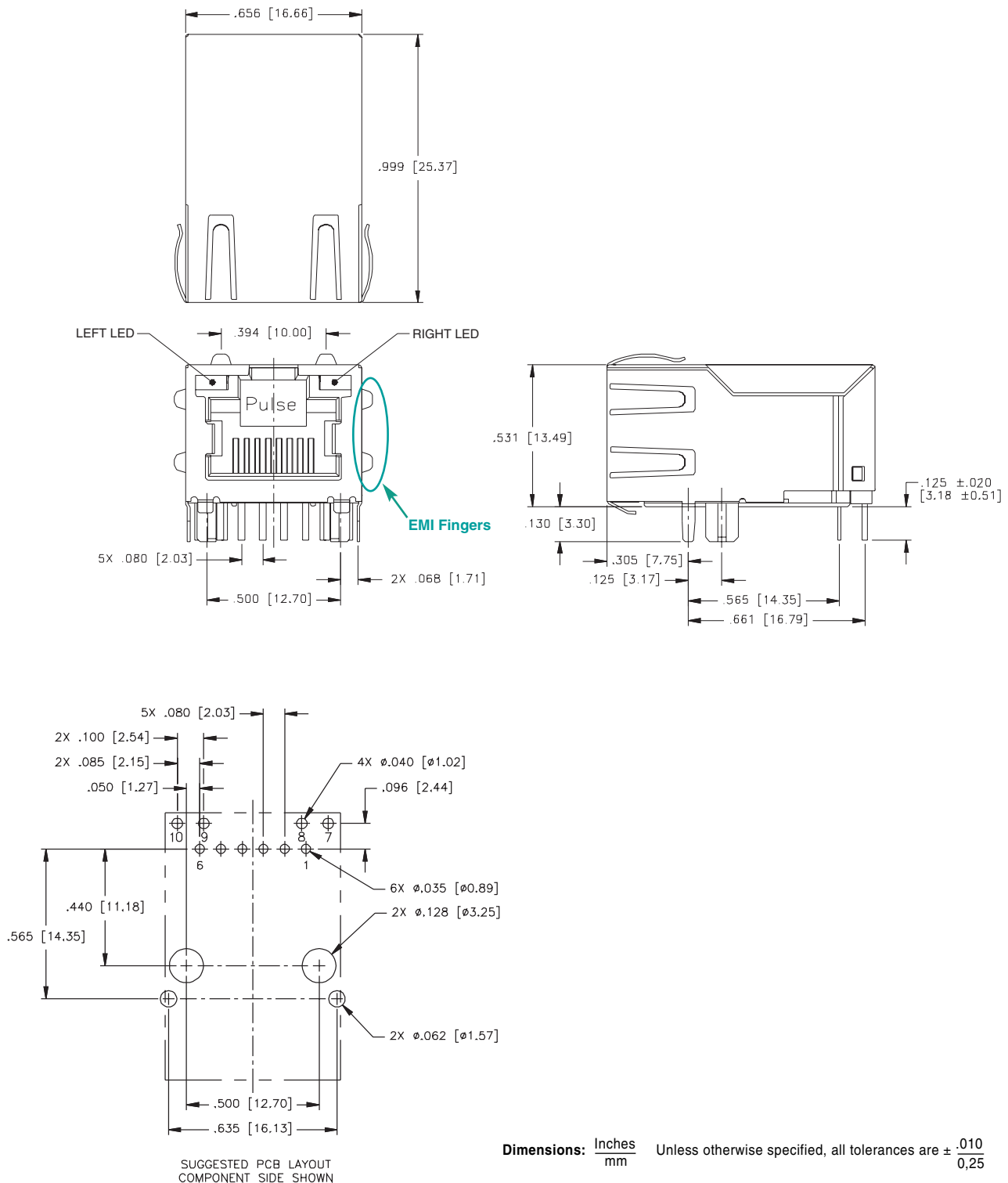
LED = C or K



Standard LED	Wavelength	Forward* V(MAX)	(TYP)
Yellow	585 nm	2.5 V	2.1 V
Green	565 nm	2.5 V	2.2 V

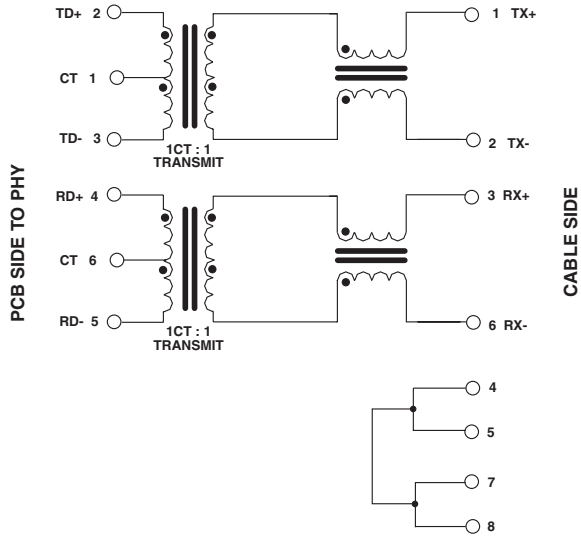
\* With a forward current of 20 mA

### JP Series Mechanicals



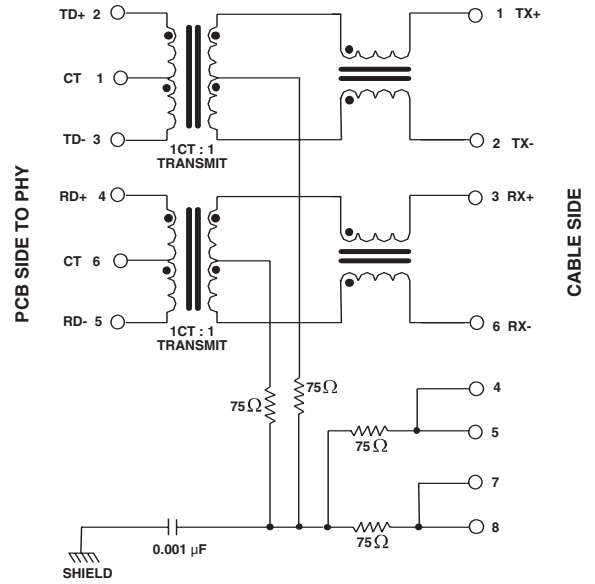
### JP Series Electrical Schematics

#### JP006

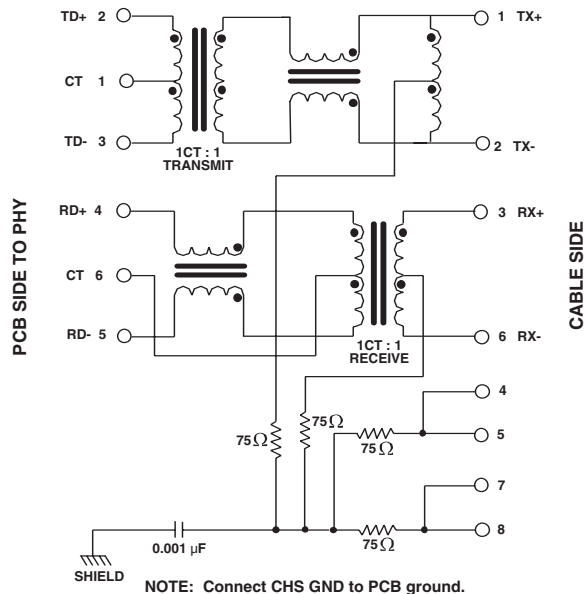


NOTE: Connect CHS GND to PCB ground.

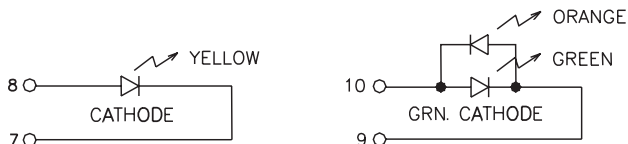
#### JP011



#### JP026



NOTE: Connect CHS GND to PCB ground.



Standard LED	Wavelength	Forward* V (MAX)	(TYP)
Yellow	585 nm	2.5 V	2.1 - 2.2 V
Green	565 nm	2.5 V	2.1 - 2.2 V
Orange	610 nm	2.5 V	2.1 - 2.2 V

\* With a forward current of 20 mA

## Application Notes

### Advantages of the PulseJack Modules

#### Increased Reliability

Pulse developed a patented method for ensuring the quality, consistency, and connection integrity of encapsulated coils and other three-dimensional electronic components. The InterLock Base consists of an internal plastic carrier that holds the coil firmly in place and provides precisely engineered "lead-channels" to lock together the lead wires and the leadframe pins. All of the InterLock Base interconnections are then simultaneously dip soldered, providing for both efficiency and uniformity for best common mode rejection and crosstalk.

#### Higher Manufacturing Yields

Because of this Pulse patented higher reliability method, there is less of a chance of opens and shorts, thus providing higher yields.

#### Consistent Electrical and Magnetic Performance

- With internal magnetics specifically oriented on all parts, there are more consistent readings on all functional tests. This is optimized for best crosstalk, common mode rejection and return loss.
- With the selection of common mode material and winding techniques, common mode noise rejection maintains integrity at higher frequencies.
- Multiple tabs around shield-to-ground, shield-to-chassis, and shunt noise to ground improves EMI suppression.

### For More Information :

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