

# STARJACK™

## 1x1 Tab-DOWN RJ45



[www.pulseeng.com](http://www.pulseeng.com)

### Description:

10/100 Base-TX RJ45 1x1 Tab-DOWN 8-pin Integrated Magnetics Connector, without LEDs, designed to support high volume cost-conscious consumer applications such as: ADSL modems, Cable modems, STB and Video on Demand.



### Features and Benefits:

- RoHS “NL” peak solder rating 260°C, non-RoHS peak solder rating 235°C
- For RoHS part, add suffix NL<sup>7</sup>
- Low cost 1x1 Tab-DOWN RJ45 with internal magnetics
- Available with or without 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:

- Meets IEEE 802.3 specification
- 350µH minimum OCL with 8mA bias current
- High performance for Max EMI suppression for cost-conscious applications
- Minimum 1500Vrms isolation per IEEE 802.3 requirement

### 10 Base-T Electrical Specifications @ 25°C — Operating Temperature 0°C to +70°C

Part Number	RoHS <sup>7</sup>	Data Rate	Turns <sup>1</sup> Ratios		EMI <sup>2</sup> Fingers	LEDs <sup>3</sup> (L/R)	BST <sup>6</sup>	Insertion Loss (dB MAX)	Return Loss (dB MIN) 100Ω ±15Ω	Crosstalk (dB MIN)	Common Mode Rejection (dB MIN)	Hipot (Vrms) @60Hz 1 MIN
			TX	RX				1-10MHz	1-10MHz	1-10MHz	5MHz	
J00-0025 <sup>4,5</sup>	8	10BT	1CT:2.5	1CT:1	Yes	None	No	-1	-15	-30	-25	1500
J00-0051 <sup>4,5</sup>	8	10BT	1CT:2.5	1CT:1	Yes	G/Y	No	-1	-15	-30	-25	1500
J00-0062 <sup>4,5</sup>	8	10BT	1CT:2.5	1CT:1	No	None	No	-1	-15	-30	-25	1500
J00-0063 <sup>4,5</sup>	8	10BT	1CT:2.5	1CT:1	No	G/Y	No	-1	-15	-30	-25	1500

### 10/100 Base-T Electrical Specifications @ 25°C — Operating Temperature 0°C to +70°C

Part Number	RoHS <sup>7</sup>	Data Rate	Turns <sup>1</sup> Ratios		EMI <sup>2</sup> Fingers	LEDs <sup>3</sup> (L/R)	BST	Insertion Loss (dB MAX)	Return Loss (dB MIN) 100Ω ±15Ω					Crosstalk (dB MIN)			Common Mode Rejection (dB MIN)	Hipot (Vrms) @60Hz 1 MIN
			TX	RX				1-65MHz	1-10MHz	10-30MHz	30-60MHz	60-80MHz	1-30MHz	30-60MHz	60-100MHz	1-50MHz	50-150MHz	
J00-0014 <sup>5</sup>	8	100BT	1CT:1	1CT:1	No	None	Yes	-1	-18	-14	-12	-10	-35	-35	-30	-20	-15	1500
J00-0042 <sup>5</sup>	8	100BT	1CT:1	1CT:1	No	None	No	-1	-18	-14	-12	-10	-35	-35	-30	-20	-15	1500
J00-0045 <sup>5</sup>	8	100BT	1CT:1	1CT:1	No	G/Y	Yes	-1	-18	-14	-12	-10	-35	-35	-30	-20	-15	1500
J00-0046 <sup>5</sup>	8	100BT	1CT:1	1CT:1	No	G/Y	No	-1	-18	-14	-12	-10	-35	-35	-30	-20	-15	1500
J00-0061 <sup>5</sup>	8	100BT	1CT:1	1CT:1	Yes	None	Yes	-1	-18	-14	-12	-10	-35	-35	-30	-20	-15	1500
J00-0064 <sup>5</sup>	8	100BT	1CT:1	1CT:1	Yes	None	No	-1	-18	-14	-12	-10	-35	-35	-30	-20	-15	1500
J00-0065 <sup>5</sup>	NL	100BT	1CT:1	1CT:1	Yes	G/Y	Yes	-1	-18	-14	-12	-10	-35	-35	-30	-20	-15	1500
J00-0066 <sup>5</sup>	8	100BT	1CT:1	1CT:1	Yes	G/Y	No	-1	-18	-14	-12	-10	-35	-35	-30	-20	-15	1500
J00-0086 <sup>5</sup>	8	100BT	√2CT:1	√2CT:1	Yes	G/Y	No	-1	-18	-14	-12	-10	-35	-35	-30	-20	-15	1500

- Notes:**
- Both transmit and receive channels meet IEEE 802.3 specifications.
  - For an explanation of EMI fingers, refer to the mechanical drawing page.
  - LEDs Left/Right: G=green, Y=yellow
  - IEEE802.3i (10Base-T) standard does not require these parts to achieve 350µH minimum OCL with 8mA bias current for 10Base-T parts.
  - AutoMDX compatible 100Base-T and 10Base-T connector modules.
  - Capacitor resistor termination circuit included within these parts.
  - Add suffix “NL” for RoHS compliant parts (e.g. J00-0065 changes to J00-0065NL).
  - Contact Pulse for RoHS compliant part availability.

### RJ45 Durability Testing Rating

Part Number	Mating Force (MAX)	Unmating Force (MAX)	Durability	Plug to Jack Retention (MIN)
J00 Series	5 lbs./2.268 kgs.	5 lbs./2.268 kgs.	750 Insertions	20 lbs./9.072 kgs.

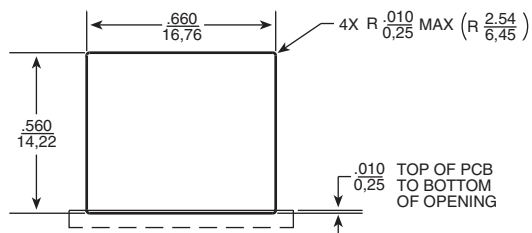
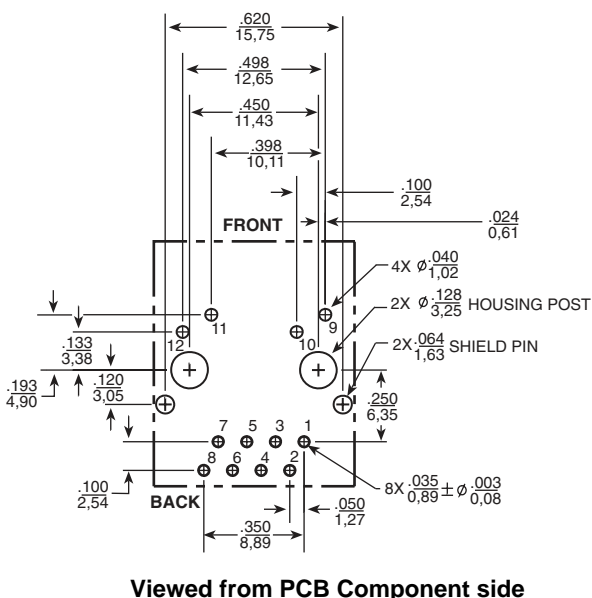
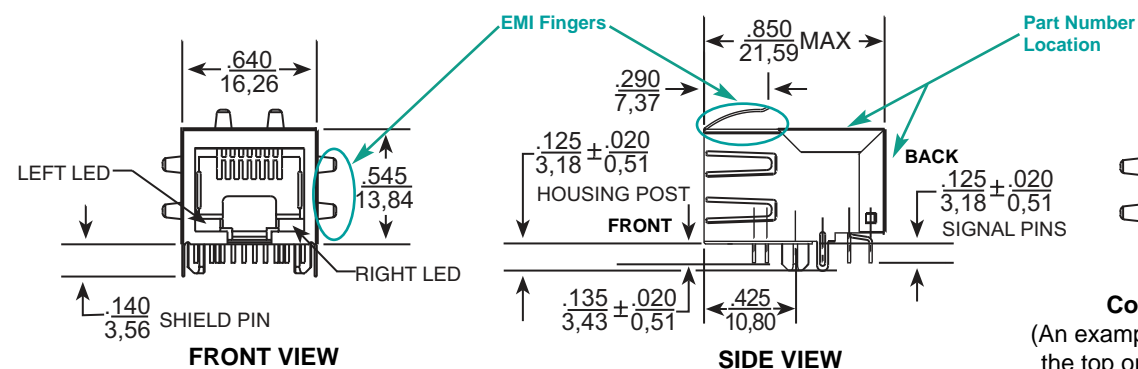
### RJ45 Material Specification

Part Number	Shield		Contact			Housing		MSL <sup>3</sup> Rating
	Material	Finish	Material	Plating Area	Solder Area	Material	Specification	
J00 Series	Brass	20-40m 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	1

- NOTES:**
- All connector part numbers starting with the series prefix J00 comply to the above limits.
  - Connector dimensions comply with FCC dimension requirements..
  - MSL - Moisture Sensitivity Level class limits = 1 to 5 (Highest: 1; Lowest: 5).

US 619 674 8100 • UK 44 1483 401 700 • France 33 3 84 35 04 04 • Singapore 65 6287 8998 • Taiwan 886 2 2698 0228 • Hong Kong 852 2788 6588 • <http://www.pulseeng.com>

### J00-00XX Series Mechanicals



**Dimensions:** Inches  
mm  
Unless otherwise specified,  
all tolerances are ± .010  
0,25

### LED Configuration

Green / Yellow LED Specification - (LEDs without internal resistors)

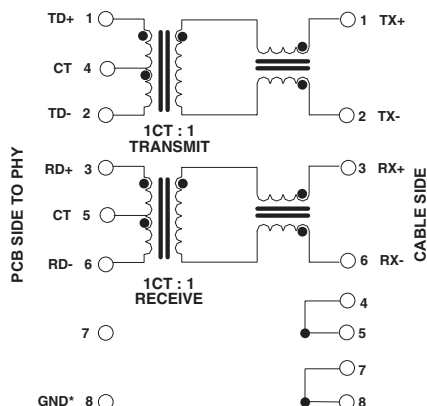


Standard LED	Wavelength	Forward* V(MAX)	(TYP)
Yellow	585 nm	2.5 V	2.1 V
Green	565 nm	2.5 V	2.2 V

\* Assumes bias current = 20mA

### J00-00XX Series Electrical Schematics

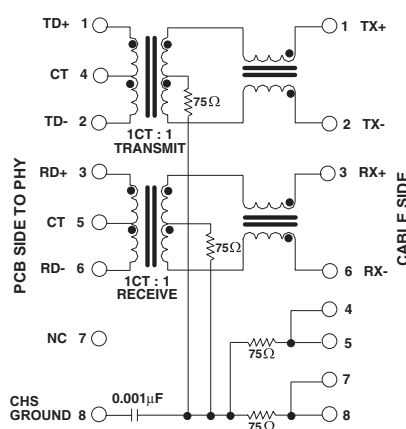
#### J00-0042/46/64/66/86



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

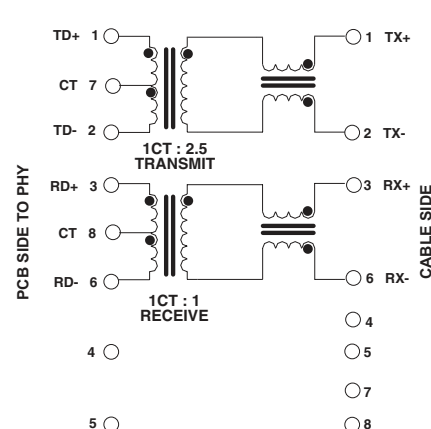
\*\*J00-0086 Turns Ratio TX, RX = 1.414CT:1 (√2CT:1)

#### J00-0014/45/61/65



NOTE: Connect CHS GND to PCB ground.

#### J00-0025/51/62/63



## 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:

UNITED STATES (Worldwide)	UNITED KINGDOM (Northern Europe)	FRANCE (Southern Europe)	SINGAPORE (Southern Asia)	TAIWAN, R.O.C. (Northern Asia)	HONG KONG (China/Hong Kong)	DISTRIBUTOR
12220 World Trade Drive San Diego, CA 92128 U.S.A. <a href="http://www.pulseeng.com">http://www.pulseeng.com</a> TEL: 858 674 8100 FAX: 858 674 8262	3 Huxley Road Surrey Research Park Guildford, Surrey GU2 5RE United Kingdom TEL: 44 1483 401700 FAX: 44 1483 401701	Zone Industrielle F-39270 Orgelet France TEL: 33 3 84 35 04 04 FAX: 33 3 84 25 46 41	150 Kampong Ampat #07-01/02 KA Centre Singapore 368324 TEL: 65 6287 8998 FAX: 65 6280 0080	3F-4, No. 81, Sec. 1 HsinTai Wu Road Hsi-Chih, Taipei Hsien Taiwan, R.O.C. Tel: 886 2 2698 0228 FAX: 886 2 2698 0948	Unit 11, 11/F Wah Lai Industrial Centre 10-14 Kwei Tei Street, Fotan, Shatin, Hong Kong TEL: 852 2788 6588 FAX: 852 2776 1055	

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.