

APPROVAL SHEET

To :

Customer P/N :

SINGATRON P/N : 2TJRH1-4620KB13

Description : RJ45 Over USB 3.0

Through Hole

10/100/1000 Base-T

Contact Area : 30 μ " Gold

LED:L-Green/Orange;R-Yellow



Spec No.
RH10002-00

Update Date
11/17/2014

Revision
D

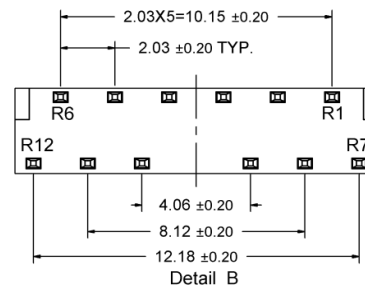
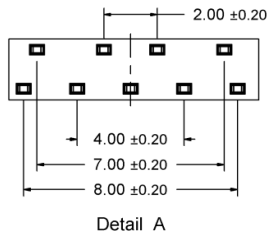
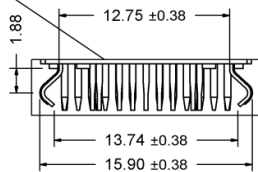
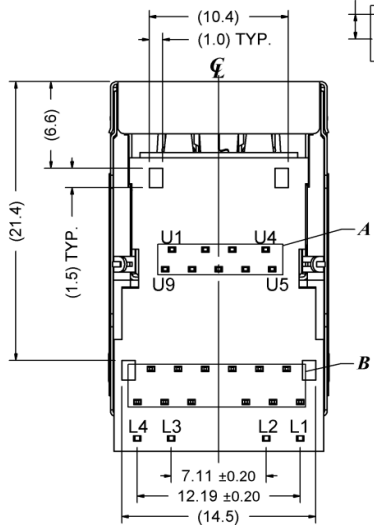
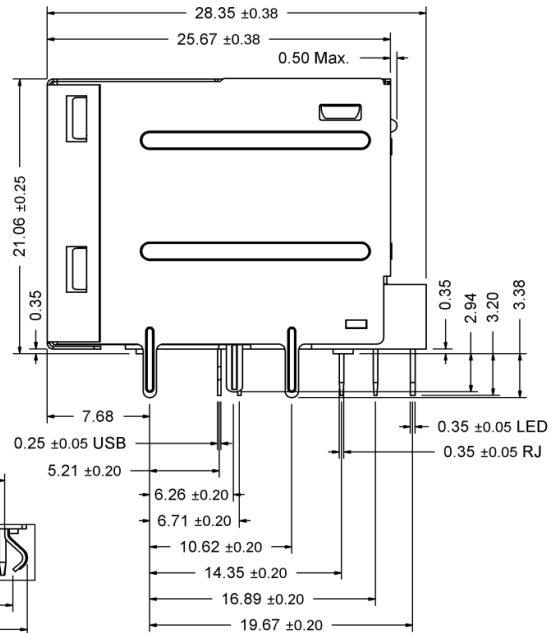
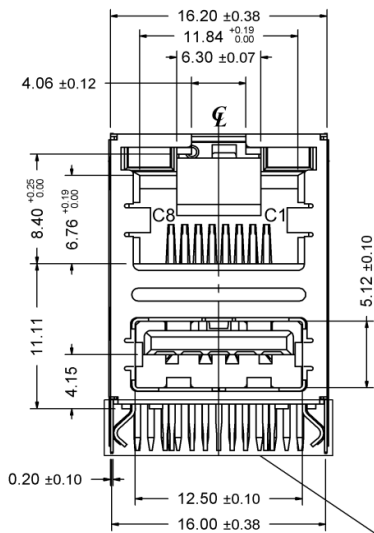
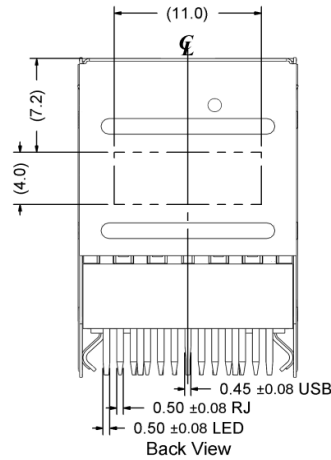
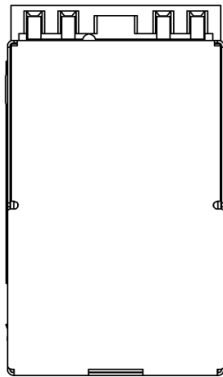
Approved	Checked	Prepared

SINGATRON U.S.A.
13925 MAGNOLIA AVE
CHINO, CA 91710 USA

1. MECHANICAL DIMENSION

1.1 Product Dimension

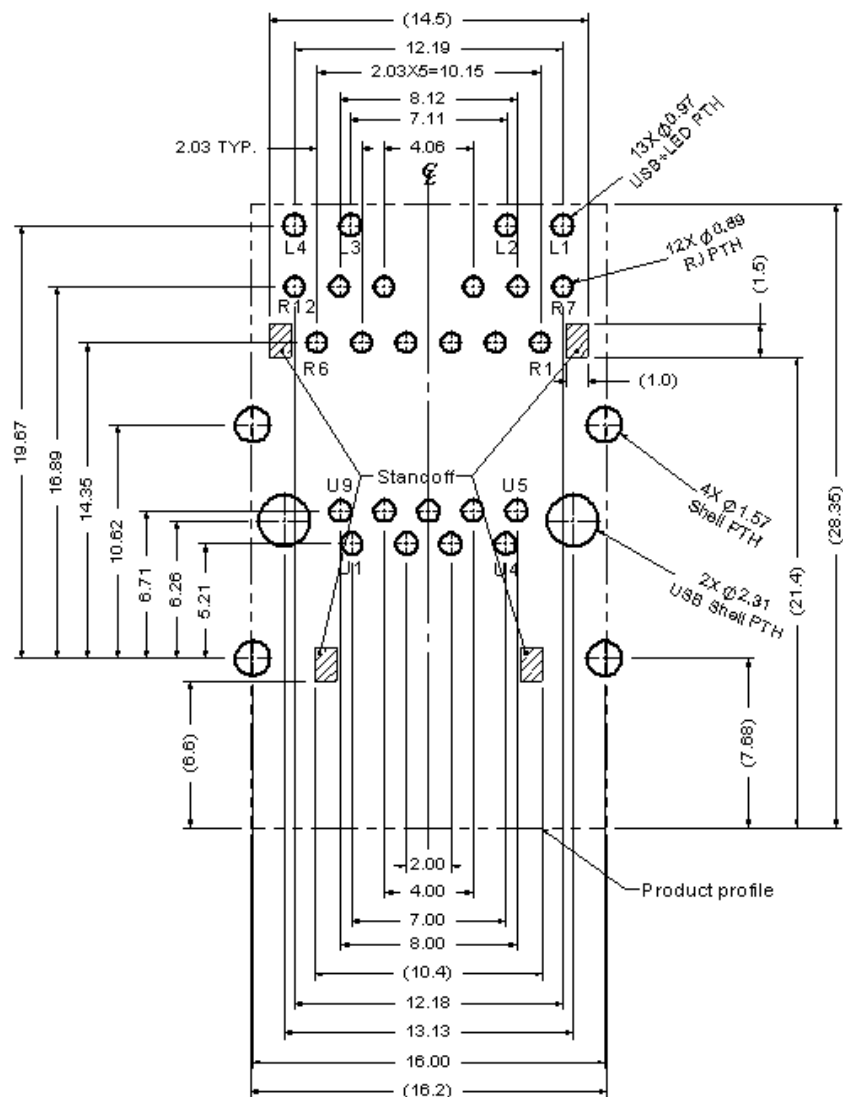
General Tolerance : X.X : ± 0.38
X.XX : ± 0.25



1.2 Recommended PCB Layout

Component Side of Board

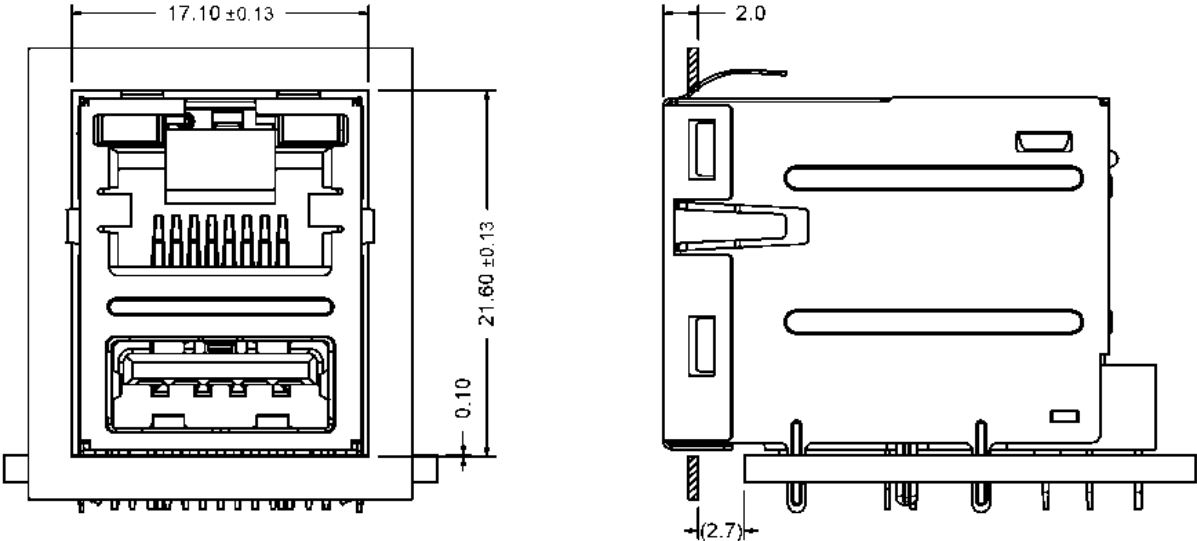
All dimension tolerance are $\pm 0.05\text{mm}$ unless otherwise specified



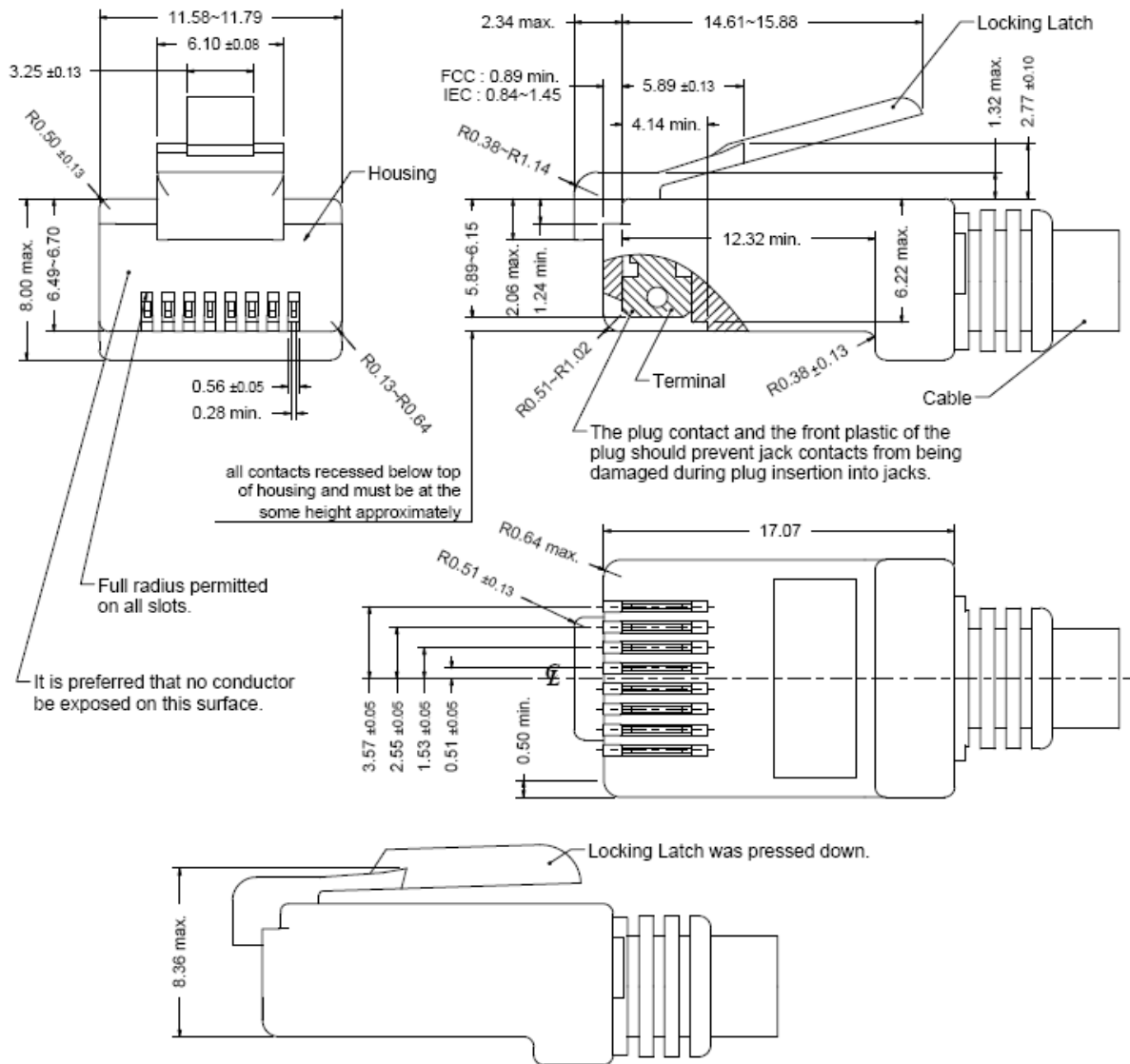
USB 3.0 Standard-A Connector Pin Assignments

PIN Number	Signal Name	Description
U1	VBUS	POWER
U2	D-	USB2.0 Differential pair
U3	D+	
U4	GND	Ground for power return
U5	STDA-SSRX-	Superspeed receiver differential pair
U6	STDA-SSRX+	
U7	GND-DRAIN	Ground for signal return
U8	STDA-SSTX-	Superspeed transmitter differential pair
U9	STDA-SSTX+	

1.3 Panel Cutout

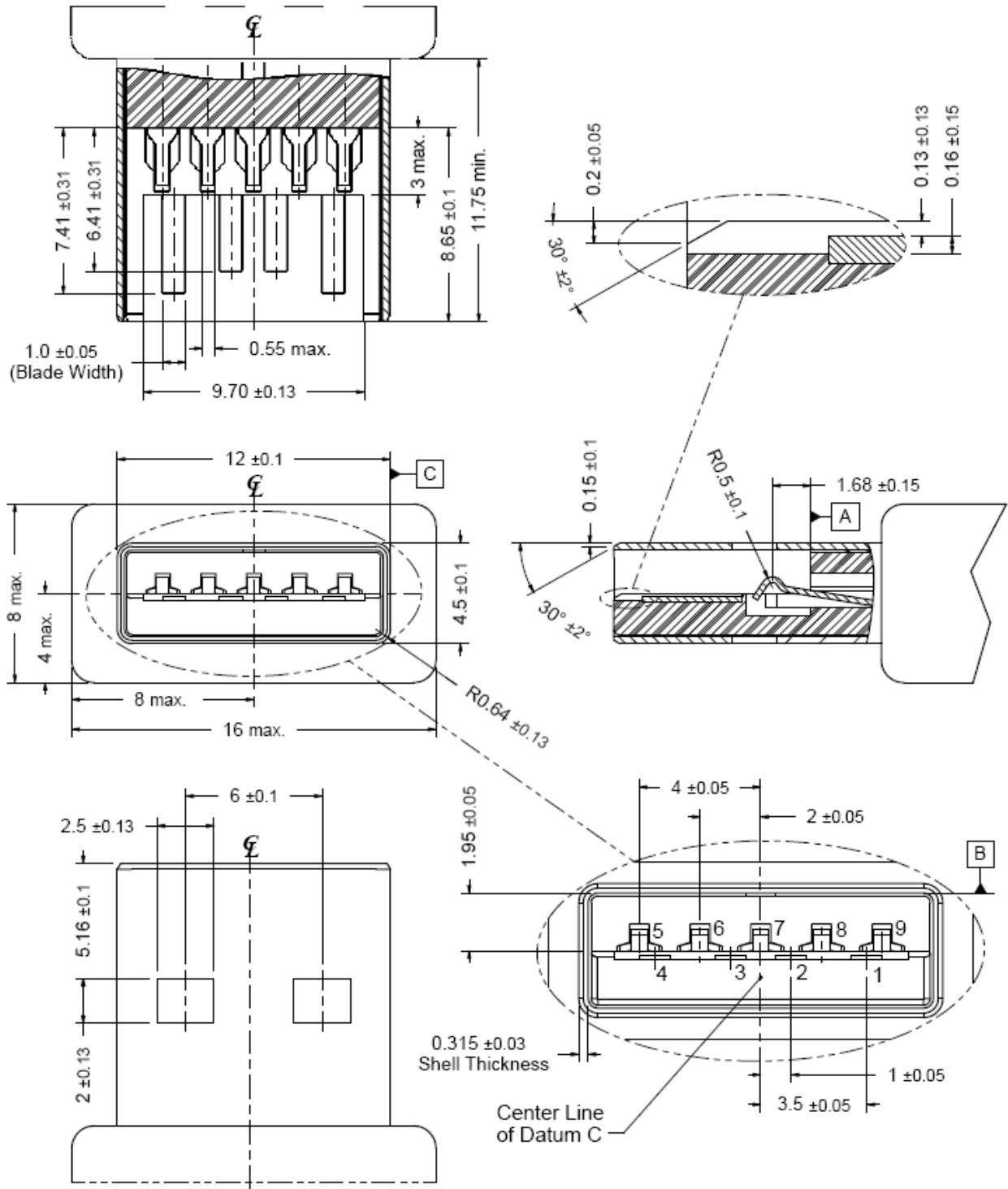


1.4 Standard RJ45 Plug Specification



- All dimensions follow :
FCC subpart F, 68,500, Figure (C)(2)(i) & (C)(2)(ii) & (C)(3)(i)
IEC 60603-7
- All plugs must be meeting the requirements of plug Go & No-Go gauge.
Gauge follow : FCC subpart F, 68,500, Figure (C)(4)(i) & (C)(5)(i)
- There must be no damage to Housing and Locking Latch.
- There must be no nicks and cuts in cable.
- Durability : 750 cycles generally

1.5 Standard USB 3.0 Plug Specification



- All dimensions follow : Universal Serial Bus 3.0 Specification, Revision 1.0.

Figure 5-2. USB 3.0 Standard Plug-A interface dimensions

- Non-dimensions geometry for reference only, subject to change.

- Drawing for mating interface dimensions only.

Views may not show realistic manufacturing condition.

2. REQUIREMENTS

2.1 Design and Construction

Product shall be of design, construction and physical dimensions specified on applicable.

2.2 Material

2.2.1 Terminal Parts (Terminal : Underplating :30 μ " min. Nickel overall)

2.2.1.1 RJ Terminal : PH. Bronze, Thickness=0.30mm

Finish : Contact Area : 30 μ " Gold

Solder Tail : 100 μ " min. Mt.Tin

2.2.1.2 USB 2.0&3.0 Terminal : Brass, Thickness=0.20mm

Finish : Contact Area : 30 μ " Gold

Solder Tail : 100 μ " min.Mt. Tin

2.2.1.3 Input Terminal : Brass, Thickness=0.35mm

Finish : 100 μ " min. Mt.Tin

2.2.1.4 Module Terminal : Brass, Thickness=0.30mm

Finish : 100 μ " min. Tin

2.2.2 Plastic Parts <UL94V-0>

2.2.2.1 Housing : PA6T, Black

2.2.2.2 Case : PA6T, Black

2.2.2.3 USB Housing : PBT,Blue(300C)

2.2.2.4 USB Spacer : PBT, Blue(300C)

2.2.2.5 Spacer : PA6T, Black

2.2.3 Shield Parts

2.2.3.1 Front Shield : Stainless, Thickness=0.20mm, unplating

2.2.3.2 Back Shield : Stainless, Thickness=0.20mm, Pre-soldering

2.2.3.3 USB Shield :Stainless, Thickness=0.25mm

2.3 Operating and Storage Temperature

Operating Temperature : 0°C to +70°C

Storage Temperature : -40°C to +85°C

2.4 RJ45 specifications

Insulation Resistance : 500MΩ min.

Insertion force with the latch depressed : 22N max

Removal force with the latch depressed : 44N max

Locking Force of Plug Latch : 50N min. @ 60+/-5 sec

Durability : 2500 cycles

2.5 USB 3.0 specifications

Insulation Resistance : 100MΩ min.

Dielectric Withstanding Voltage : 100VAC @1min

Insertion force : 35N max

Removal force : The connector extraction force shall not be less than 10N initial and 8N after the specified insertion/extraction or durability cycles

Durability : 1500 cycles

2.6 Performance and Test Description

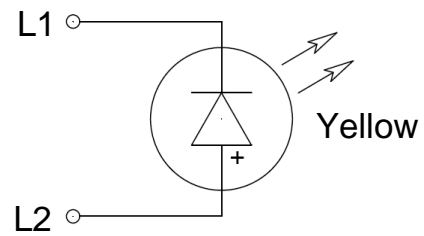
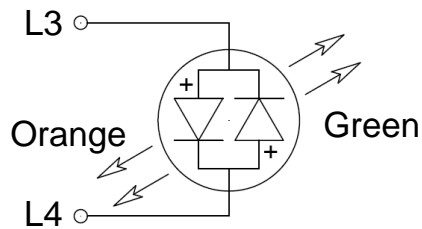
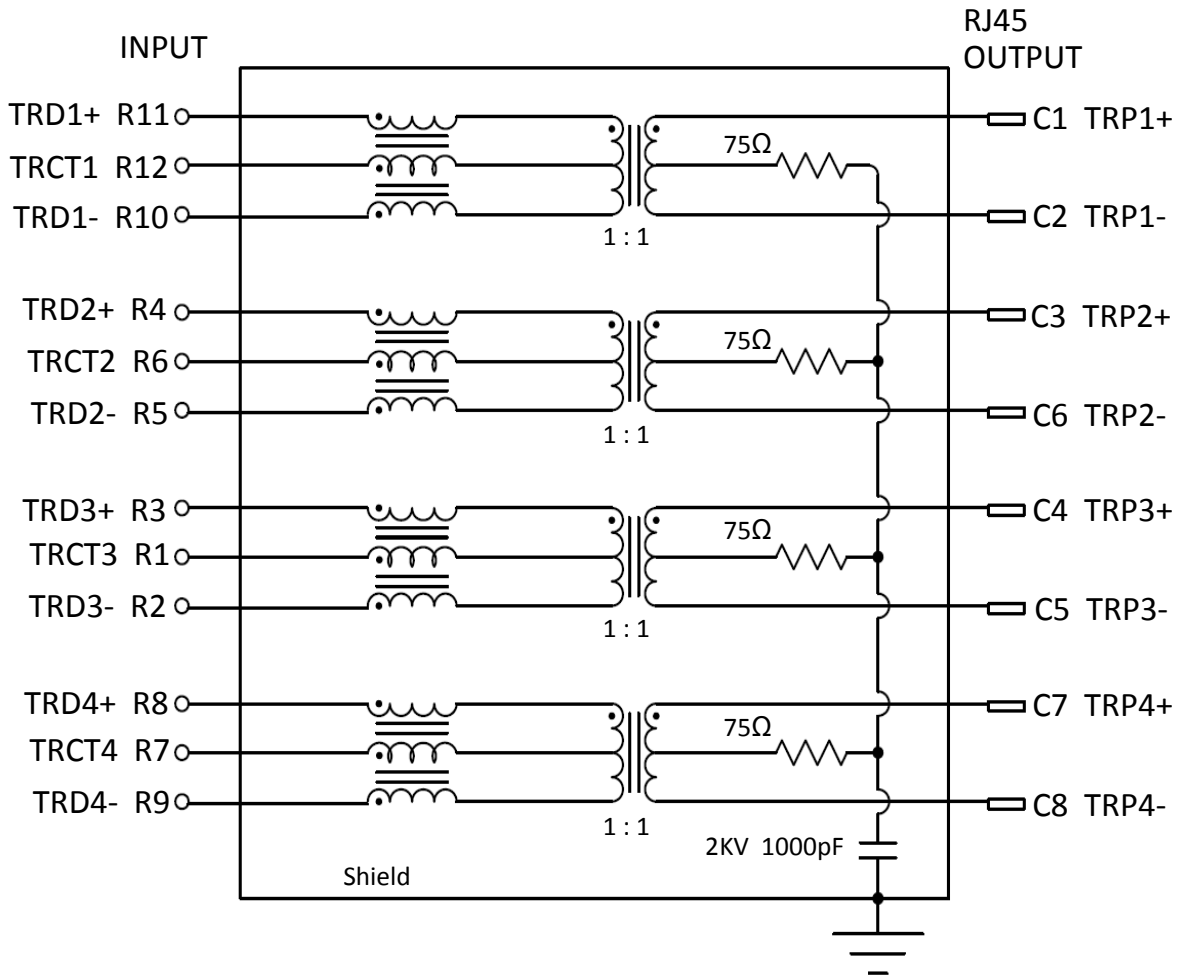
Product is designed to meet electrical, mechanical and environmental performance requirements specified in below table. All tests are performed at ambient environmental conditions per MIL-STD-1344A and EIA-364 unless otherwise specified.

2.7 Packaging and Packing

All parts shall be packaged and packed to protect against physical damage, corrosion and deterioration during shipment and storage.

3. ELECTRICAL CHARACTERISTICS

3.1 Schematic



Emitting Color	λ_p (nm)	$V_f @ I_f=20mA$	$I_r @ V_r=5V$
Green	565	1.7 ~ 2.6 V	10 μ A max.
Yellow	585	1.7 ~ 2.6 V	10 μ A max.
Orange	610	1.7 ~ 2.6 V	10 μ A max.

3.2 Transmitter filter & Receiver filter

Type : Balance low pass 100Ω impedance

Insertion loss : 1~100 MHz -1.0dB max.

Return loss : 1~30 MHz -18dB min. load 100Ω

30~60MHz -16dB min. load 100Ω

60~80MHz -12dB min. load 100Ω

80~100MHz -10dB min. load 100Ω

3.3 Common Mode Rejection

@ 1~100 MHz -30dB min.

3.4 Cross Talk

@ 1~100 MHz -30dB min.

3.5 Inductance @ 100KHz, 0.1V, 8mA DC BIAS

Input (R11-R10), Input(R4-R5), Input (R3-R2), Input(R8-R9): 350 μH min.

3.6 HiPot Test

Input(R11-R10) To Output(C1-C2) : 1500Vac 60s or 2250Vdc 60s

Input(R4-R5) To Output(C3-C6) : 1500Vac 60s or 2250Vdc 60s

Input(R3-R2) To Output(C4-C5) : 1500Vac 60s or 2250Vdc 60s

Input(R8-R9) To Output(C7-C8) : 1500Vac 60s or 2250Vdc 60s

4. ORDER INFORMATION

2T JR H1 - 4 6 20 KB1 3
 A B C D

A. LED Code :

L-Green/Orange;R-Yellow. <Refer to Schematic of LED>

B. Mechanical Code :

w/o logo, w/o Spring

C. Schematics Code :

KB1 : KB1 circuit

D. Plating Code :

Underplating	30 μ " min. Nickel overall	
Solder Tail	100 μ " min. Bright Tin	100 μ " min. Matted Tin
Contact Area	A : Gold Flash C : 6 μ " gold B : 10 μ " gold D : 15 μ " gold F : 30 μ " gold G : 50 μ " gold	1 : Gold Flash 6 : 6 μ " gold 2 : 15 μ " gold <u>3 : 30 μ " gold</u> 4 : 50 μ " gold

5. DIPPING TEMPERATURE PROFILE

Note :
The measuring point for the specified temperature shall be on the soldered part of the lead.

