

# APPROVAL SHEET

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To :

Customer P/N :

Singatron P/N : 2TJRH1-AD-0004

Description : RJ45 Over USB 3.1 Gen 2

Through Hole

10/100/1000 Base-T

Contact Area : Gold Flash

LED : L-Yellow; R-Yellow



Spec No.  
RH118036-00

Update Date  
1/14/2020

Revision  
B

Approved	Checked	Prepared

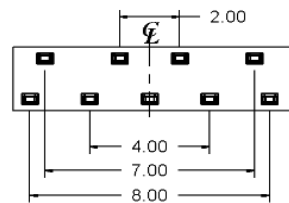
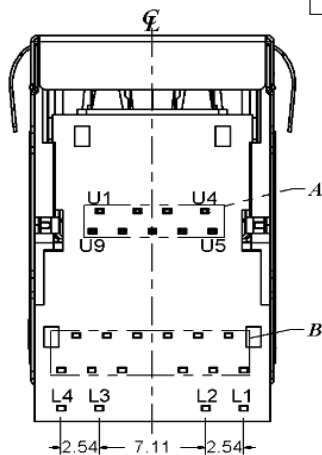
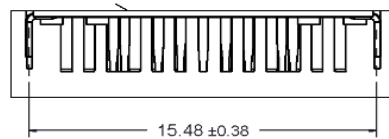
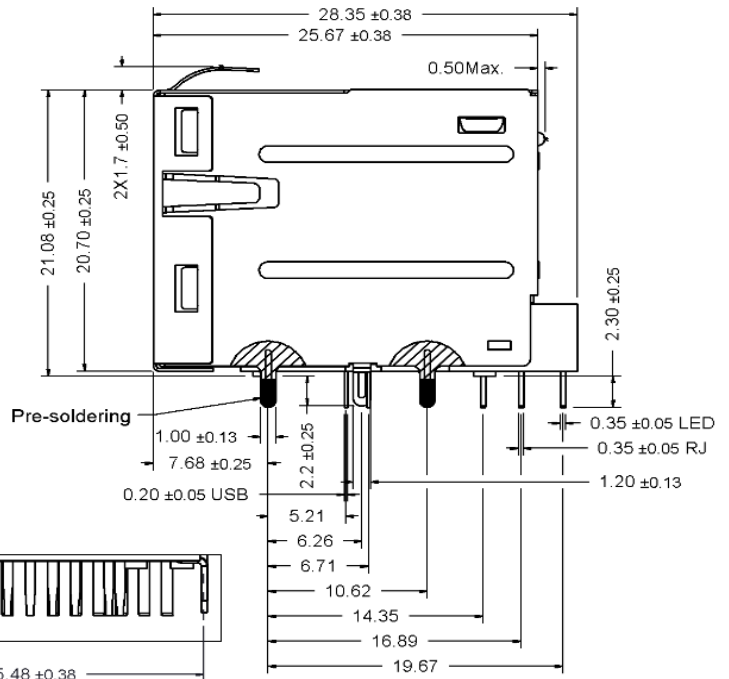
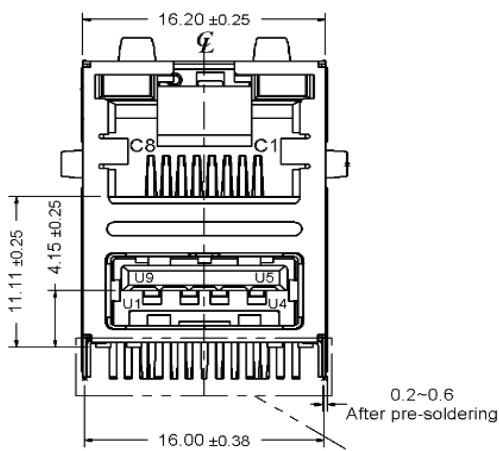
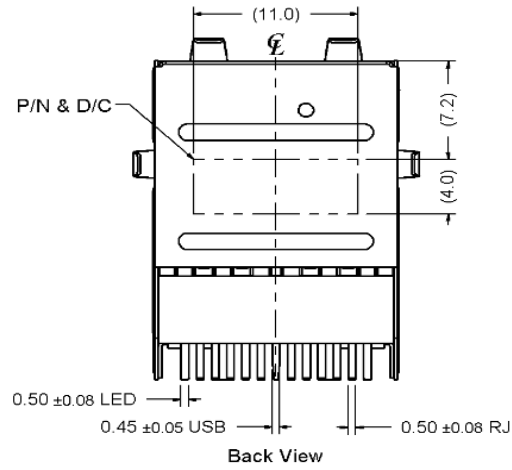
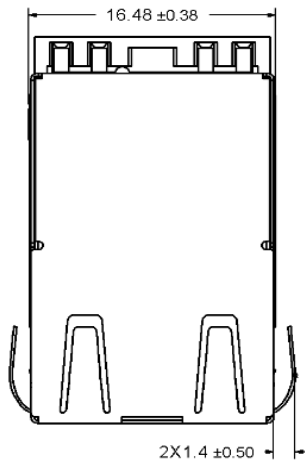
SINGATRON U.S.A.  
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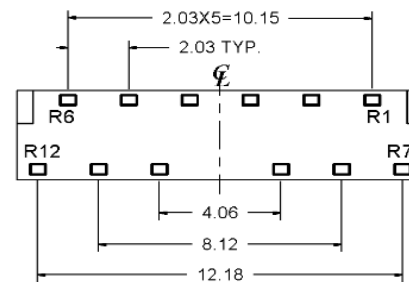
1. MECHANICAL DIMENSION

Product Dimension

Unit:mm	General Tolerance :	X.X : ± 0.38
		X.XX : ± 0.20



Detail A



Detail B

Recommended PCB Layout. Component side of board

All dimension units are "mm".

All dimension tolerances are ±0.05mm unless otherwise specified.

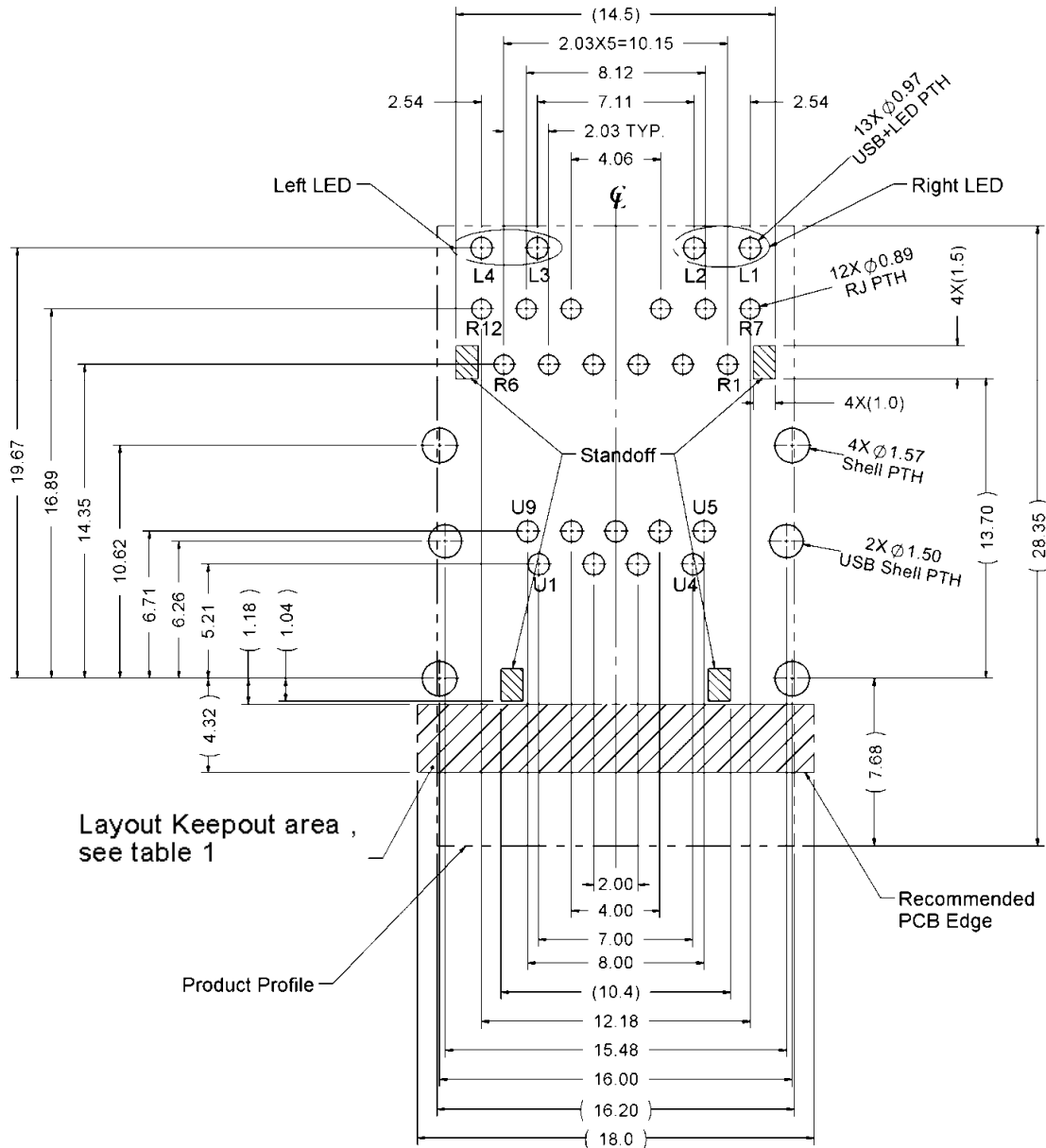
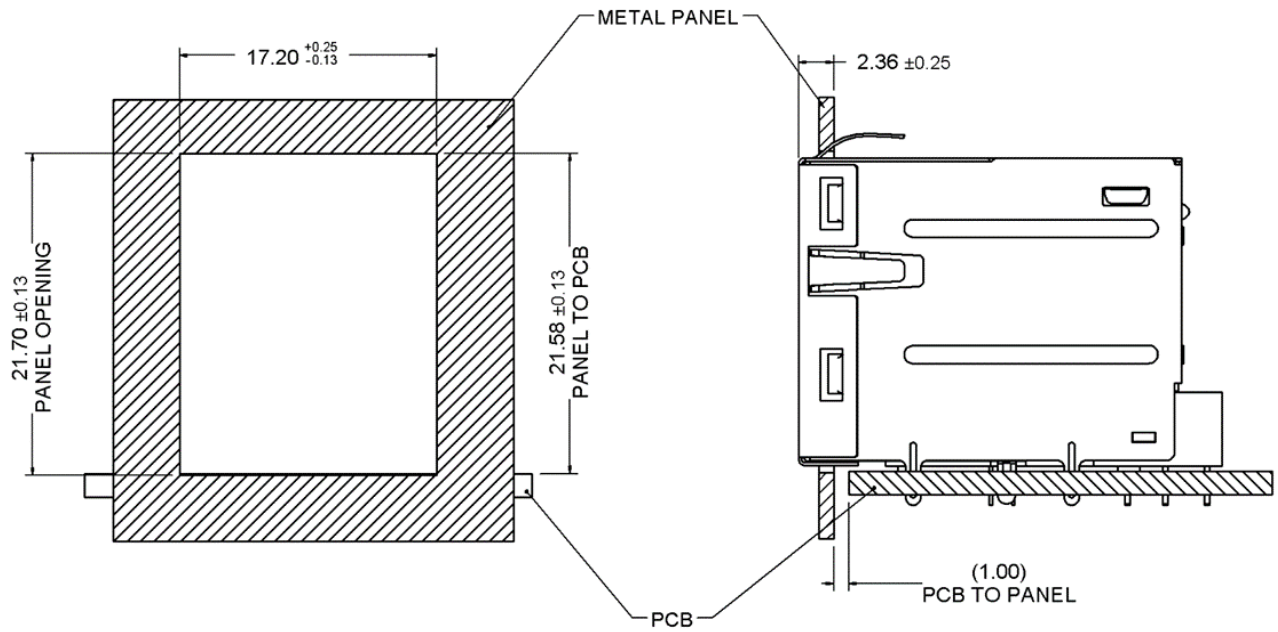


Table1

Layout Layer	Trace	component	Grounding	Test Point	Via Hole	PTH	NPTH
Component side	X	X	O	X	X	X	O
Inner layer	O	NA	O	NA	O	X	O
Bottom side	O	O	O	O	O	X	O

X--Forbid; O--OK; NA--Not Applicable.

## Recommended Panel cutout



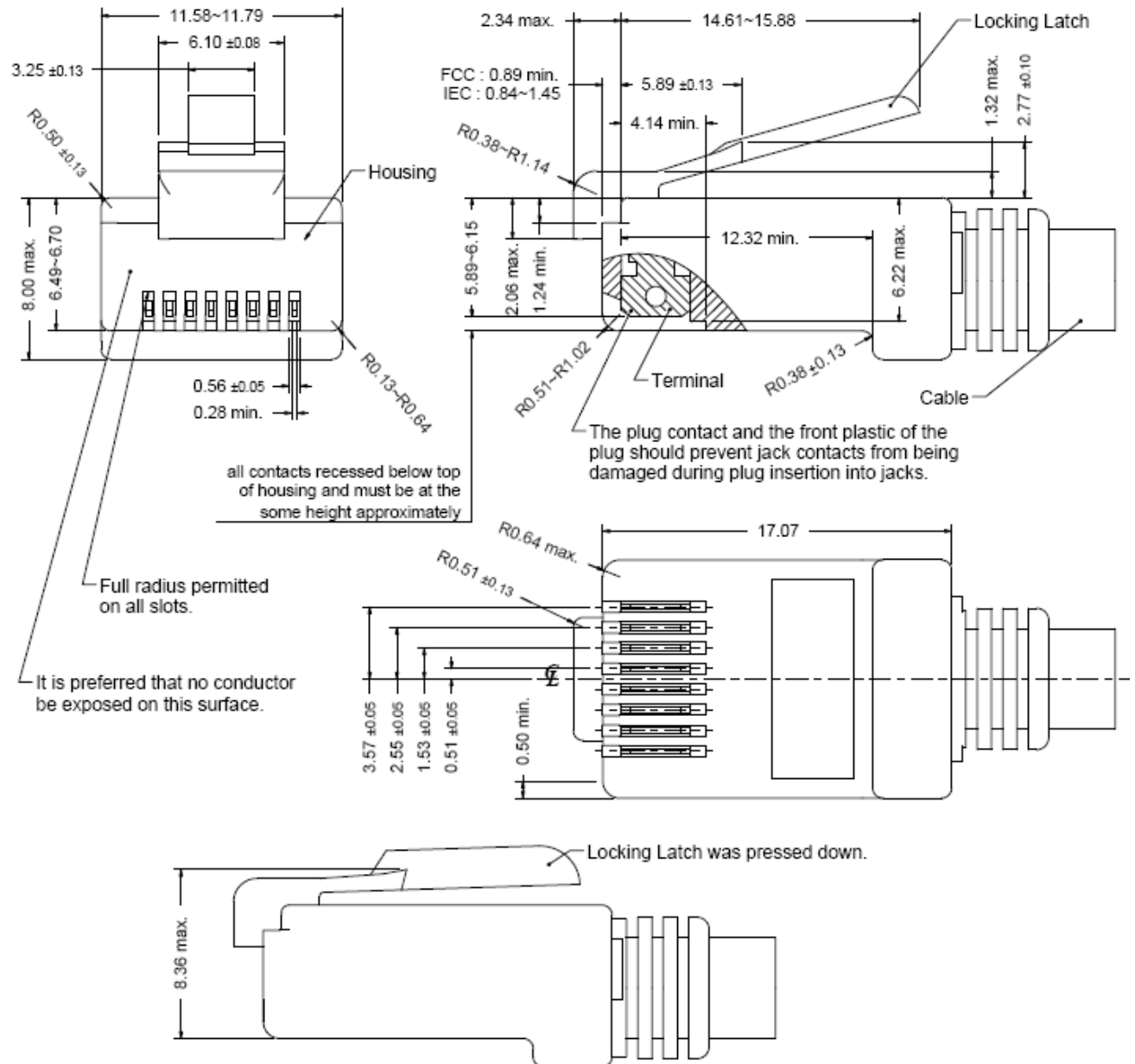
## 2. Packing Information

40 pcs finished goods per tray

7 trays(280 pcs finished goods) per inner box

4 Inner boxes(1120 pcs finished goods) per master carton

### 3. 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



## 5. REQUIREMENTS

### Design and Construction

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

### Material

Terminal Parts ( Terminal : Underplating :50 $\mu$ " min. Nickel overall )

RJ Terminal :Phosphor Bronze, Thickness=0.30mm

Finish Contact Area : Gold Flash

Solder Tail : 100 $\mu$ " min. Matte.Tin

USB 2.0&3.1 Gen 2 Terminal : Brass, Thickness=0.20mm

Finish Contact Area : Gold Flash

Solder Tail : 100 $\mu$ " min.Matte. Tin

Input Terminal : Brass, Thickness=0.35mm

Finish : 100 $\mu$ " min. Matte.Tin

Module Terminal : Brass, Thickness=0.30mm

Finish : 100 $\mu$ " min. Matte.Tin

Plastic Parts <UL94V-0>

Housing : PA6T, Black

Case : PA6T, Black

USB Housing : PA9T,Blue(300C)

USB Spacer : PA9T, Blue(300C)

Spacer : PA6T, Black

Shield Parts

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

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

USB Shield :Stainless steel, Thickness=0.25mm



## 6. Operating and Storage Temperature

Operating Temperature : -40°C to +85°C

Storage Temperature : -40°C to +85°C

## 7. RJ45 specifications

Insulation Resistance : 500MΩ min.

Insertion force with the latch depressed : 20N max.

Removal force with the latch depressed : 20N max.

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

Durability : 750 cycles

## 8. USB 3.1 Gen2 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

## 9. 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.

## 10. Packaging and Packing

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

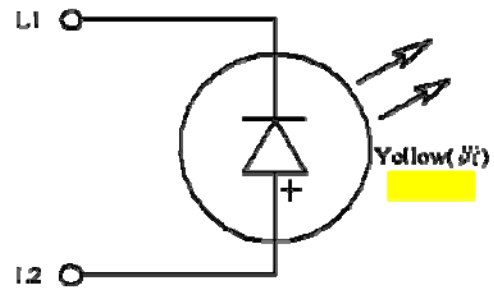
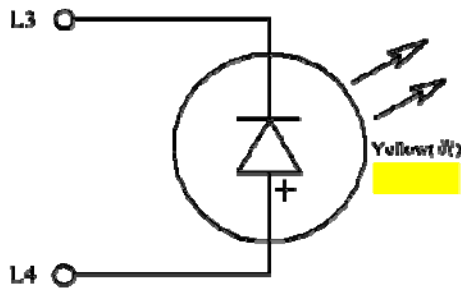
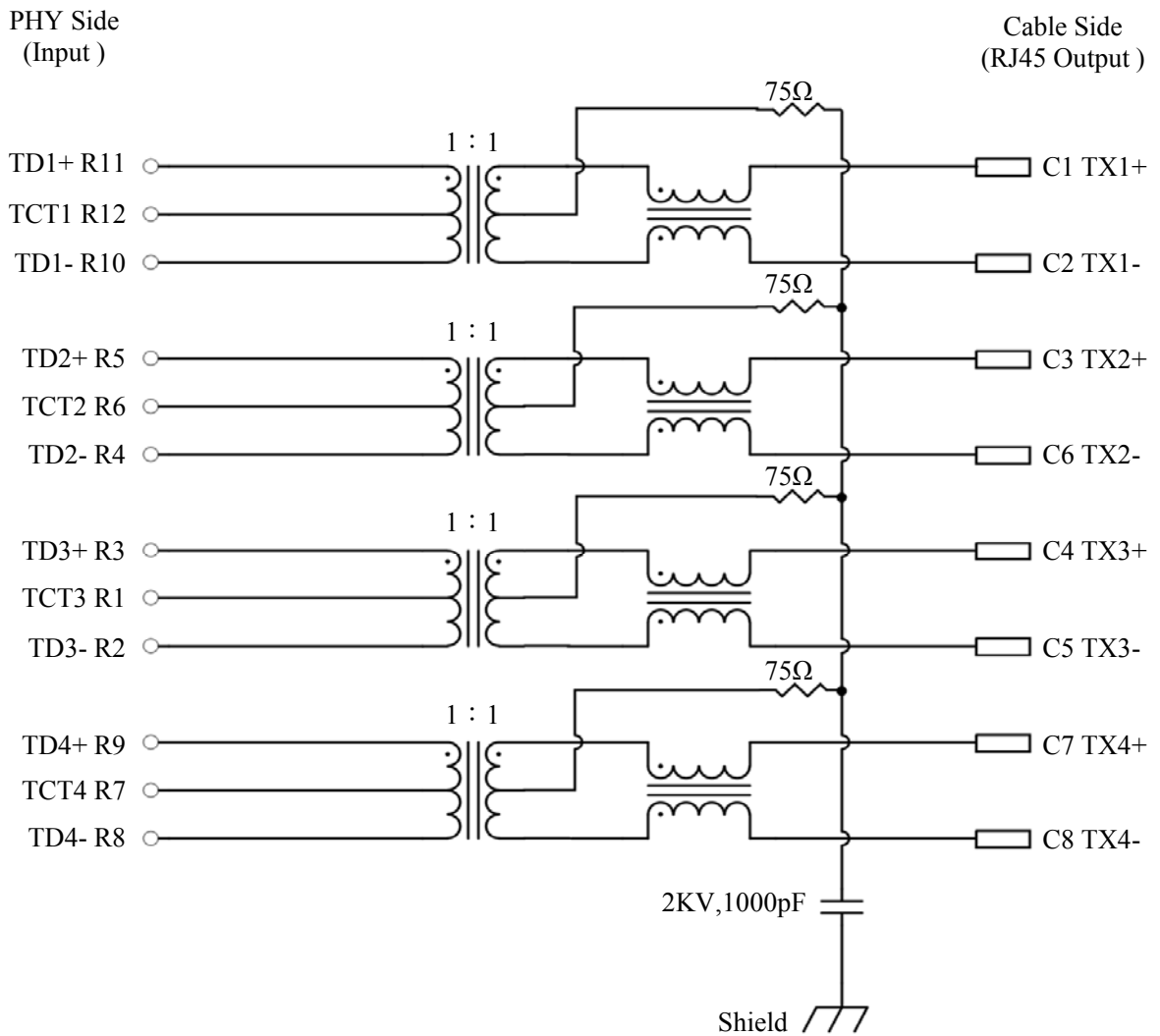
11. USB 3.1 GEN 2 Standard-A Schematic



USB 3.1 GEN 2 Standard-A connector Pin Assignment

Pin Number	Signal Name	Description	Mating Sequence
U1	VBUS	Power	Second
U2	D-	USB 2.0 Differential pair	Third
U3	D+		
U4	GND	Ground for power return	Second
U5	StdA_SSRX-	Super speed receiver differential pair	Last
U6	StdA_SSRX+		
U7	GND_DRAIN	Ground for Signal return	
U8	StdA_SSTX-	Surper speed transmitter differential pair	
U9	StdA_SSTX+		
Shell	Shield	Connector metal shell	First

12. ELECTRICAL CHARACTERISTICS @25°C



Emitting Color	$\lambda_p$ (nm)	$V_f$ @ $I_f=20mA$	$I_r$ @ $V_r=5V$
Yellow	588	1.7 ~2.6 V	10 $\mu$ A max.

## Transmitter filter &amp; Receiver filter

Type : Balance low pass 100Ω impedance

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

Return loss :	1~30MHz	-18dB min.	load 100Ω
	30~60MHz	-16dB min.	load 100Ω
	60~80MHz	-12dB min.	load 100Ω
	80~100MHz	-10dB min.	load 100Ω

## Common Mode Rejection

@1~100 MHz -30dB min.

## Cross Talk

@ 1~100MHz -30dB min.

Inductance (OCL) @ 100KHz, 0.1V, 8mA DC BIAS

Input(TD1+,TD1-); (TD2+,TD2-); (TD3+,TD3-); (TD4+,TD4-) : 350 μH min.

## HiPot Test

PHY Side(input) To Cable Side(output) : 1500Vac 60s or 2250Vdc 60s

### 13. WAVE SOLDERING TEMPERATURE PROFILE

Note :

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

