

Specification

1X9 Form Factor

Duplex SC Receptacle – DSC

Optical Transceivers

1000BASE-SX
 1250Mbit/s



Ordering Information

TSP-DxCH2-C11

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 Voltage/ Temperature
 1 : 3.3V+0°C ~+70°C
 2 : 3.3V- 40°C ~+85°C

Model Name	Voltage	Category	Device type	Interface	SD/LOS	Temperature	Distance
TSP-D1CH2-C11	3.3 V	W/O	VCSEL / PIN	AC / AC	LVTTL	+0 ~ +70°C	550m (Table 1)
TSP-D2CH2-C11		DDMI		Coupling		-40 ~ +85°C	

Media	Wavelength	Fiber Core Dimension	Bandwidth	Fiber Type	Distance
Multi - Mode Fiber	850nm	50 μ m	500 MHz*km	OM2	550m
		50 μ m	400 MHz*km		500m
		62.5 μ m	200 MHz*km	OM1	275m
		62.5 μ m	160 MHz*km		220m

Table 1

Features

- ROHS Compliant
- Standard 1 X 9 Form Factor
- Gigabit Ethernet Standard (IEEE802.3Z 1000BASE - SX) Compliant
- Fibre Channel Standard (100-M5-SN-I and 100-M6-SN-I) Compliant
- Laser Class 1 Product –IEC / EN 60825-1 Compliant
- Standard Duplex SC Receptacle Optical Interface
- Single + 3.3 V Power Supply
- Differential LVPECL Data Input and Output
- LVTTTL Signal Detect
- Low Power Consumption

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit
Storage temperature	T _s	-40	--	85	°C
Supply voltage	VCC	0	--	4	V
Relative Humidity	RH	5	--	95	%
Input voltage	V _{IN}	0	--	VCC	V

Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	VCC	3.1	3.3	3.5	V
Operating Case temperature (TSP-D1CH2-C11)	Top	0	--	70	°C
Operating Case temperature (TSP-D2CH2-C11)		-40	--	85	
Current	Icc	--	--	250	mA
Soldering Temperature (10sec)	Tsold	--	--	260	°C

Transmitter Specifications (V_{CC} = 3.1V~3.5V ; Top = 0 ~ 70°C / Top = -40 ~ 85 °C)

Parameter	Symbol	Min	Typ	Max	Unit
Optical Characteristics					
Output Optical Power	P _O	-9	--	-3	dBm
Extinction Ratio	ER	9	--	--	dB
Center Wavelength	λ	830		860	nm
Spectral Width (RMS)	σλ	--	--	0.85	nm
Rise/Fall time (20-80%)	T _r / T _f	--	--	260	ps
Relative Intensity Noise	RIN	--	--	-117	dB / Hz
Output Eye	Compliant with IEEE 802.3z				
Electrical Characteristics					
Differential Input Voltage	V _{DIFF}	0.4	--	2.0	V

Receiver Specifications ($V_{CC} = 3.1V \sim 3.5V$; $T_{op} = 0 \sim 70^{\circ}C$ / $T_{op} = -40 \sim 85^{\circ}C$)

Parameter	Symbol	Min	Typ	Max	Unit
Optical Characteristics					
Optical Input Power-maximum	P_{max}	0	--	--	dBm
Receiver Sensitivity (PRBS=2 ⁷ -1 ; BER $\leq 10^{-12}$)	Sens	--	--	-18	dBm
Operating Center Wavelength	λ	770	--	860	nm
Signal Detect – Asserted	PSA	--	--	-18	dBm
Signal Detect – De-asserted	PSD	-35	--	--	dBm
Signal Detect – Hysteresis	PSH	0.5	--	6	dB
Electrical Characteristics					
Differential Output Voltage	V_{DIFF}	0.4	--	2.0	V
Signal Detect Output Voltage -Low	V_{SDL}	0	--	0.8	V
Signal Detect Output Voltage -High	V_{SDH}	2	--	$V_{CC}+0.3$	V

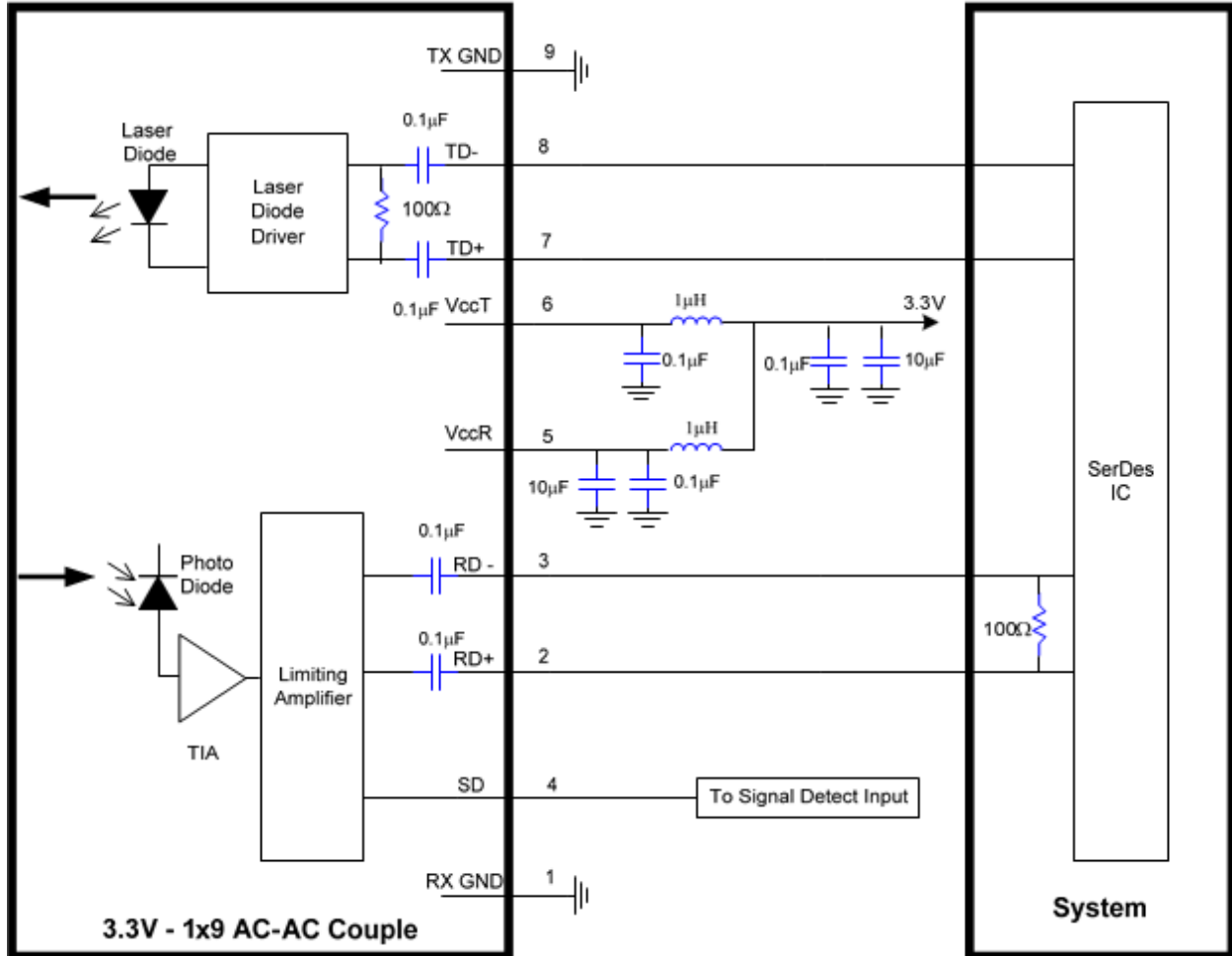
Pin Definition and Descriptions

9. TX GND _r	
8. TD+	N/C
7. TD-	
6. V _{CC} T	
5. V _{CC} R	
4. SD	
3. RD-	
2. RD+	N/C
1. RX GND	

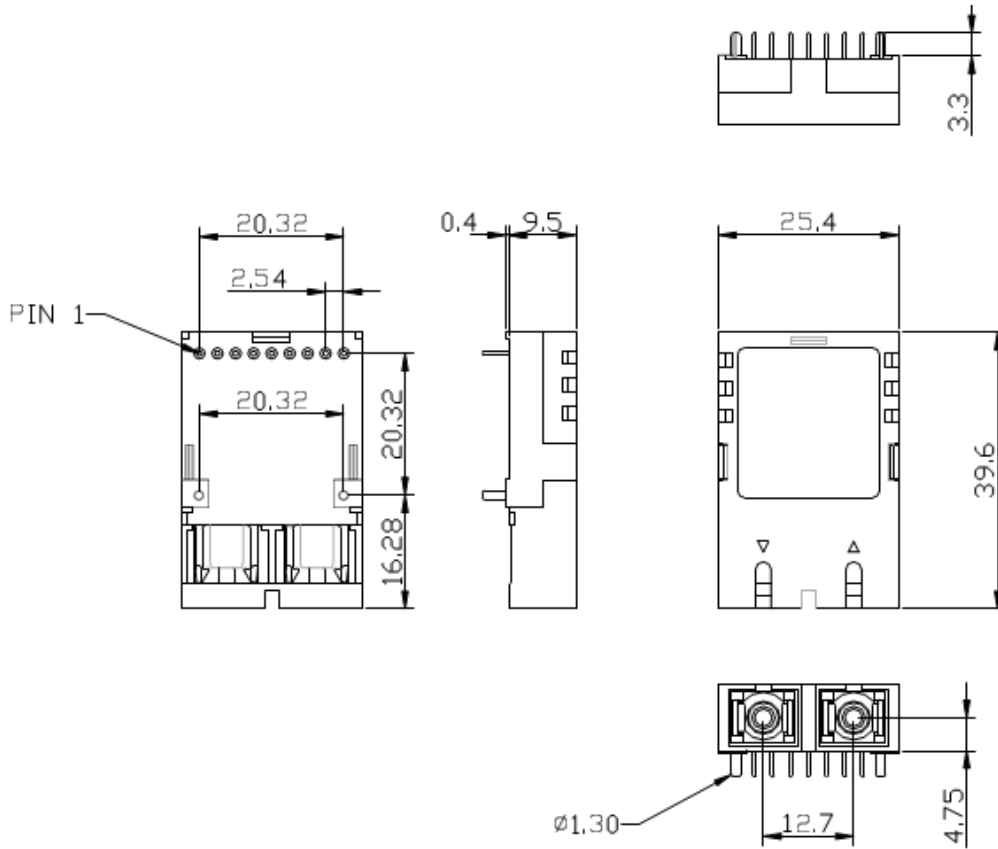
Bottom VIEW

Pin	Name	Description
1	RX GND	Receiver Signal Ground
2	RD+	Receiver Data Out
3	RD-	Receiver Data Out Bar
4	SD	Signal Detect
5	V _{CC} R	Receiver Power Supply
6	V _{CC} T	Transmitter Power Supply
7	TD-	Transmitter Data In Bar
8	TD+	Transmitter Data In
9	TX GND	Transmitter Signal Ground

Recommended Circuit Diagram



Mechanical Outlines (Unit : mm)





ESD

Normal ESD precautions are required during the handling of this module. This transceiver is shipped in ESD protective packaging. It should be removed from the packaging and handled only in an ESD protected environment.

Contact Information

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