

Specification

1X9 Form Factor

Duplex ST Receptacle

Optical Transceivers

STM-1 / OC-3 / 100BASE

155.52Mbit/s



Ordering Information

T S P - D x A N 6 - D 1 T



Voltage / Temperature

1: 3.3V / +0 ~ +70°C

2: 3.3V / -40 ~ +85°C

Model Name	Voltage	Category	Device type	Interface	SD/LOS	Temperature	Distance
TSP-D1AN6-D1T	3.3 V	W / O	LED / PIN	AC / AC	LVTTTL	+0 ~ +70°C	2km
TSP-D2AN6-D1T		DDMI		Coupling		-40 ~ +85°C	

Features

- ROHS Compliant
- Standard 1 X 9 Form Factor
- SONET / SDH Standard Compliant
- Fast Ethernet Standard Compliant
- 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
Operating Relative Humidity	-	5	-	95	%
Input voltage	V _{IN}	0	-	VCC	V

Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	VCC	3.15	3.3	3.45	V
Operating Case temperature (TSP-D1AN6-D1T)	Top	0	-	70	°C
Operating Case temperature (TSP-D2AN6-D1T)		-40	-	85	
Current	I _{cc}	-	-	300	mA
Soldering Temperature (10sec)	T _{sold}	-	-	260	°C

Transmitter Specifications ($V_{CC} = 3.15 \sim 3.45V$; $T_{op} = 0 \sim 70^{\circ}C$ / $T_{op} = -40 \sim 85^{\circ}C$)

Parameter	Symbol	Min	Typ	Max	Unit
Optical Characteristics					
Output Optical Power	P_{out}	-20	--	-14	dBm
Extinction Ratio	ER	10	--	--	dB
Center Wavelength	λ	1260	1310	1360	nm
Spectral Width (RMS)	$\sigma\lambda$	--	--	120	nm
Rise/Fall time (10-90%)	T_r / T_f	--	--	3	ns
Relative Intensity Noise	RIN	--	--	-120	dB/Hz
Output Eye	Compliant with ITU-T G.957				
Electrical Characteristics					
Differential Input Voltage	V_{DIFF}	0.3	--	2.4	V

Receiver Specifications ($V_{CC} = 3.15 \sim 3.45V$; $T_{op} = 0 \sim 70^{\circ}C$ / $T_{op} = -40 \sim 85^{\circ}C$)

Parameter	Symbol	Min	Typ	Max	Unit
Optical Characteristics					
Optical Input Power-maximum	P_{max}	-3	--	--	dBm
Receiver Sensitivity (PRBS=2 ²³ -1 ; BER $\leq 10^{-10}$)	Sens	--	--	-30	dBm
Operating Center Wavelength	λ	1100		1600	nm
Signal Detect – Asserted	PSA	--	--	-28	dBm
Signal Detect – De-asserted	PSD	-47	--	--	dBm
Signal Detect – Hysteresis	PSH	1		5	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

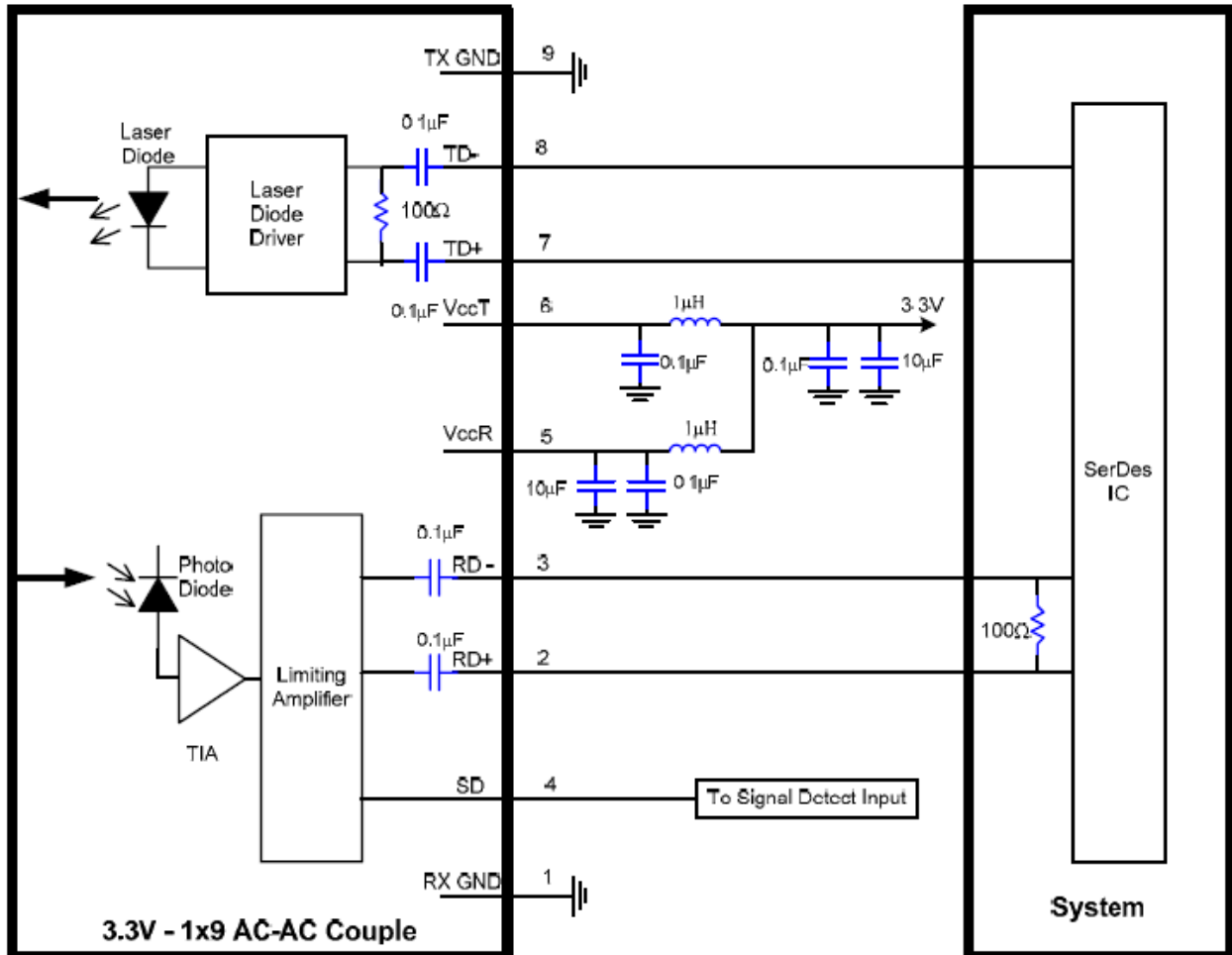
Pin Definition and Descriptions

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	

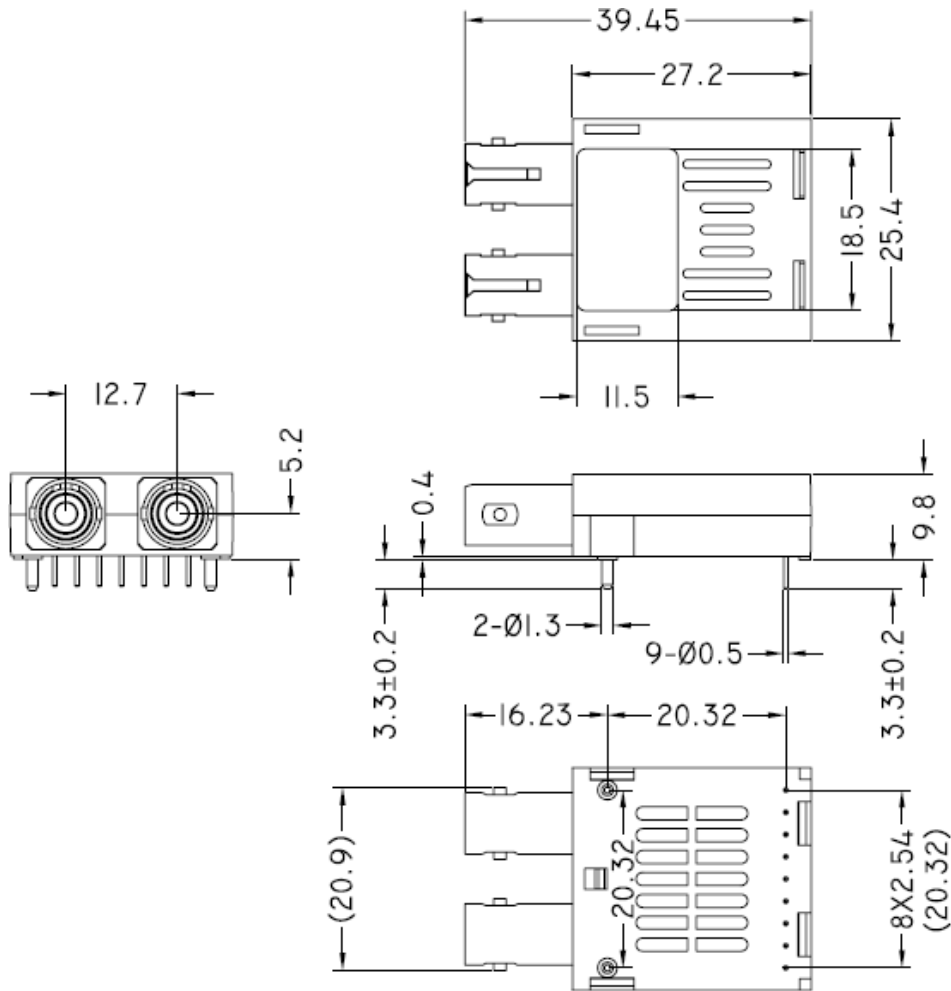
Bottom VIEW

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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