

Specification

1x9 Form Factor
 Duplex ST Receptacle
Optical Transceivers
 STM-1 / OC-3 / 100BASE
 155Mbit/s



Ordering Information

TSP-DxAA6-K2T



Voltage / Temperature

- 1 : 3.3V / +0 ~ +70°C
- 2 : 3.3V / -40 ~ +85°C
- 3 : 5.0V / +0 ~ +70°C
- 4 : 5.0V / -40 ~ +85°C

Model Name	Voltage	Device type	Interface	SD/LOS	Temperature	Distance
TSP-D1AA6-K2T	3.3V	FP / PIN	DC / DC Coupling	PECL	+0 ~+70°C	40Km
TSP-D2AA6-K2T					-40 ~+85°C	
TSP-D3AA6-K2T	5.0V				+0 ~+70°C	
TSP-D4AA6-K2T					-40 ~+85°C	

Features

- SC/FC/ST Duplex Transceiver
- Industry Standard 1x9 Footprint
- Laser wavelength 1310FP
- Single 3.3/5V Power Supply
- LVPECL/PECL Signal Detection Output
- Wave Solderable and Aqueous Washable
- Uncooled Laser Diode with MQW structure
- Complies with Telcordia (Bellcore) GR-468-CORE
- RoHS Compliant

Applications

- ATM 155M Links
- SONET/SDH Equipment Interconnect

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit	Note
Storage Temperature	Ts	-40	85	°C	
Power Supply Voltage	Vcc	0	4.5	V	TSP-D1AA6-K2T TSP-D2AA6-K2T
	Vcc	0	6	V	TSP-D3AA6-K2T TSP-D4AA6-K2T
Soldering Temperature (10 seconds on leads only)	Tsold	--	260	°C	
Input Voltage	Vin	GND	Vcc	V	
Output Current	Iout	0	30	mA	

Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit	Note
Supply Voltage	VCC	3.15	3.3	3.45	V	TSP-D1AA6-K2T TSP-D2AA6-K2T
		4.75	5.0	5.25		TSP-D3AA6-K2T TSP-D4AA6-K2T
Operating Case temperature (TSP-D1AA6-K2T) (TSP-D3AA6-K2T)	Top	0	--	70	°C	
Operating Case temperature (TSP-D2AA6-K2T) (TSP-D4AA6-K2T)		-40	--	85		
Data Rate		--	155	--	Mbps	
Power Supply Current	Icc	--	150	250	mA	

Transmitter Specifications

(VCC = 3.15 ~ 3.45V / VCC = 4.75 ~ 5.25V ; Top = 0 ~ 70°C / Top = -40 ~ 85°C)

Parameter	Symbol	Min	Typ	Max	Unit
Optical Characteristics					
Optical Transmit Power	Po	-9	--	-5	dBm
Optical Center Wavelength	λ	1260	1310	1360	nm
Output Spectrum Width (RMS)	$\sigma\lambda$	--	2	4	nm
Extinction Ratio	ER	10	--	--	dB
Optical Rise Time	Tr	--	1	2	ns
Optical Fall Time	Tf	--	1	2	ns
Relative Intensity Noise	RIN	--	--	-116	dB/Hz
Output Eye	Compliant with ITU-T G.957				

Electrical Characteristics					
Data Input Current – Low		-350	--	--	μA
Data Input Current – High		--	--	350	μA
Differential Input Voltage	VIH -VIL	300	--	2400	mV

Receiver Specifications

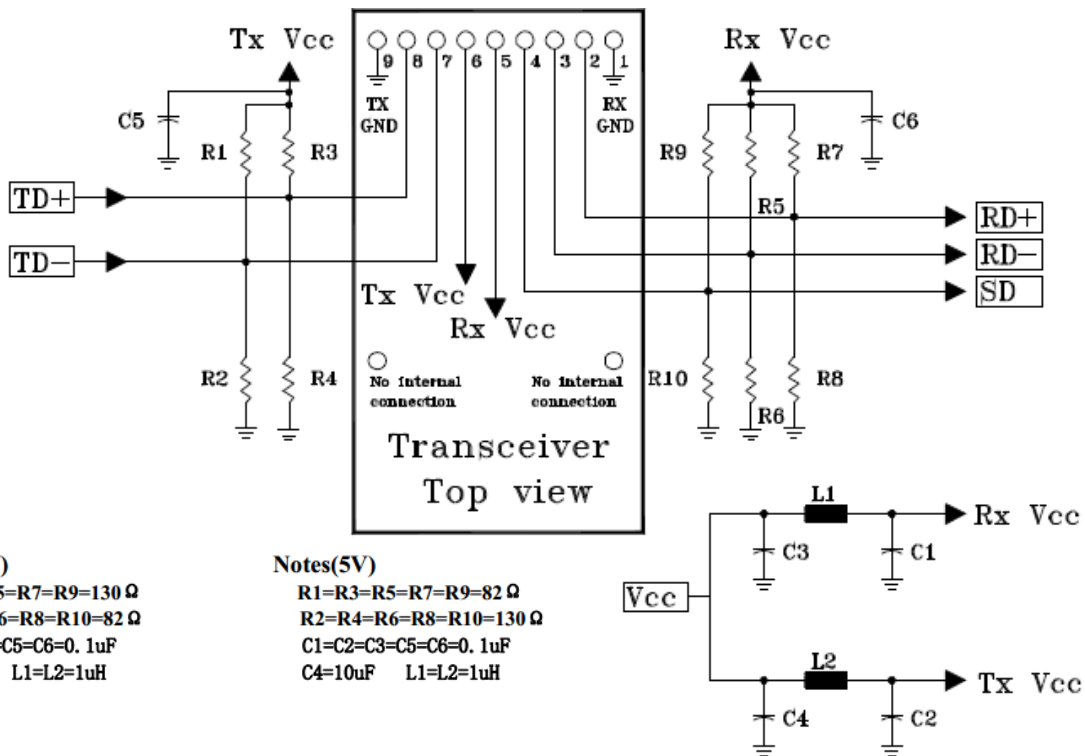
(VCC = 3.15 ~ 3.45V / VCC = 4.75 ~ 5.25V ; Top = 0 ~70°C / Top = -40 ~ 85°C)

Parameter	Symbol	Min	Typ	Max	Unit
Optical Characteristics					
Sensitivity	Sens	--	--	-36	dBm
Saturation Power (PRBS=2 ⁷ -1 ; BER ≤ 10 ⁻¹²)	P _{MAX}	-3	--	--	dBm
Operating Center Wavelength	λ	1100	--	1600	nm
Signal Detect – Asserted	P _{SA}	--	--	-36	dBm
Signal Detect – De-asserted	P _{SD}	-45	--	--	dBm
Signal Detect - Hysteresis	P _{SH}	1	--	5	dB
Electrical Characteristics					
Data Output Voltage – Low	VIL –VCC	-1830	--	-1555	mV
Data Output Voltage – High	VIH –VCC	-1085	--	-880	mV
Signal Detect Output Voltage-- Low	VSDL –VCC	-2.0	--	-1.58	V
Signal Detect Output Voltage-- High	VSDH –VCC	-1.1	--	-0.74	V

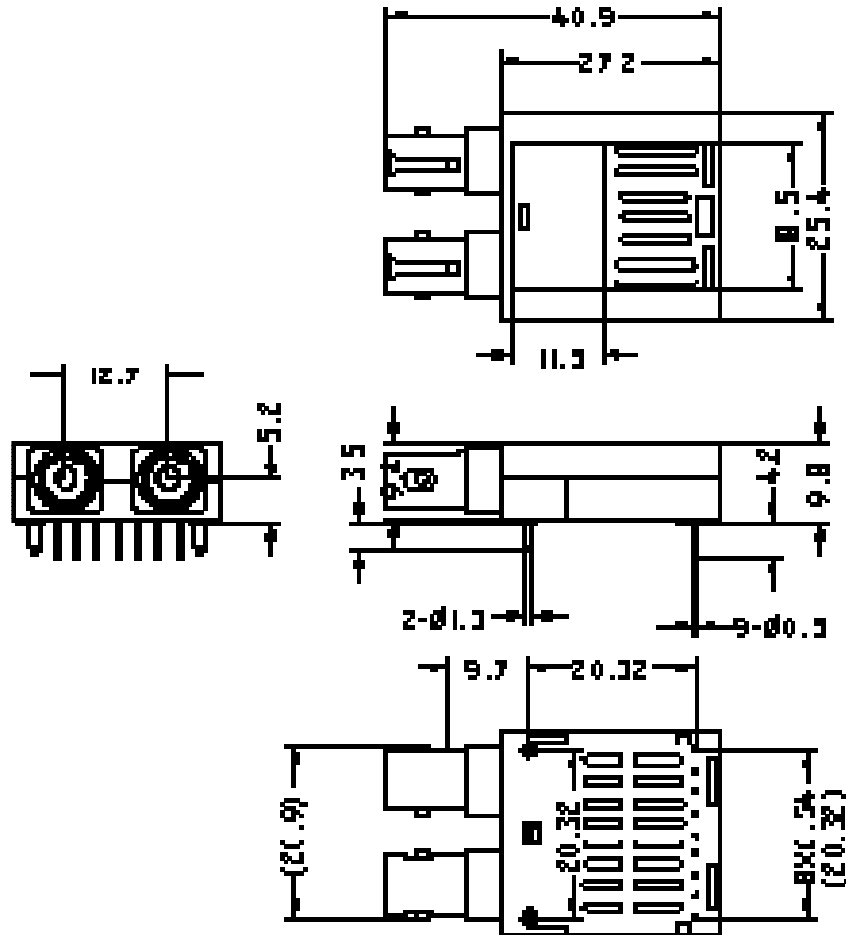
Pin Definition and Descriptions

1 Receiver Signal Ground	
2 Receiver Data Out	O N.C.
3 Receiver Data Out Bar	
4 Signal Detect	
5 Receiver Power Supply	Top View
6 Transmitter Power Supply	
7 Transmitter Data In Bar	
8 Transmitter Data In	O N.C.
9 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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