Features

- Transceiver unit with independent
  - 1310nm FP Laser diode transmitter
  - InGaAs PIN photodiode receiver
- Duplex SC connector ,1×9 pin package and plastic package
- +5V or +3.3V Single power supply, PECL or LVPECL interface logic level
- Operates data rates 155Mb/s(NRZ)
- Class I laser product compiles with IEC 60825-1
- Complies with Telcordia GR-468-CORE
- Compliant ROHS and lead free
- Operating case temperature:
  Standard：0 to +70℃
  Industrial：-40 to +85℃

Performance Specifications

Table1. Absolute Maximum Ratings

Parameter	Symbol		Min	Max	Unit
Storage Temperature	Tst		-40	+85	℃
Input Voltage	-		GND	Vcc	V
Power Supply Voltage	Vcc-Vee	CS513F3-2*-13	0	+6	V
		CS313F3-2*-13	0	+3.6	
Lead Soldering Temperature/Time	-		-	240/10	℃/S
Operating Temperature	To	CS*13F3-21-13	0	+70	℃
		CS*13F3-22-13	-40	+85	

Note: Stress in excess of maximum absolute ratings can cause permanent damage to the module

Table2. Operating Environment

Parameter	Symbol		Min	Max	Unit
Power Supply Voltage	Vcc	CS513F3-2*-13	+4.75	+5.25	V
		CS313F3-2*-13	+3.1	+3.5	
Ambient Operating Temperature	TA	CS*13F3-21-13	0	+70	℃
		CS*13F3-22-13	-40	+85	

Table3. Optical and Electrical Characteristics

(T=25℃,5V:Vcc=+4.75~+5.25V,3.3V:Vcc=+3.1~+3.5V Input and output PECL or LVPECL signal)

Parameter	Symbol	Min	Typ	Max	Unit	Note
Transmitter						
Center Wavelength	λ_p	1260	1310	1360	nm	-
Spectral Width	$\Delta\lambda$ (RMS)	-	-	3	nm	-
Average Optical Output Power	Po	-5	-	0	dBm	-
Extinction Ratio	EXT	10	-	-	dB	-
Power Supply Current	Icc	-	70	180	mA	-
Output Eye	Compliant with ITU recommendation G.957					
Data InputS	PECL/LVPECL					
Receiver						
Parameter	Symbol	Min	Typ	Max	Unit	Note
Sensitivity	Pr	-	-	-34	dBm	2
Maximum input power	Ps	-3	-	-	dBm	2
Signal Detect Assert Level	Pa(SD H-L)	-50	-	-	dBm	Low-level: Alarm
Signal Detect Deassert Level	Pd(SD L-H)	-	-	-34	dBm	
Signal Detect Hysteresis		-	3	-	dB	
Operating Current	Icc	-	80	100	mA	1
Data Outputs	PECL/LVPECL					
Alarm Output	PECL/LVPECL					

PECL Or LVPECL Input Pins TD+ and TD-

Parameter	Symbol	Min	Typ	Max	Unit	Note
Input HIGH voltage	V_{IH}	VCC – 1165	-	VCC - 880	mV	3
Input LOW voltage	V_{IL}	VCC - 1810	-	VCC – 1475	mV	3

PECL Or LVPECL Output Pins SD, RD+ and RD-

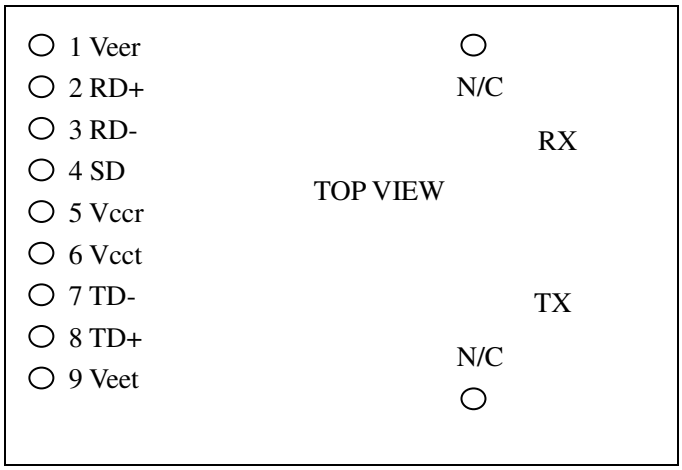
Parameter	Symbol	Min	Typ	Max	Unit	Note
LOW-level output voltage	V_{OL}	VCC – 1840	-	VCC - 1600	mV	3
HIGH-level output voltage	V_{OH}	VCC - 1100	-	VCC – 900	mV	3

Note :

1. **The current excludes the output load current.**
2. **Minimum Sensitivity and saturation levels for a $2^{23}-1$ PRBS with 72 ones and 72 zeros inserted**
3. **RL=50R connected to a level of Vcc –2V.**

Pin Definitions

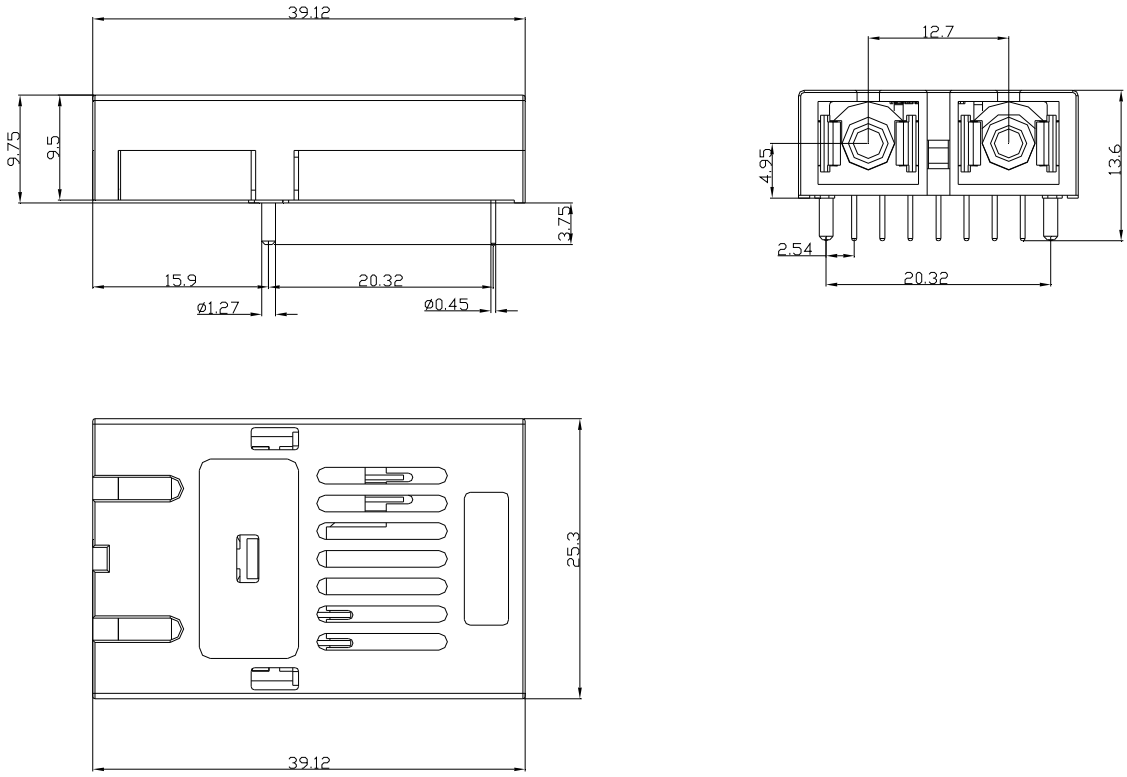
Pin Out Diagram



Pin Description

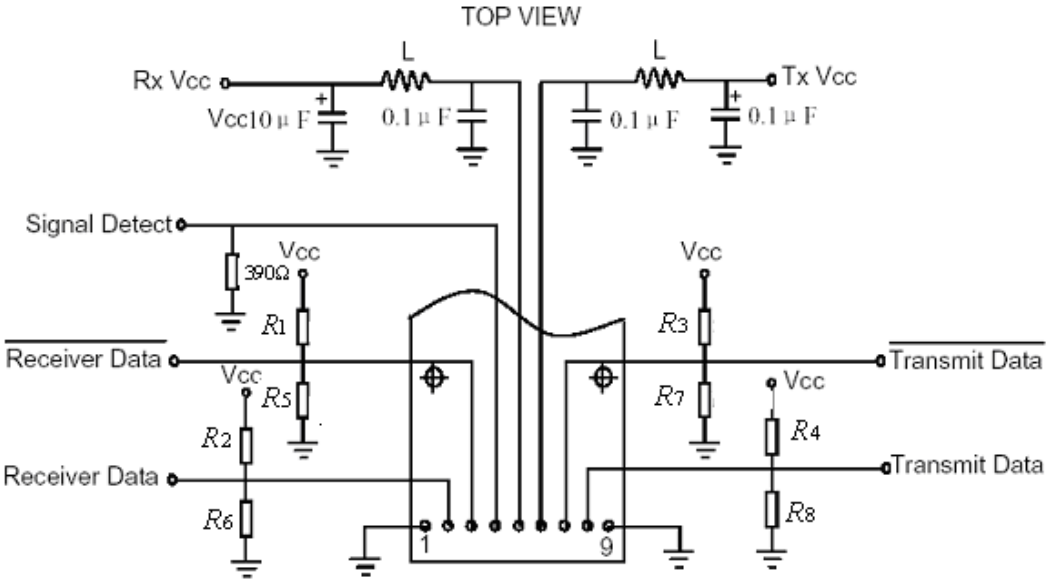
Pin#	Pin Name		Logic Level	Description
N/C	Mounting Studs			The two pins are not connected to the transceiver internal circuit.
1	VEER	RX Ground	N/C	Directly connect this pin to receiver signal ground plane.
2	RD+	RX Output Data	PECL/LVPECL	
3	RD-	RX Output Invert Data	PECL/LVPECL	
4	SD	RX Signal Detect	PECL/LVPECL	Normal Operation: Logic "1" Out put , represents that optical is present at receiver input. Fault Condition: Logic "0" output
5	VCCR	RX Power Supply	N/C	Provide +5V/+3.3V DC through the recommended power supply filter circuit. Place the filter circuit as close as possible to the VCCR pin.
3V 6	VCCT	TX Power Supply	N/C	Provide +5V/+3.3V DC through the recommended power supply filter circuit. Place the filter circuit as close as possible to the VCCT pin
7	TD-	TX Invert Data Input	PECL/LVPECL	
8	TD+	TX Data Input	PECL/LVPECL	
9	VEET	TX Ground	N/C	Directly connect this pin to transmitter signal ground plane.

Package Information



Unit: mm

Recommended Circuit



For: *Vcc=5V* - , $R1 = R2 = R3 = R4 = 82\Omega, R5 = R6 = R7 = R8 = 130\Omega$

Vcc=3.3V , $R1 = R2 = R3 = R4 = 130\Omega, R5 = R6 = R7 = R8 = 82\Omega$

For More Information

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Ordering Information