

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 up to 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°C
 - Industrial : -40 to +85°C

Performance Specifications

Table1. Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit	
Storage Temperature	Tst	-40	+85	°C	
Input Voltage	-	GND	Vcc	V	
Power Supply Voltage	Vcc-Vee	CM513F3-1*-13	0	+6	V
		CM313F3-1*-13	0	+3.6	
Lead Soldering Temperature/Time	-	-	240/10	°C/S	
Operating Temperature	To	CM*13F3-11-13	0	+70	°C
		CM*13F3-12-13	-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	CM513F3-1*-13	+4.75	+5.25	V
		CM313F3-1*-13	+3.1	+3.5	
Ambient Operating Temperature	TA	CM*13F3-11-13	0	+70	°C
		CM*13F3-12-13	-40	+85	

Table3. Optical and Electrical Characteristics(T=25°C, 5V: V_{cc}=+4.75~+5.25V, 3.3V: V_{cc}=+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	P _o	-15	-	-8	dBm	-
Extinction Ratio	EXT	10	-	-	dB	-
Power Supply Current	I _{cc}	-	70	180	mA	-
Output Eye	Compliant with ITU recommendation G.957					
Data InputS	PECL/LVPECL					
Receiver						
Parameter	Symbol	Min	Typ	Max	Unit	Note
Sensitivity	P _r	-	-	-28	dBm	2
Maximum input power	P _s	-3	-	-	dBm	2
Signal Detect Assert Level	P _a (SD H-L)	-50	-	-	dBm	Low-level: Alarm
Signal Detect Deassert Level	P _d (SD L-H)	-	-	-34	dBm	
Signal Detect Hysteresis		-	3	-	dB	
Operating Current	I _{cc}	-	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}	V _{CC} - 1165	-	V _{CC} - 880	mV	3
Input LOW voltage	V _{IL}	V _{CC} - 1810	-	V _{CC} - 1475	mV	3

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

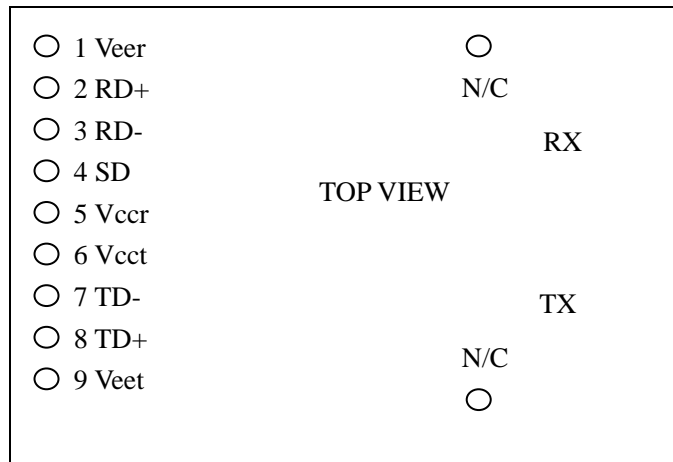
Parameter	Symbol	Min	Typ	Max	Unit	Note
LOW-level output voltage	V _{OL}	V _{CC} - 1840	-	V _{CC} - 1600	mV	3
HIGH-level output voltage	V _{OH}	V _{CC} - 1100	-	V _{CC} - 900	mV	3

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. R_L=50R connected to a level of V_{cc} -2V.

Pin Definitions

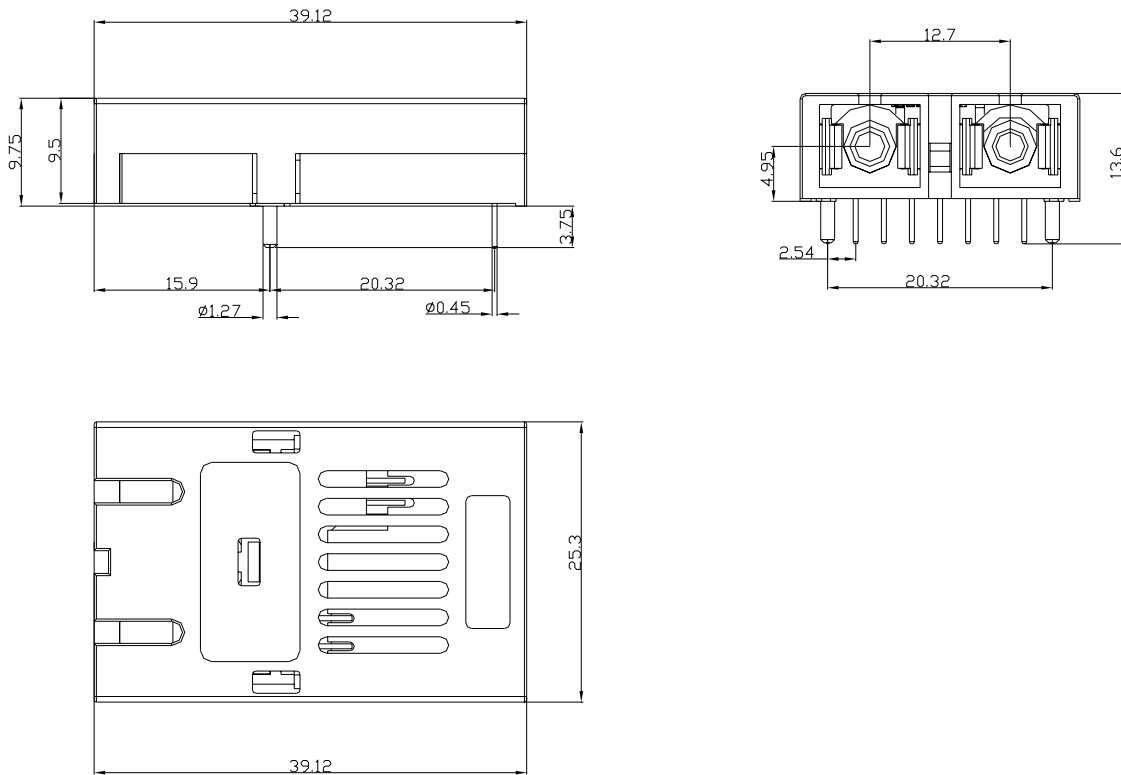
Pin Out Diagram



Pin Description

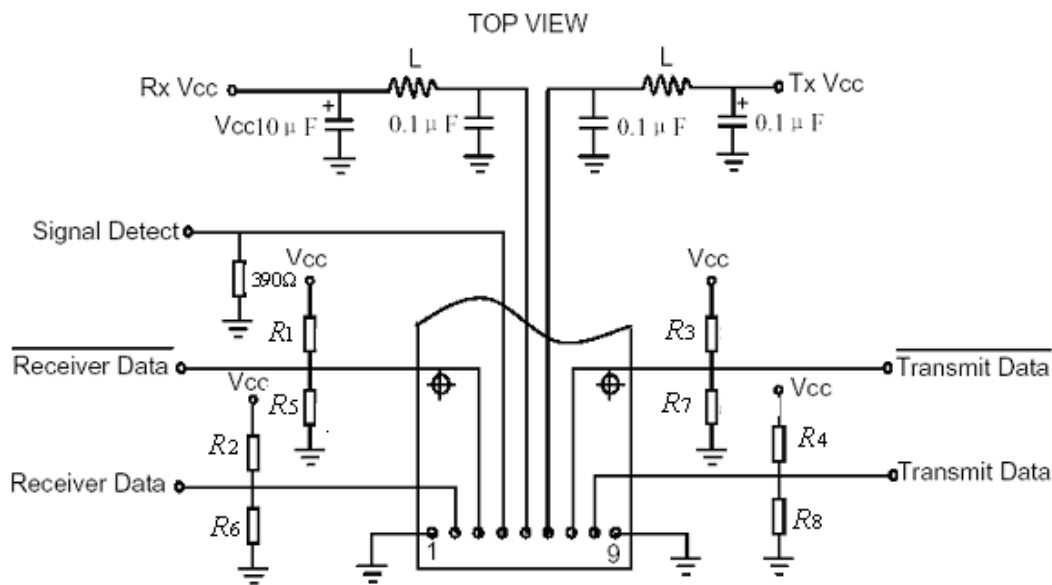
Pin#	Pin Name		Logic Level	Description
N/C	Mounting Studs			The two pins are not connected to the transceiver internal circuit.
1	VEER	RX Ground	N/C	Directly connect this pin to receiver signal ground plane.
2	RD+	RX Output Data	PECL/LVPECL	
3	RD-	RX Output Invert Data	PECL/LVPECL	
4	SD	RX Signal Detect	PECL/LVPECL	Normal Operation: Logic "1" Output , 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 : $V_{cc}=5V$, $R_1 = R_2 = R_3 = R_4 = 82\Omega$, $R_5 = R_6 = R_7 = R_8 = 130\Omega$
 $V_{cc}=3.3V$, $R_1 = R_2 = R_3 = R_4 = 130\Omega$, $R_5 = R_6 = R_7 = R_8 = 82\Omega$

For More Information

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Ordering Information

