

Features

- Transceiver unit with independent
 - 1550nm DFB Laser diode transmitter
 - InGaAs PIN photodiode receiver
- Duplex SC receptacle and plastic package
- +5V or 3.3V Single power supply, PECL or LVPECL interface logic level
- Operates data rates from 5Mb/s to 200Mb/s (NRZ)
- PECL or LVPECL logic interface simplifies interface to external circuitry
- Wave solderable and washable with process plug inserted
- Operating case temperature:
 - Standard : 0 to +70°C
 - Industrial : -40 to +85°C
- Compliant ROHS and lead free

Application

- SONET
- ATM
- CCTV

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	CS515D3-2*-13	0	+6.0	V
		CS315D3-2*-13	0	+3.6	
Lead Soldering Temperature/Time	-		-	240/10	°C/S
Operating Temperature	To	CS*15D3-21-13	0	+70	°C
		CS*15D3-22-13	-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	CS515D3-2*-13	+4.75	+5.25	V
		CS315D3-2*-13	+3.1	+3.5	
Ambient Operating Temperature	TA	CS*15D3-21-13	0	+70	°C
		CS*15D3-22-13	-40	+85	

Table3. Optical and Electrical Characteristics

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

Parameter	Symbol	Min	Typ	Max	Unit	Note
Transmitter						
Center Wavelength	λ_p	1520	1550	1580	nm	-
Spectral Width (-20dB)	$\Delta\lambda$	-	-	1	nm	-
Average Optical Output Power	Po	-5	-	0	dBm	-
Side mode suppression ratio	SMSR	30	-	-	dB	-
Extinction Ratio	EXT	10	-	-	dB	-
Rise and fall time (20%~80%)	Tr, tf	-	-	2	ns	-
Power Supply Current	Icc	-	70	180	mA	1
Output Eye	Compliant with ITU recommendation.G957					
Data Inputs	PECL/LVPECL					
Receiver						
Parameter	Symbol	Min	Typ	Max	Unit	Note
Sensitivity	Pr	-	-	-36	dBm	2
Maximum input power	Ps	-3	-	-	dBm	2
Signal Detect Assert Level	-	-50	-	-	dBm	Low Level: Alarm
Signal Detect Deassert Level	-	-	-	-36	dBm	
Signal Detect Hysteresis	-	-	3	-	dB	
Power Supply 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-

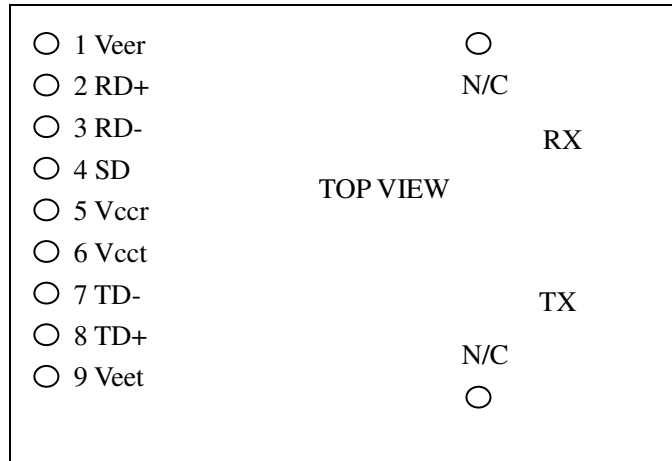
Parameter	Symbol	Min	Typ	Max	Unit	Note
LOW-level output voltage	V _{OL}	VCC - 1840	-	VCC - 1600	mV	3
HIGH-level output voltage	V _{OH}	VCC - 1100	-	VCC - 900	mV	3

Note:

1. The current excludes the output load current.
2. Minimum Sensitivity and saturation levels for a 2²³-1 PRBS with 72 ones and 72 zeros inserted (ITU recommendation G958)
3. RL=50 R (Ohms) connected to a level of VCC-2V

Pin Definitions

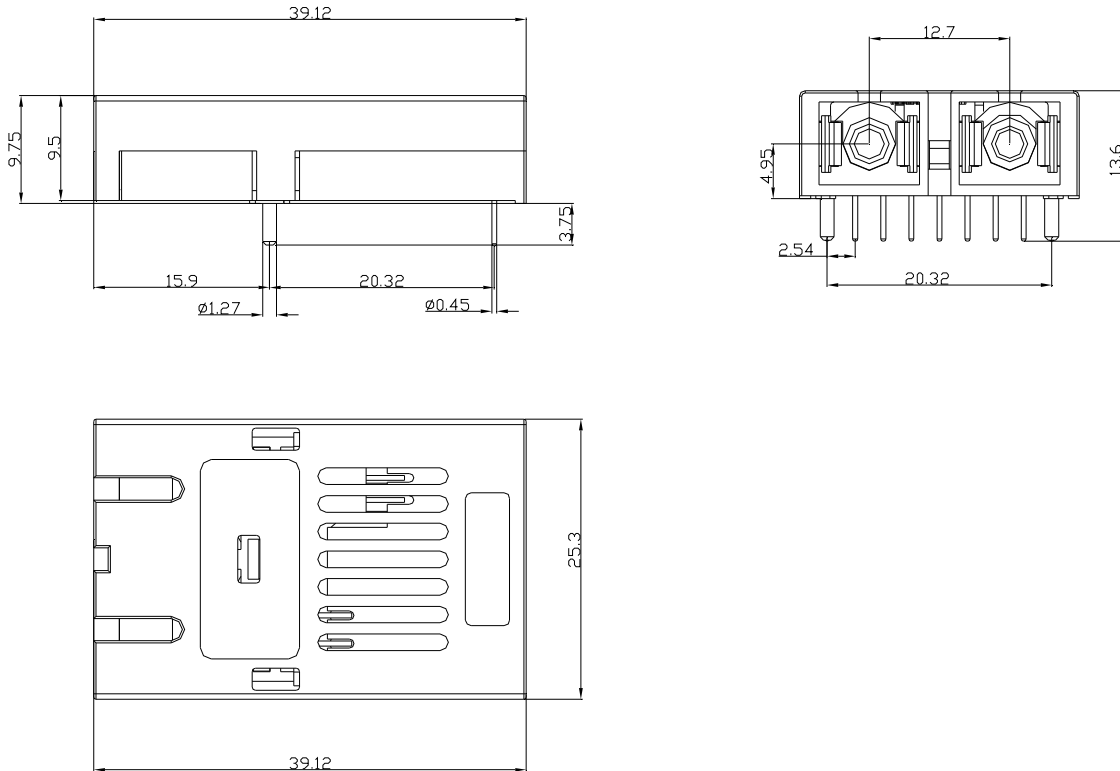
Pin Diagram



Pin Description

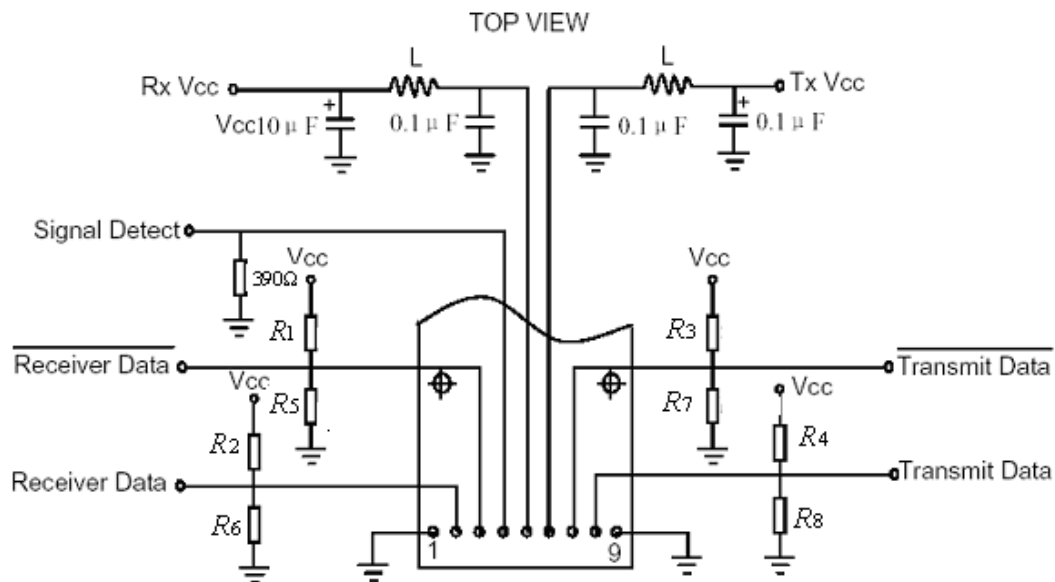
Pin#	Pin Name		Logic Level	Description
N/C	Mounting Studs		-	The two pins are not connected to the transceiver internal circuit.
1	VEER	RX Ground	N/C	Directly connect this pin to receiver signal ground plane.
2	RD+	RX Output Data	PECL/LVPECL	
3	RD-	RX Output Inverted Data	PECL/LVPECL	
4	SD	RX Signal Detect	PECL/LPECL	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.
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

