Features

- Transceiver unit with independent
  - 1550nm DFB Laser diode transmitter
  - InGaAs PIN photodiode receiver
- Duplex ST connector ,1×9 pin package and plastic package
- +5V or +3.3V Single power supply, PECL or LVPECL interface logic level
- Operates data rates 1250Mb/s(NRZ)
- Class I laser product compiles with IEC 60825-1
- Complies with Telcordia GR-468-CORE
- Operating case temperature:
  Standard : 0 to +70℃
  Industrial : -40 to +85℃
- Compliant ROHS and lead free

Application

- SONET/SDH
- ATM
- Ethernet

Performance Specifications

Table1. Absolute Maximum Ratings

Parameter	Symbol		Min	Max	Unit
Storage Temperature	Tst		-40	+85	℃
Input Voltage	Vin		GND	Vcc	V
Power Supply Voltage	Vcc-Vee	CS515D5-1*-16	0	+6.0	V
		CS315D5-1*-16	0	+3.6	
Lead Soldering Temperature/Time	-		-	260/10	℃/S

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	CS515D5-1*-16	+4.75	+5.25	V
		CS315D5-1*-16	+3.1	+3.5	
Ambient Operating Temperature	TA	CS*15D5-11-16	0	+70	℃
		CS*15D5-12-16	-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	1520	1550	1580	nm	-
Spectral Width	$\Delta\lambda$(-20dB)	-	-	1	nm	-
Output Power	Po	-10	-	-3	dBm	-
Extinction Ratio	Er	8.2	-	-	dB	-
Side Mode Suppression Ratio	SMSR	30	-	-	dB	-
Power Supply Current	Icc	-	70	180	mA	1
Output Eye	Compliant with IEEE802.3Z					
Data Inputs	PECL/LVPECL					
Receiver						
Parameter	Symbol	Min	Typ	Max	Unit	Note
Sensitivity	Pr	-	-	-22	dBm	2
Maximum Input Power	Ps	-3	-	-	dBm	2
Signal Detect Assert Level	Pa(SD H-L)	-35	-	-	dBm	Low-level: Alarm
Signal Detect Deassert Level	Pd(SD L-H)	-	-	-22	dBm	
Signal Detect Hysteresis	-	-	2	-	dB	
Operating Current	Icc	-	80	180	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-

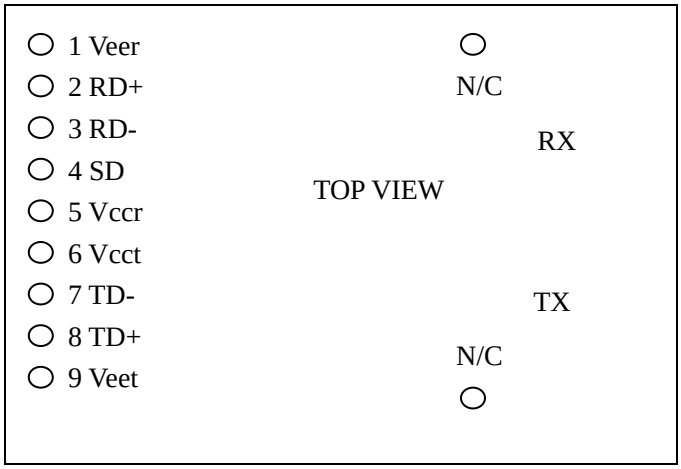
Parameter	Symbol	Min	Typ	Max	Unit	Note
Low-level Output Voltage	V_{OL}	VCC – 1840	-	VCC - 1600	mV	3
High-level Output Voltage	V_{OH}	VCC - 1100	-	VCC – 900	mV	3

Note:

1. **The current excludes the output load current.**
2. **Minimum Sensitivity and saturation levels for a 2^7-1 PRBS test pattern@ 1.25Gb/s.**
3. **RL=50 R (Ohms) connected to a level of VCC-2V**

Pin Definitions

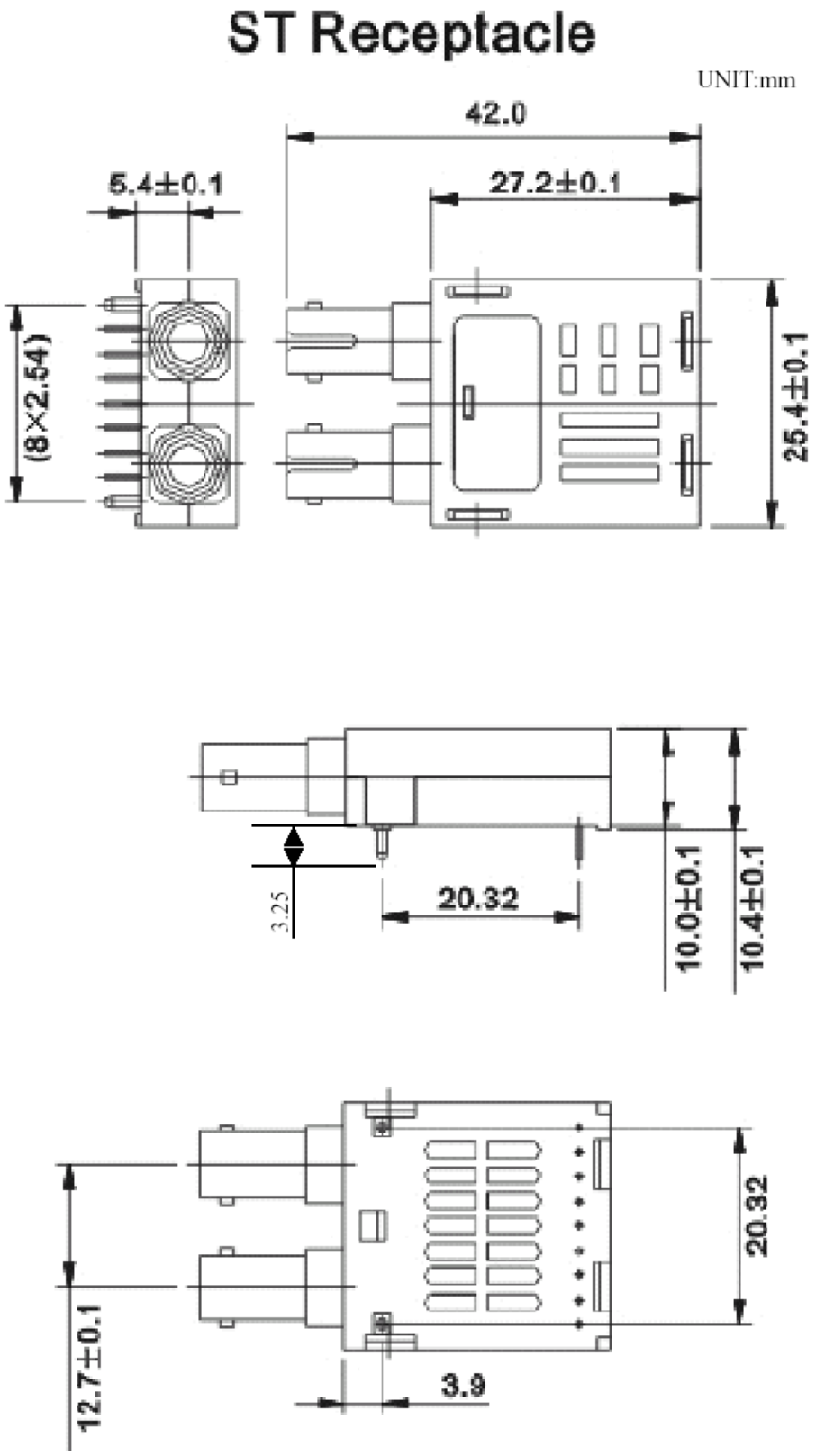
Pin Diagram



Pin Description

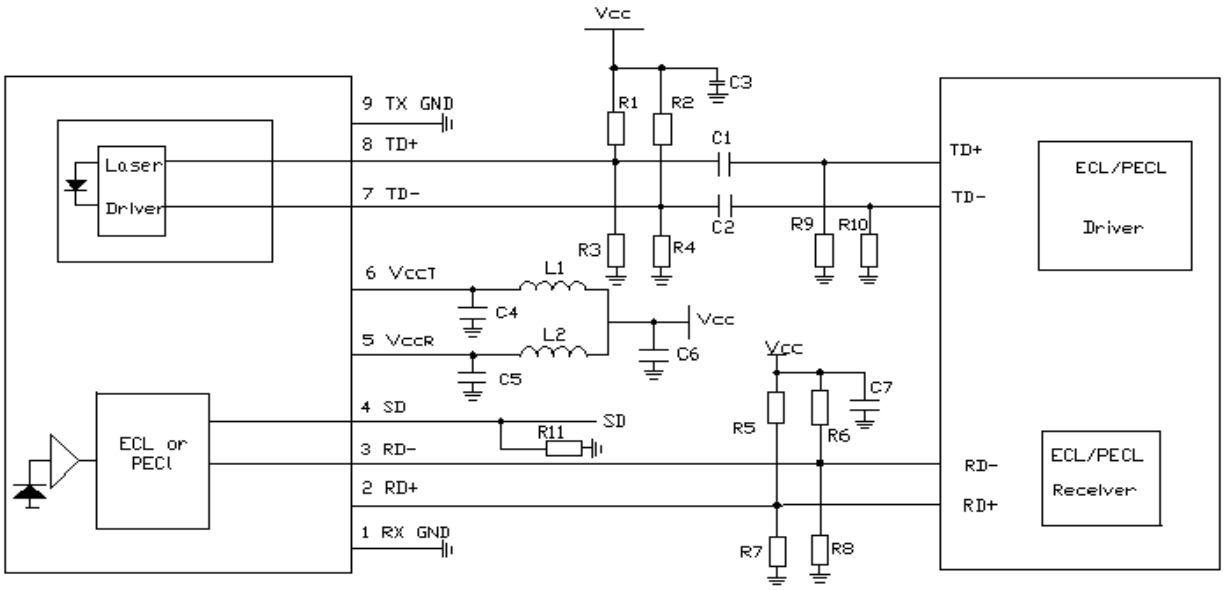
Pin#	Pin Name		Logic Level	Description
N/C	Mounting Studs		-	The two pins are not connected to the transceiver internal circuit.
1	VEER	RX Ground	N/C	Directly connect this pin to receiver signal ground plane.
2	RD+	RX Output Data	PECL/LVPECL	
3	RD-	RX Output Inverted Data	PECL/LVPECL	
4	SD	RX Signal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



SD:PECL

C1=C2=C3=C4=C5=C7=0.1uF C6=4.7uF L1=L2=1uH

Vcc=3.3V : R1=R2=R5=R6=82Ω R3=R4=R7=R8=130Ω R9=R10=R11=180Ω

Vcc=5V : R1=R2=R5=R6=68Ω R3=R4=R7=R8=180Ω R9=R10=R11=300Ω

For More Information

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Ordering Information