

Features

- Transceiver unit with independent
 - 1550nm DFB Laser diode transmitter
 - InGaAs PIN photodiode receiver
- Multisourced 2×5 package style with duplex LC receptacle
- Metal enclosure for lower EMI
- +3.3V Single power supply
- Operates data rates from 5Mb/s to 1270Mb/S (NRZ)
- Qualified to meet the intent of Bellcore 468 reliability practices
- LVPECL logic interface simplifiers interface to external circuitry
- LVTTTL logic Signal detect output
- Links of 60km with 9/125 μ m signal mode fiber (SMF)

Application

- HIGH speed links for Gigabit Ethernet
- Gigabit Ethernet 1000BASE-LX
- Routers
- Switches
- Hubs

General

The optical transceiver is a high performance, cost effective module for serial optical data communication application.

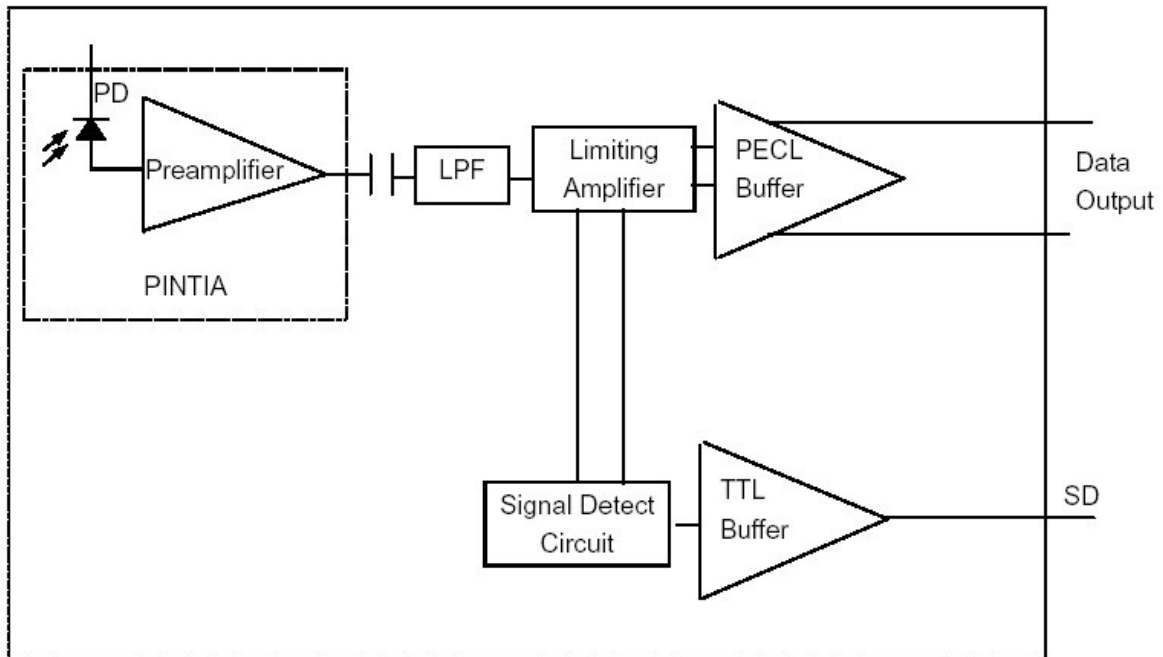


Figure 2. Receiver Block Diagram

Performance Specifications

Stresses in excess of the absolute maximum ratings can cause catastrophic damage to the device, all parameters having values within the recommended operating conditions.

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	0	+3.6	V
Lead Soldering Temperature/Time	-	-	260/10	°C/S
Operating Temperature	To	0	+70	°C

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

Table 2. Operating Environment

Parameter	Symbol	Min	Max	Unit
Power Supply Voltage	Vcc	+3.1	+3.5	V
Ambient Operating Temperature	Tc	0	+70	°C

Table 3. Optical and Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Note
Transmitter						
Center Wavelength	λ_p	1480	1550	1580	nm	-
Spectral Width	$\Delta\lambda$	-	-	1	nm	-
Side Mode Suppression Ratio	SMSR	30	-	-	dB	-
Average Optical Output Power	Po	-3	-	+2	dBm	-
Extinction Ratio	EXT	8.2	-	-	Db	-
Transmitter disable Voltage	V _D	2.0	-	V _{CC}	V	-
Transmitter Enable Voltage	V _{EN}	0	-	0.8	V	-
Data Input HIGH Voltage	V _{IH}	VCC-1165	-	VCC-880	Mv	3
Data Input LOW Voltage	V _{IL}	VCC-1810	-	VCC-1475	Mv	3
Power Supply Current	I _{CC}	-	70	180	Ma	1
Optical Rise/Fall Time	Tr/TF			0.26	ns	
Receiver Specifications						
Parameter	Symbol	Min	Typ	Max	Unit	Note
Operate wavelength	λ	1260		1580	nm	
Sensitivity	Pr	-	-25	-23	dBm	2
Maximum input power	Ps	-3	-	-	dBm	2
Signal Detect Assert Level	-	-	-	-23	dBm	Low
Signal Detect Deassert Level	-	-35	-	-	dBm	Level:
Signal Detect Hysteresis		-	1.5	-	dB	Alarm
Data Outputs	LVPECL					
Alarm Output	LVTTTL					

LVPECL Output Pins RD+ and RD-

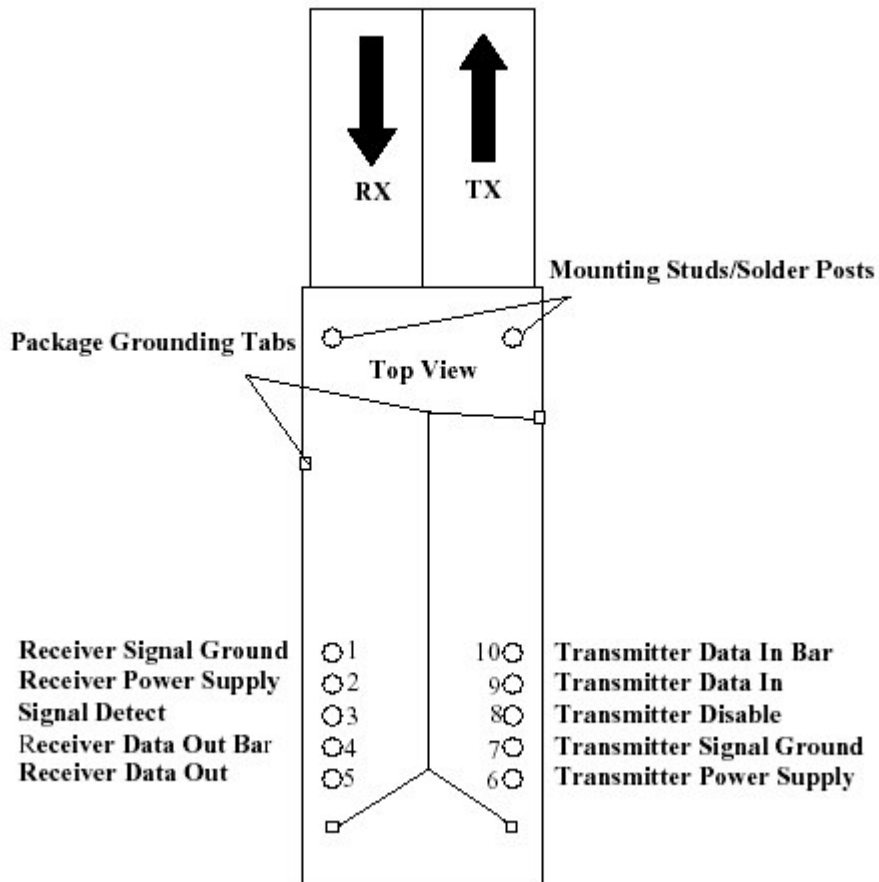
Parameter	Symbol	Min	Typ	Max	Unit	Note
LOW-level output voltage	V _{OL}	VCC - 1840	-	VCC - 1600	mV	3
HIGH-level output voltage	V _{OH}	VCC - 1100	-	VCC - 900	mV	3

Note :

- The current excludes the output load current.**
- Minimum Sensitivity and saturation levels for a $2^{23} - 1$ PRBS with 72 ones and 72 zeros inserted (ITU recommendation G958)**
- RL=50R connected to a level of Vcc -2V.**

Pin Definitions

Pin Out Diagram



Pin Description

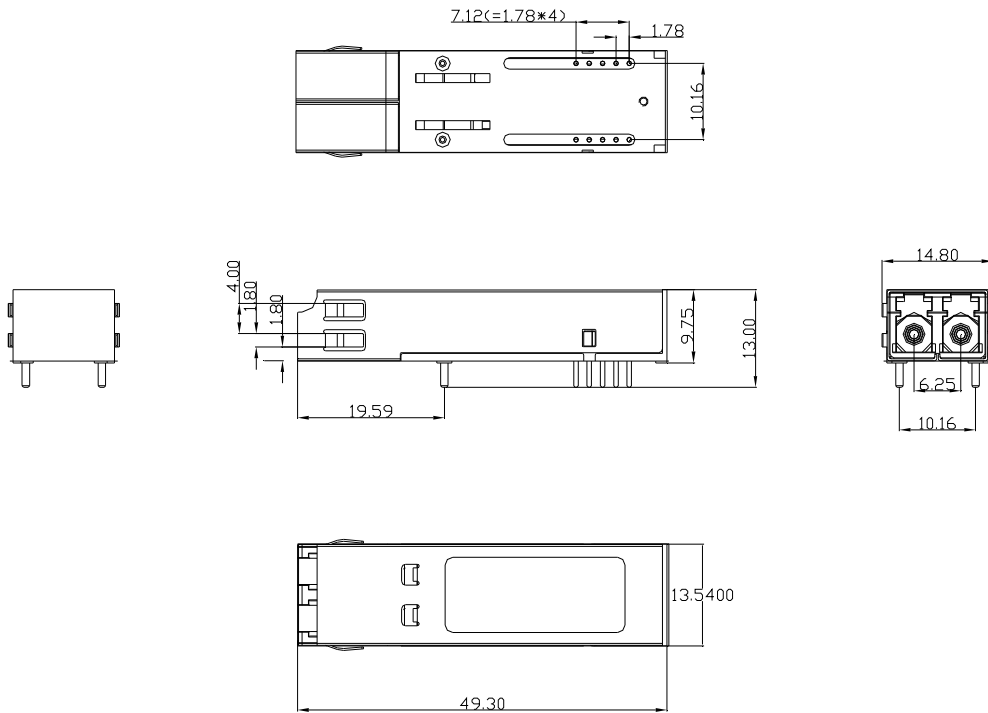
Pin#	Name	Function	Notes
		Mounting Studs/Solder Poster	Note 1
		Package Grounding Tabs	Note 2
1	VEER	Receiver Signal Grounding	Note 3
2	VCCR	Receiver Power Supply	Note 4
3	SD	Signal Detect	Note 5
4	RD-	Receiver Data Out Bar	Note 6
5	RD+	Receiver Data Out	Note 6
6	VCCT	Transmitter Power Supply	Note 7
7	VEET	Transmitter Signal Ground	Note 8
8	TxDis	Transmitter Disable	Note 9
9	TD+	Transmitter Data In	Note 10
10	TD-	Transmitter Data In Bar	Note 10

Note:

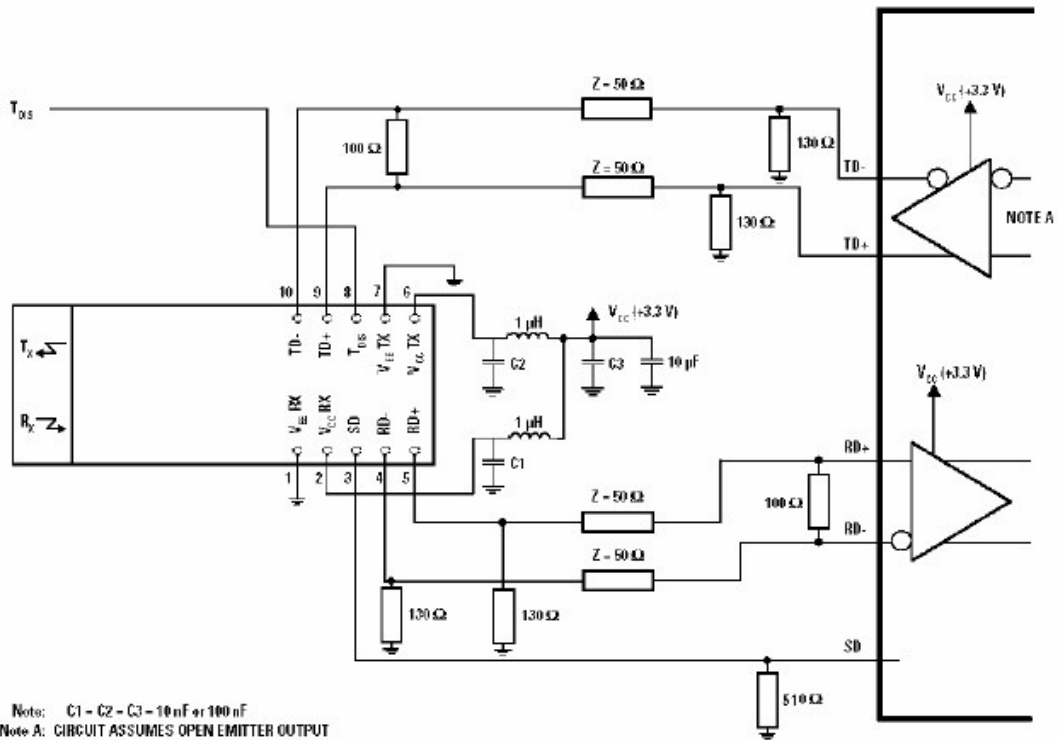
1. **The two mounting studs did not be connected to the interior of ground. They are provided for transceiver mechanical attachment to the circuit board. It is recommended that the holes in the circuit board be connected to chassis ground.**
2. **Those Tabs did not be connected to the interior of ground. Connect four package grounding tabs to receiver signal ground.**
3. **Directly connect these pins to the receiver ground plane.**
4. **Provide +3.3V DC via the recommend receiver power supply filter circuit. Locate the power supply filter circuit as close as possible to the VCC RX pin.**
5. **Normal optical input levels to the receiver result in logic "1" output. Low optical input levels to the receiver result in a logic "0" output.**
6. **These are the differential receiver outputs. They are open emitter output**
7. **Provide +3.3V DC via the recommended transmitter power supply filter circuit. Locate the power supply filter circuit as close as possible to the VCCR TX pin.**
8. **Directly connect these pins to the transmitter signal ground plane.**
9. **LVTTL logic lever, to enable module connect to TTL logic low "0".**
10. **These are the differential transmitter inputs. They are DC-coupled.**

Package Information

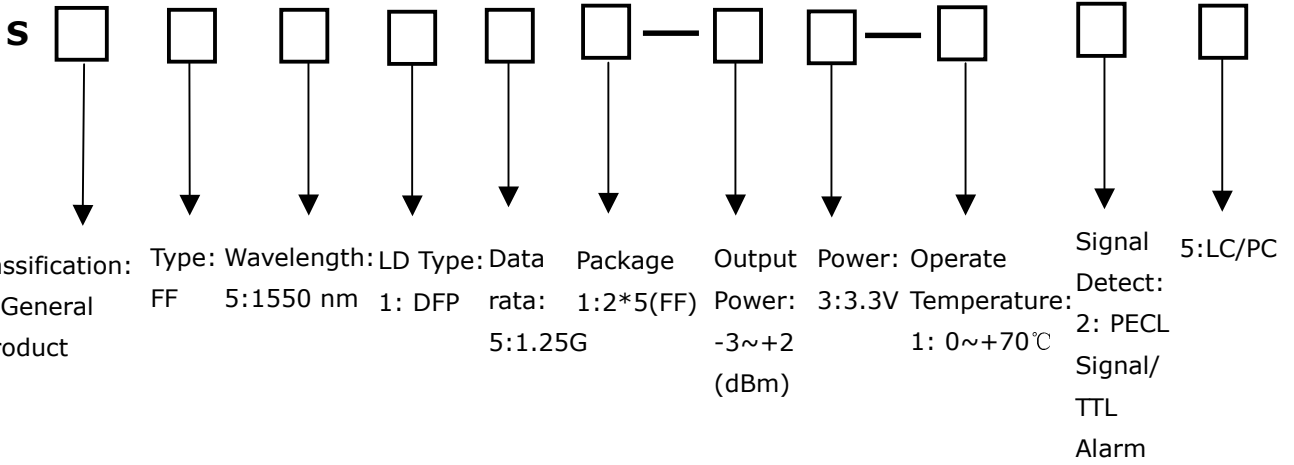
Unit: mm



Recommended Circuit



Ordering Information



Part number	Product Information
SSFF5151-23-125	1550nm 1.25Gb/s 2*5 0~+70°C