CAN BE CONFIGURED FOR COMPATIBILITY WITH DIFFERENT BRANDS

5 YEARS WARRANTY

Bi-Di SFP 1.25Gb/s Optical Transceiver

Tx-1310nm/Rx-1490nm, Tx-1490nm/Rx-1310nm
Tx-1310nm/Rx-1550nm, Tx-1550nm/Rx-1310nm

Product Features:

* Up to 1.25Gb/s bi-directional data links
* SFP Multi-source Package with SC Receptacle
* Uncooled 1310nm FP ,1490nm 1550nm DFB laser transmitter
* Up to 10km on 9/125μm SMF 20 km also available
* Hot-Pluggable Capability
* Single +3.3V Power Supply
* Isolation > 30dB, Cross Talk < -45dB
* Compliant with Specifications for IEEE802.3Z
* Operating Case Temperature: 0°C to 70°C Industrial -40ÜC<>85ÜC

Applications:

* Gigabit Ethernet
* Fiber Channel
* WDM Application

Specification:

Electrical and Optical Characteristics: (Condition:Tc = 0°C to 70°C, Vcc = 3.15V to 3.45V)

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter Differential Input Volt	+/-TX_DAT	200		2400	mV p-p
Supply Current	Icc		200	250	mA
Tx_Disable Input Voltage – Low	VIL	0		0.8	V
Tx_Disable Input Voltage – High	VIH	2.0		Vcc	V
Tx_Fault Output Voltage – Low	VOL	0		0.8	V
Tx_Fault Output Voltage – High	VOH	2.0		Vcc	V
Receiver Differential Output Volt	+/-RX_DAT	600		1400	mV p-p
Rx_LOS Output Voltage- Low	VOL	0		0.8	V
Rx_LOS Output Voltage- High	VOH	2.0		Vcc	V

Transmitter Section:

Parameter	Symbol	Min.	Typical	Max.	Unit
Data Rate	B	-	1250	-	Mb/s
Centre Wavelength	λ c	1270	1310	1355	nm
Output Spectral Width	△ λ (RMS)	-	-	4	nm
Average Output Power	Po	-9.5	-	-3	dBm
Extinction Ratio	EXT	9	-	-	dB
Data Input Voltage-High	VIHS	Vcc-1.16	-	Vcc-0.89	V
Data Input Voltage -Low	VILS	Vcc-1.82	-	Vcc-1.48	V
Supply Current	Icc	-	90	150	mA
Output Optical Eye	Compliant with IEEE802.3Z				
Receiver Section:					

Parameter	Symbol	Min.	Typical	Max.	Unit
Receive Sensitivity	P_{min}	-	-	-22	dBm
Maximum Input Power	P_{MAX}	-3	-	-	dBm
Signal Detect Threshold-Assertion:	SD_{HIGH}	-	-	-22	dBm
Signal Detect Threshold-Deassertion:	SD_{LOW}	-32	-	-	dBm
Hysteresis	-	-	3.0	-	dBm
Output High Voltage	V_{OH}	V_{cc}-1.03	-	V_{cc}-0.89	V
Output Low Voltage	V_{OL}	V_{cc}-1.82	-	V_{cc}-1.63	V
Operating Wavelength	λ c	1480	1490/1550	1580	nm
Supply Current	I_{CC}	-	80	110	mA

Transmitter Section:

Parameter	Symbol	Min.	Typical	Max.	Unit
Data Rate	B	-	1250	-	Mb/s
Centre Wavelength	λ c	1480	1490/1550	1580	nm
Output Spectral Width	△ λ (RMS)	-	-	1	nm
Average Output Power	P_o	-9.5	-	-3	dBm
Extinction Ratio	EXT	9	-	-	dB
Data Input Voltage-High	V_{IHS}	V_{cc}-1.16	-	V_{cc}-0.89	V
Data Input Voltage -Low	V_{ILS}	V_{cc}-1.82	-	V_{cc}-1.48	V
Supply Current	I_{CC}	-	90	150	mA
Output Optical Eye	Compliant with IEEE802.3Z				

Receiver Section:

Parameter	Symbol	Min.	Typical	Max.	Unit
Receive Sensitivity	P_{min}	-	-	-22	dBm
Maximum Input Power	P_{MAX}	-3	-	-	dBm
Signal Detect Threshold-Assertion:	SD_{HIGH}	-	-	-22	dBm
Signal Detect Threshold-Deassertion:	SD_{LOW}	-32	-	-	dBm
Hysteresis	-	-	3.0	-	dBm
Output High Voltage	V_{OH}	V_{cc}-1.03	-	V_{cc}-0.89	V
Output Low Voltage	V_{OL}	V_{cc}-1.82	-	V_{cc}-1.63	V
Operating Wavelength	λ c	1260	1310	1360	nm
Supply Current	I_{CC}	-	80	110	mA

Absolute Maximum Ratings:

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T_{ST}	-40	+85	℃
Operating Temperature	T_{IP}	0	+70	℃
Input Voltage	T_{CC}	0	+5	V

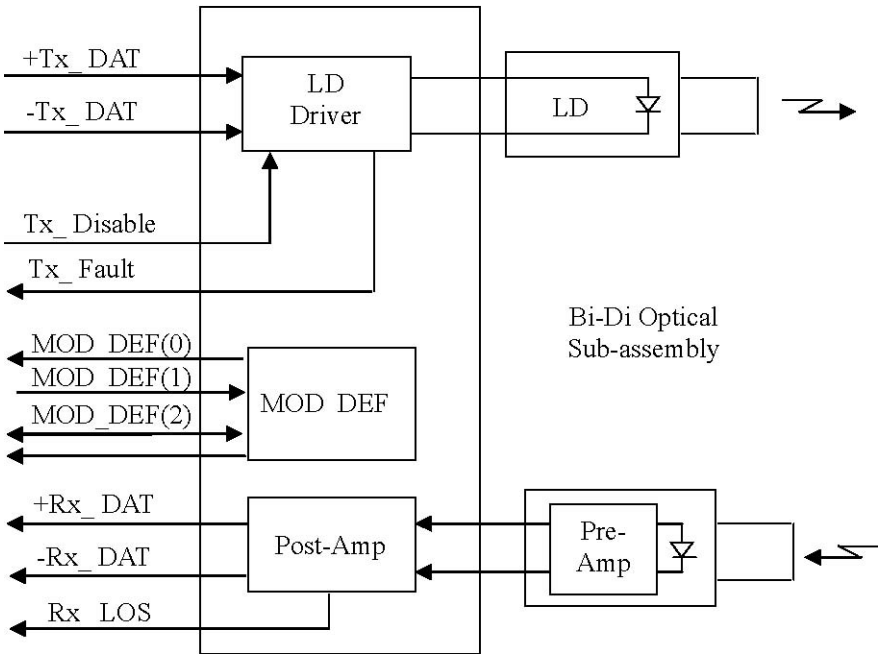
Recommended Operating Environment:

Parameter	Symbol	Min.	Typical	Max.	Unit
Supply Voltage	Vcc	+3.15	+3.3	+3.45	V
Operating Temperature	Top	0	-	+70	℃

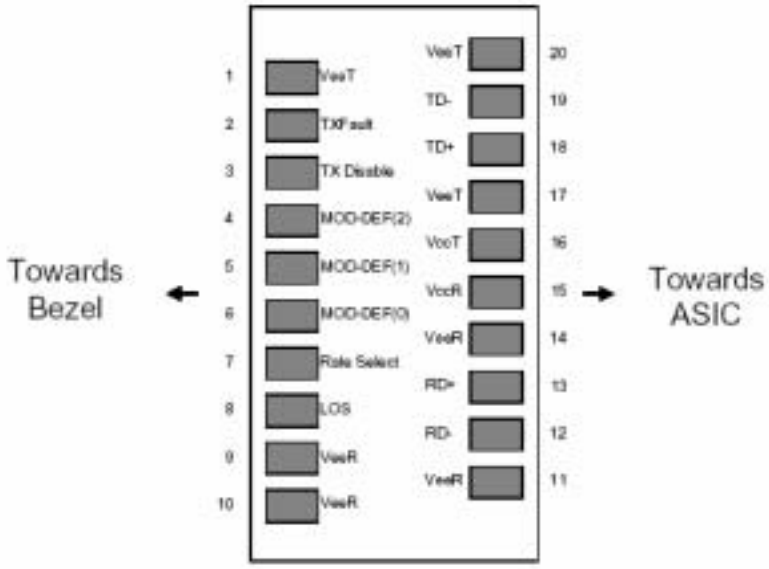
Timing Characteristics:

Parameter	Symbol	Min.	Typical	Max.	Unit
TX_DISABLE Assert Time	t_off		3	10	usec
TX_DISABLE Negate Time	t_on		0.5	1	msec
Time to initialize include reset of TX_FAULT	t_int		30	300	msec
TX_FAULT from fault to assertion	t_fault		20	100	usec
TX_DISBEL time to start reset	t_reset	10			usec
Receiver Loss of Signal Assert Time (off to On)	TA,RX_LOS			100	usec
Receiver Loss of Signal Assert Time (on to off)	Td,RX_LOS			100	usec

Block Diagram of Transceiver:



Pin Assignment:



Pin out of Connector Block on Host Board

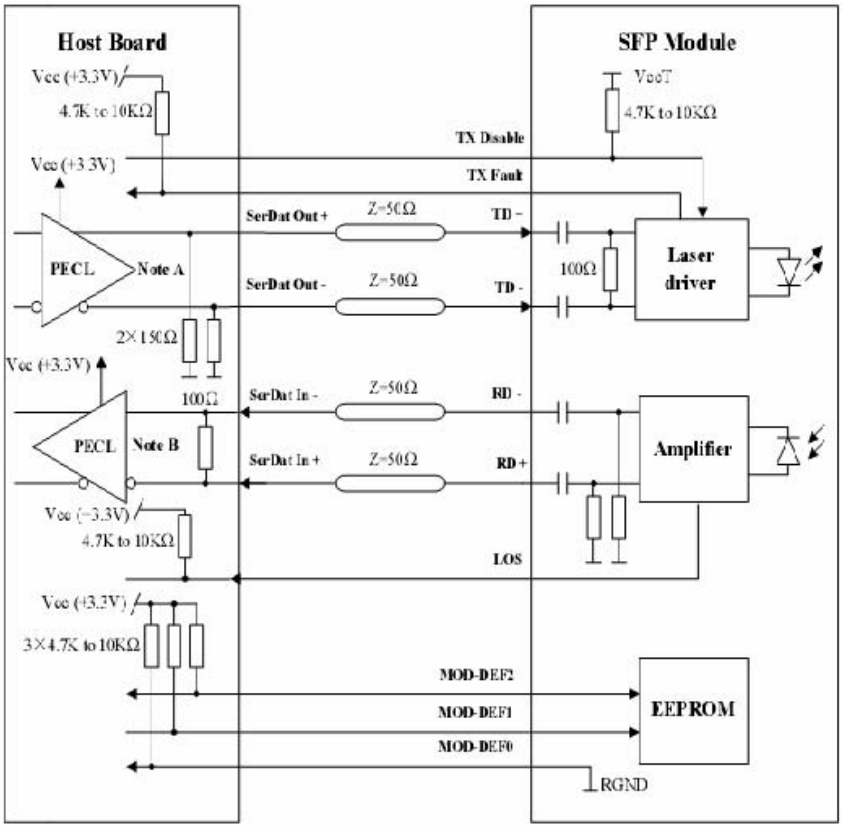
Pin Description:

Pin	Symbol	Name/Description	Ref.
1	V_{EET}	Transmitter Ground (Common with Receiver Ground)	1
2	T_{FAULT}	Transmitter Fault. Not supported.	
3	T_{DIS}	Transmitter Disable. Laser output disabled on high or open.	2
4	MOD_DEF(2)	Module Definition 2. Data line for Serial ID.	3
5	MOD_DEF(1)	Module Definition 1. Clock line for Serial ID.	3
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	3
7	Rate Select	No connection required	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	4
9	V_{EER}	Receiver Ground (Common with Transmitter Ground)	1
10	V_{EER}	Receiver Ground (Common with Transmitter Ground)	1
11	V_{EER}	Receiver Ground (Common with Transmitter Ground)	1
12	RD-	Receiver Inverted DATA out. AC Coupled	
13	RD+	Receiver Non-inverted DATA out. AC Coupled	
14	V_{EER}	Receiver Ground (Common with Transmitter Ground)	1
15	V_{CCR}	Receiver Power Supply	
16	V_{CCT}	Transmitter Power Supply	
17	V_{EET}	Transmitter Ground (Common with Receiver Ground)	1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	V_{EET}	Transmitter Ground (Common with Receiver Ground)	1

Notes:

1. Circuit ground is internally isolated from chassis ground.
2. Laser output disabled on TDIS >2.0V or open, enabled on TDIS <0.8V.
3. Should be pulled up with 4.7k – 10kohms on host board to a voltage between 2.0V and 3.6V. MOD_DEF(0) pulls line low to indicate module is plugged in.
4. LOS is open collector output. Should be pulled up with 4.7k – 10kohms on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.

Recommended Circuit:



Note A: Circuit assumes open emitter output

Note B: Circuit assumes high impedance internal bias @Vcc-1.3V