



CWDM SFP Transceiver
1.25Gb/S, SFP Pluggable, Duplex LC/PC Connector, +3.3V
1270~1610nm DFB-LD, Single-Mode
PCSFP-24-1xx12-12F

Features:

- 18 CWDM Wavelengths Available
- 22dB Power Budget
- Build-in Isolator Optional
- Hot-Pluggable Duplex LC/PC Connector
- Single +3.3V Power Supply
- Operating Temperature Designed to meet La
- Compliant with ITU-T G694.2
- Compliant with Telcordia(Bellcore) GR-468-CORE
- Designed to meet Laser Class1 Compliant with IEC60825-1

Applications:

- Metro/Access Networks
- 1.25 Gb/s 1000Base-ZX Ethernet
- 1×Fiber Channel
- Other Optical Links

Description:

PeakOptical®'s CWDM Transceiver products provide optical networking equipment manufacturers with a timely and cost effective tool in supporting the unceasing demand for higher bandwidth equipment build-outs in the enterprise access and metropolitan area networks. There are 18 center wavelengths available from 1270nm to 1610nm. The 20nm channel spacing allows for un-cooled laser operation, a high yield manufacturing process, and lower cost Mux/Demux technology, thus providing a complete cost effective solution for various data and telecom applications.



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Specification:

Electrical and Optical Characteristics(Condition: T_c= T_{op})

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter Differential Input Voltage	+/-TX_DAT	650		2000	mV p-p
Supply Current	I _{CC}		200	250	mA
Tx_Disable Input Voltage – Low	V _{IL}	0		0.8	V
Tx_Disable Input Voltage – High	V _{IH}	2.0		V _{CC}	V
Tx_Fault Output Voltage – Low	V _{OL}	0		0.8	V
Tx_Fault Output Voltage – High	V _{OH}	2.0		V _{CC}	V
Receiver Differential Output Voltage	+/-RX_DAT	400		2000	mV p-p
Rx_LOS Output Voltage- Low	V _{OL}	0		0.8	V
Rx_LOS Output Voltage- High	V _{OH}	2.0		V _{CC}	V
Transmitter					
Parameter	Symbol	Min.	Typical	Max.	Unit
Data Rate	B	-	1.25	-	Gb/s
Output Center Wavelength(0~70°C)	λ _C	λ-5.5	λ	λ+7.5	nm
Output Spectral Width	Δλ	-	-	1	nm
Average Output Power	P _O	-2	-	+3	dBm
Extinction Ratio	E.R.	9	-	-	dB
Rise and Fall Time (20~80%)	T _r	-		0.15	ns
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}	-	-	120	mA
Output Optical Eye	Compliant with ITU-T G.957				
Receiver					
Parameter	Symbol	Min.	Typical	Max.	Unit
Date Rate	B	-	1.25	-	Gb/s
Receive Sensitivity	S	-	-	-24	dBm
Maximum Input Power	P _{max}	-3	-	-	dBm
Operating Wavelength	λ _C	1100	-	1620	nm
Signal Detect Threshold-Assertion:	SD _{HIGH}			-25	dBm
Signal Detect Threshold-Deassertion:	SD _{LOW}	-35			dBm

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Hysteresis	-		2.0		dBm
Supply Current	I_{CC}	-	-	110	mA
Rise and Fall Time (20~80%)	T_r/T_f			0.15	ns
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
Alarm Output Interface	LV-TTL				

Absolute Maximum Ratings:($T_C=25^{\circ}C$)

Parameter	Symbol	Min.	Max.	Units
Storage Temperature	T_{st}	-40	+85	$^{\circ}C$
Operating Temperature	T_{op}	-20	+70	$^{\circ}C$
Supply Voltage	V_{CC}	0	V_{CC}	V
Output Current	I_o	0	30	mA

Operating Environment:

Parameter	Symbol	Min.	Max.	Units
Supply Voltage	V_{CC}	+3.1	+3.5	V
Ambient Operating Temperature	T_A	-20	70	$^{\circ}C$

Timing Characteristics:

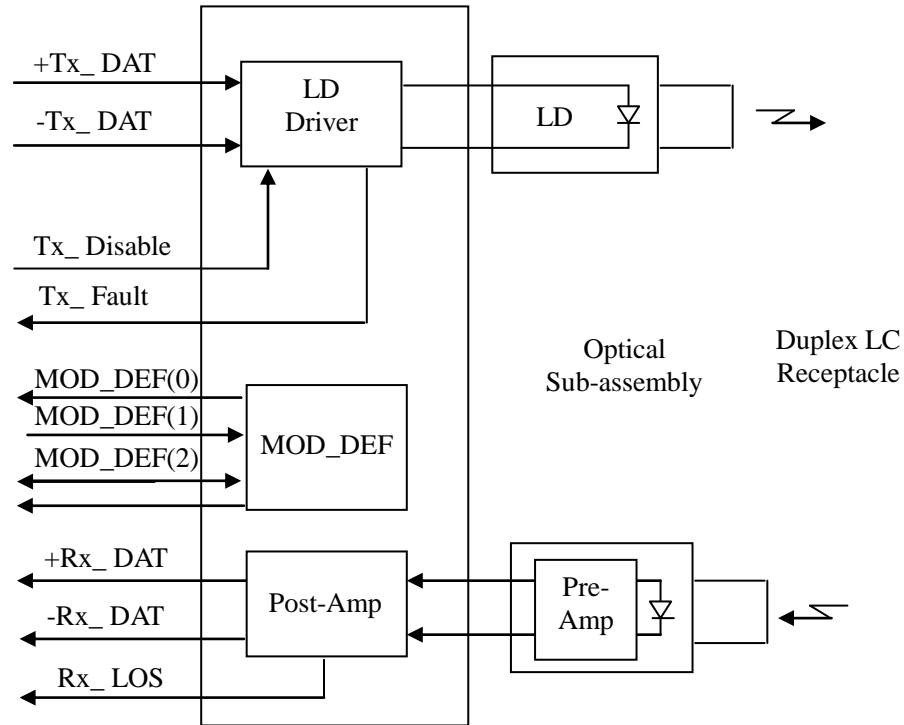
Parameter	Symbol	Min.	Typical	Max.	Unit
TX_DISABLE Assert Time	t_{off}		3	10	Usec
TX_DISABLE Negate Time	t_{on}		0.5	1	msec
Time to Initialize Include Reset of TX_FAULT	t_{int}		30	300	msec
TX_FAULT from Fault to Assertion	t_{fault}		20	100	Usec
TX_DISBEL Time to Start Reset	t_{reset}	10			Usec
Receiver Loss of Signal Assert Time (off to On)	T_{A,RX_LOS}			100	Usec
Receiver Loss of Signal Assert Time (On to Off)	T_{d,RX_LOS}			100	Usec

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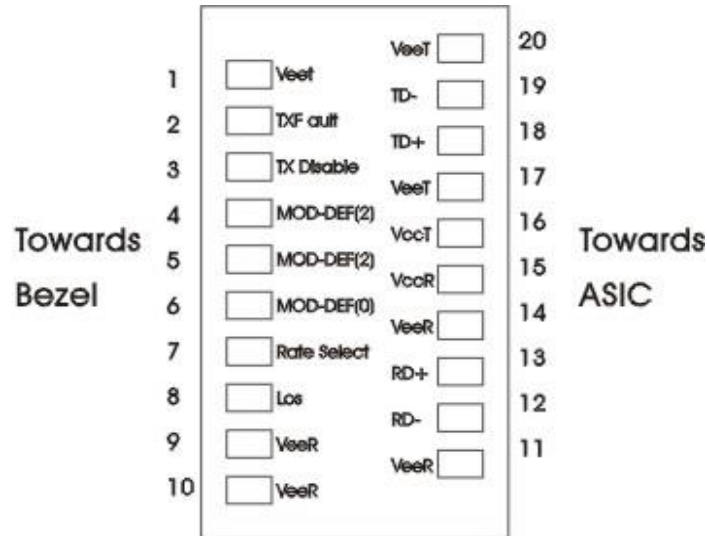
Block Diagram of Transceiver:





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Pin Assignment:



Pin out of Connector Block on Host Board

SFP Host Board Mechanical Layout

Notes:

1. Circuit ground is internally isolated from chassis ground.
2. TX Fault is an open collector/drain output, which should be pulled up with a 4.7K–10KΩ resistor on the host board. Pull up voltage between 2.0V and VccT, R+0.3V. When high, output indicates a laser fault of some kind. Low indicates normal operation. In the low state, the output will be pulled to < 0.8V.
3. Laser output disabled on TDIS >2.0V or open, enabled on TDIS <0.8V.
4. 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.
5. 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.



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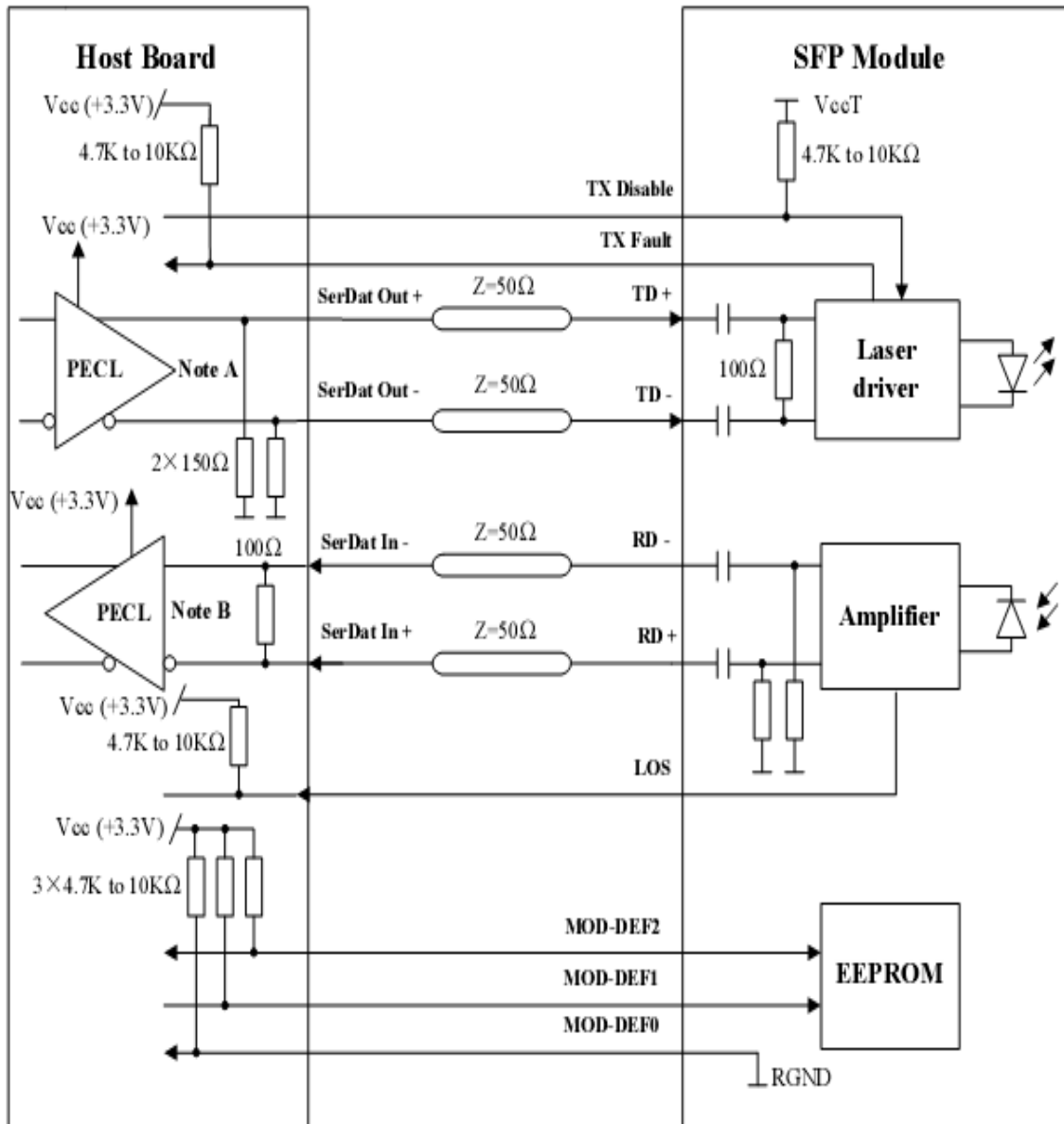
Serial ID Memory Contents:

Data Address	Length (Byte)	Name of Length	Description and Contents
Base ID Fields			
0	1	Identifier	Type of Serial transceiver (03h=SFP)
1	1	Reserved	Extended identifier of type serial transceiver (04h)
2	1	Connector	Code of optical connector type (07=LC)
3-10	8	Transceiver	Gigabit Ethernet 1000Base-ZX & Fiber Channel
11	1	Encoding	8B10B (01h)
12	1	BR,Nominal	Nominal baud rate, unit of 100Mbps
13-14	2	Reserved	(0000h)
15	1	Length(9um)	Link length supported for 9/125um fiber, units of 100m
16	1	Length(50um)	Link length supported for 50/125um fiber, units of 10m
17	1	Length(62.5um)	Link length supported for 62.5/125um fiber, units of 10m
18	1	Length(Copper)	Link length supported for copper, units of meters
19	1	Reserved	
20-35	16	Vendor Name	SFP vendor name
36	1	Reserved	
37-39	3	Vendor OUI	SFP transceiver vendor OUI ID
40-55	16	Vendor PN	Part Number: "PSFP-xx-xxxx-xxx" (ASCII)
56-59	4	Vendor rev	Revision level for part number
60-61	2	Wavelength	Laser wavelength
62	1	Reserved	
63	1	CCID	Least significant byte of sum of data in address 0-62
Extended ID Fields			
64-65	2	Option	Indicates which optical SFP signals are implemented (001Ah = LOS, TX_FAULT, TX_DISABLE all supported)
66	1	BR, max	Upper bit rate margin, units of %
67	1	BR, min	Lower bit rate margin, units of %
68-83	16	Vendor SN	Serial number (ASCII)
84-91	8	Date code	Manufacturing date code
92-94	3	Reserved	
95	1	CCEX	Check code for the extended ID Fields (addresses 64 to 94)
Vendor Specific ID Fields			
96-127	32	Readable	Specific date, read only

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Recommended Circuit:



Note A: Circuit assumes open emitter output

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



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Mechanical Dimensions:

