1 Features

1. Multi-sourced SFP package with single LC/PC or SC/PC receptacle;
2. Single mode single fiber bi-directional transmission
3. Up to 10~120Km with 9/125μm SMF;
4. AC coupled for Rx and Tx side
5. Two temperature ranges: 0°C to +70°C for commercial level,
   -40°C to +85°C for industrial level;
6. Operates at data rate 155Mbps
7. Complies with MIL-STD-883/GR-468
8. Complies with lots of brands of switch such as cisco h3c…….
9. Can be with or without DDM

2 Applications

Switch

Video monitor system

Telecommunication system

3 Absolute Maximum Ratings

Parameter	Symbol		Min	Max	Unit
Storage Temperature	T_S		-40	+85	℃
Operating Temperature	T_{OP}	Commercial level	-20	+70	℃
		industrial level	-40	85	
Supply Voltage	V_{CC}		-0.5	+4.5	V
Voltage on Any Pin	V_{IN}		0	V_{CC}	V
Soldering Temperature ,Time	-			260℃, 10 S	℃,S

4 Recommended Operating Conditions

Parameter	Symbol		Min.	Typ	Max.	Unit
Ambient Temperature	T_{AMB}	Commercial level	0	-	70	℃
		industrial level	-40		85	
Power Supply Voltage	V_{CC}-V_{EE}		3	3.3	3.6	V

5 Operating Conditions

5.1 Transmitter（T=25℃, Vcc=3~3.6V (+3.3V)）

Parameter			Symbol		Min.	Typ	Max.	Unit
Center Wavelength			λc		1520	1550	1580	nm
					1280	1310	1340	
					1470	1490	1510	
Spectral width			Δλ	FP@RMS	-	2	4	nm
				DFB@-20dB FWHM	-	-	1	
Output Power	0~30km	155M	1310 FP	Po	-15	-	-3	dBm
			1550 FP		-15		-3	

	10～40km	155M	14/15 DFB		-12	-	-0	
			1310 FP		-9		-0	
	10~70km	`155M	14/15 DFB		-8		0	
			1310 FP		-5		0	
	80km	155M	14/15 DFB		-5		0	
	100~120km	155M	14/150 DFB		-3		2	
Extinction Ratio			ER		10		-	dB
Supply Current			ICCT		-		150	mA
Input Differential Impedance			Rin			100		Ω
Data Input Swing Differential			Vin		300		1200	mV
Optical Modulation Amplitude			OMA		174			μW
Transmit Disable Voltage			VD		2.0		Vcc	V
Transmit Enable Voltage			VEN		0		0.8	V
Transmit Disable Assert Time							10	us
Optical Rise/Fall Time			1.25G	Tr/ Tf (20-80%)			800	ps

5.2 Receiver （T=25℃, Vcc=3~3.6V (+3.3V)

Parameter			Symbol		Min.	Typ	Max.	Unit
Wavelength Range			λc		1520	1550	1580	nm
					1280	1310	1340	
					1470	1490	1510	
Sensitivity	0～40km	155M	Pintia	PMIN	-	-	-34	dBm
	40～80km	155M	Pintia		-	-	-35	
	80km	155M	Pintia		-	-	-36	
	100km	155M	Pintia				-37	
	120km	155M	Pintia				-38	
MAX. Input Power (Saturation)			PMAX		0	-	-	
Signal Detect Assert			PA		-	-	-34	
Signal Detect De-assert			PD		-45	-	-	
Signal Detect Hysteresis			PHYS		1	-	4	
Supply Current			ICCR		-	-	150	mA
Data Output Swing Differential			Vout		400	-	1000	mV
Signal Detect Voltage - High			VSDHC		2.0	-	VCC	V
Signal Detect Voltage - Low			VSDL		0	-	0.8	

Notes:

switch from a high state to a low state.

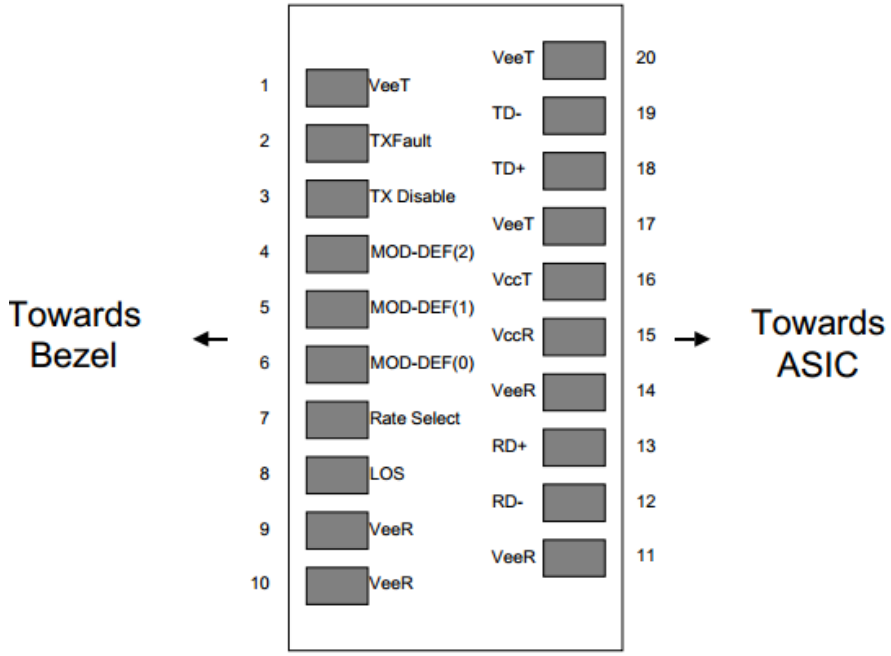
1)Value of output power and sensitivity can be customized according to the demand

6 Pin Assignment

Pin	Descriptions	Pin	Descriptions
1	VEET	Transmitter Ground (Common with Receiver Ground)	1
2	TFAULT	Transmitter Fault.	2
3	TDIS	Transmitter Disable. Laser output disabled on high or open.	3
4	MOD_DEF(2)	Module Definition 2. Data line for Serial ID.	4
5	MOD_DEF(1)	Module Definition 1. Clock line for Serial ID.	4
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	4
7	Rate Select	No connection required	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	5
9	VEER	Receiver Ground (Common with Transmitter Ground)	1
10	VEER	Receiver Ground (Common with Transmitter Ground)	1
11	VEER	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	VEER	Receiver Ground (Common with Transmitter Ground)	1
15	VCCR	Receiver Power Supply	
16	VCCT	Transmitter Power Supply	
17	VEET	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	VEET	Transmitter Ground (Common with Receiver Ground)	1

Notes:

1. Circuit ground is internally isolated from chassis ground.
2. TFAULTis an open collector/drain output, which should be pulled up with a 4.7k – 10k Ohms resistor on the host board if intended for use. Pull up voltage should be between 2.0V to Vcc + 0.3V. A high output indicates a transmitter fault caused by either the TX bias current or the TX output power exceeding the preset alarm thresholds. A low output indicates normal operation. In the low state, the output is 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 - 10 kohms 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 – 10 kohms on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.



Pinout of Connector Block on Host Board

7 Ordering Information

7.1 Example

SFP 35 03 -F 1 1 SC-20

Sign	Mean	Description				
SFP	Module type	SFP=Single fiber SFP transceiver				
35	Center wave	**35=1310tx/1550rx**		53=1550tx/1310rx	45=1490tx/1550rx	54=1550tx/1490rx
03	Transmitter Rate	**03=155M**	03=622M	24=1.25G	48=2.5G	60=3.125G
F	Laser type	**F=FP**		D=DFB	C=CWDM	V=VCSEL
1	Operating T	**1=0~+70℃**		2=-40~+85℃		
2	DDMI	**1=NO DDM**		2=DDMI		
LC	Connector	SC=SC		**LC=LC**		
20	Distance	022=220M		055=550M	5=5KM	10=10KM
		20=20KM		40=40KM	80=80KM	100=100KM

Part No.	Wavelength	Connector	Temp.	TX Power (dBm)	RX Sens (Max.) (dBm)	Distance
SFP3503-F11LC-20	T 1310FP/R 1550	LC	-20 to 70	-15 to-0	-34	20km
SFP5303-F11LC-20	T 1550 FP /R 1310	LC	-20 to 70	-15 to-3	-34	
SFP5303-D21LC-40	T 1550DFB/R 1310	LC	-40 to 85	-12 to-0	-34	40km
SFP3503-F11LC-40	T 1310FP/R 1550	LC	-20 to 70	-9to-0	-34	
SFP5403-D11LC-100	T 1550DFB/R 1490	LC	-20 to 70	-3 to2	-37	100km
SFP4503-D11LC-100	T 1490DFB/R 1550	LC	-20 to 70	-3 to2	-37	

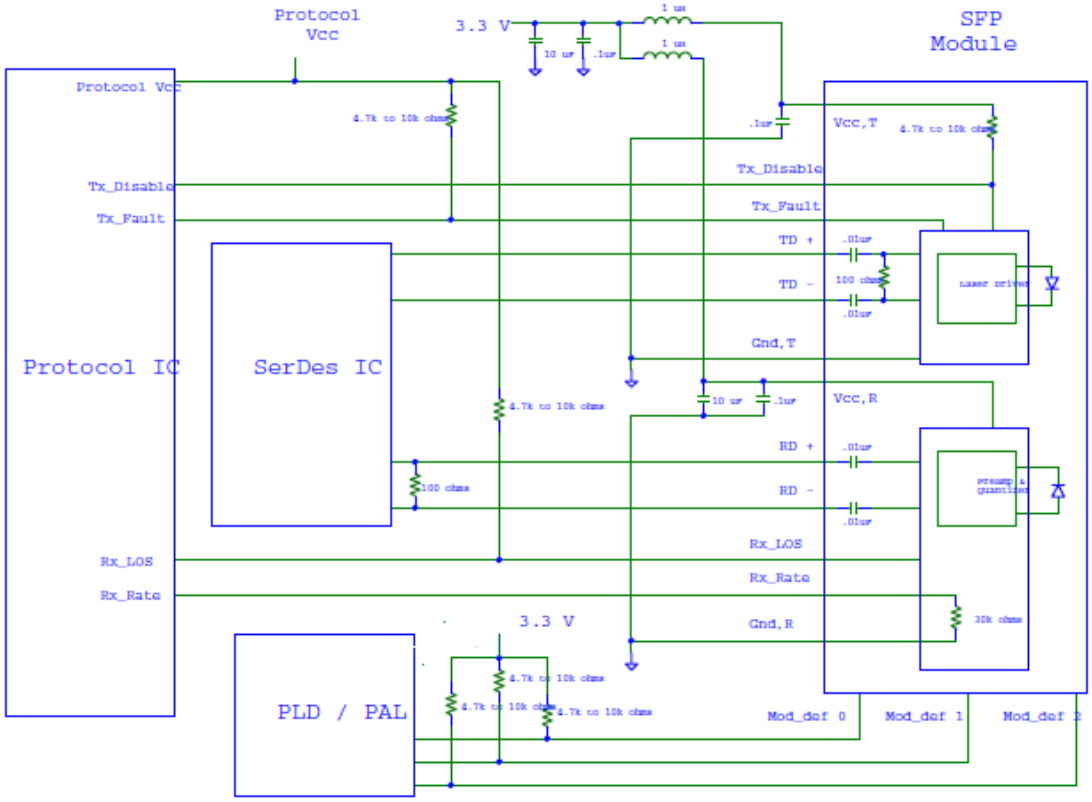


Figure 2 Example SFP Host Board Schematic

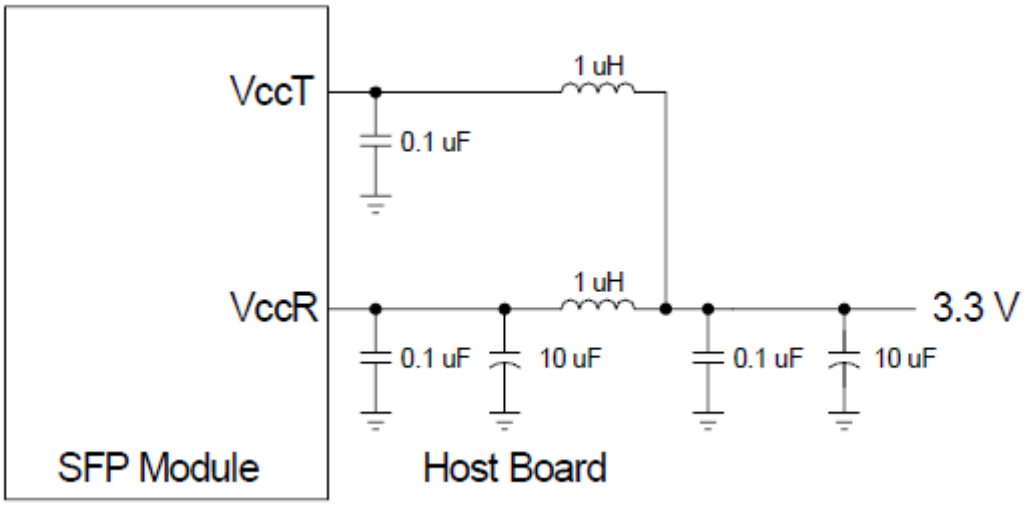


Figure 3 Recommended Host Board Supply Filtering Network

Small Form-factor Pluggable (SFP) Transceiver MultiSource Agreement (MSA)

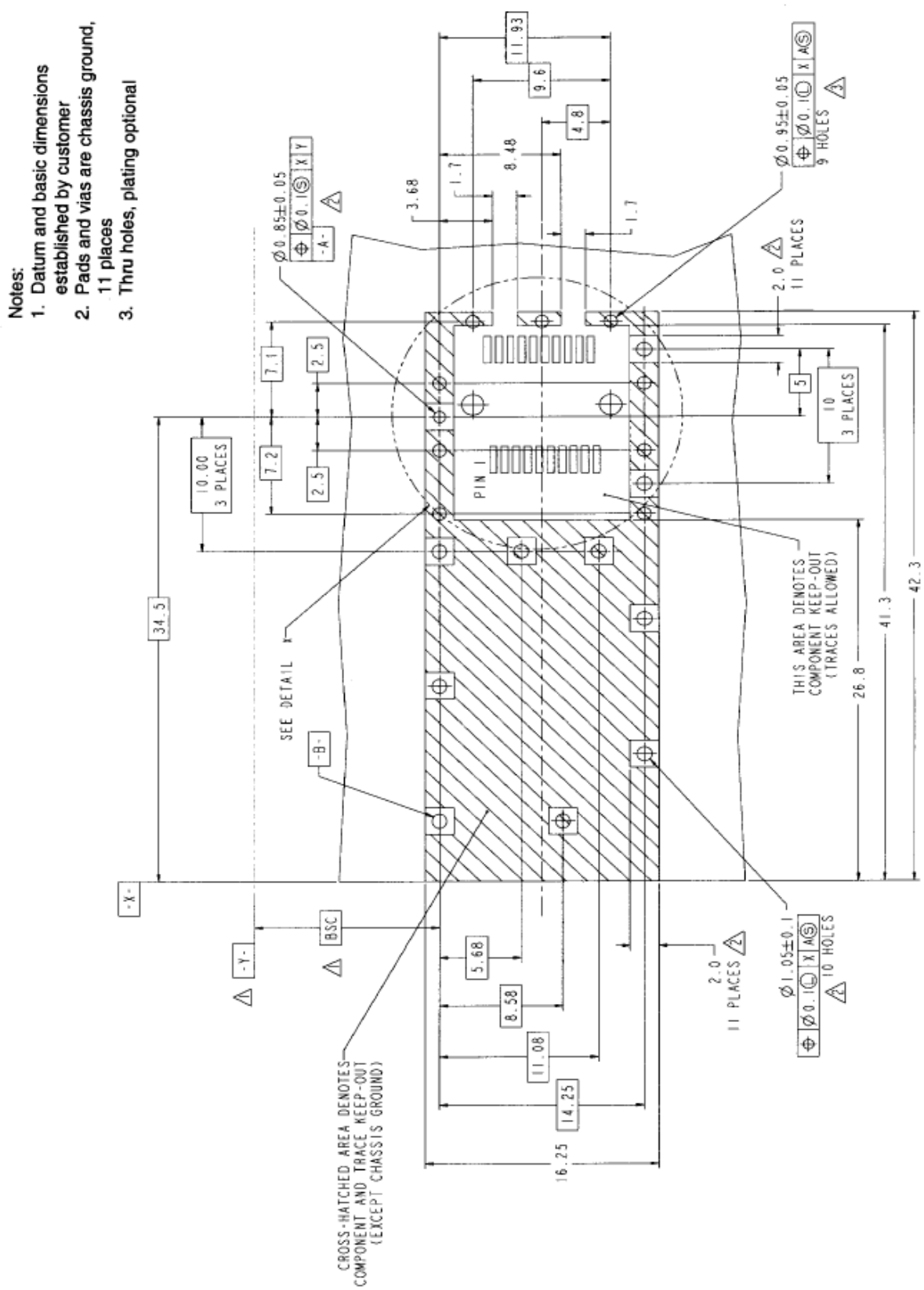


Figure 4 SFP Host Board Mechanical Layout

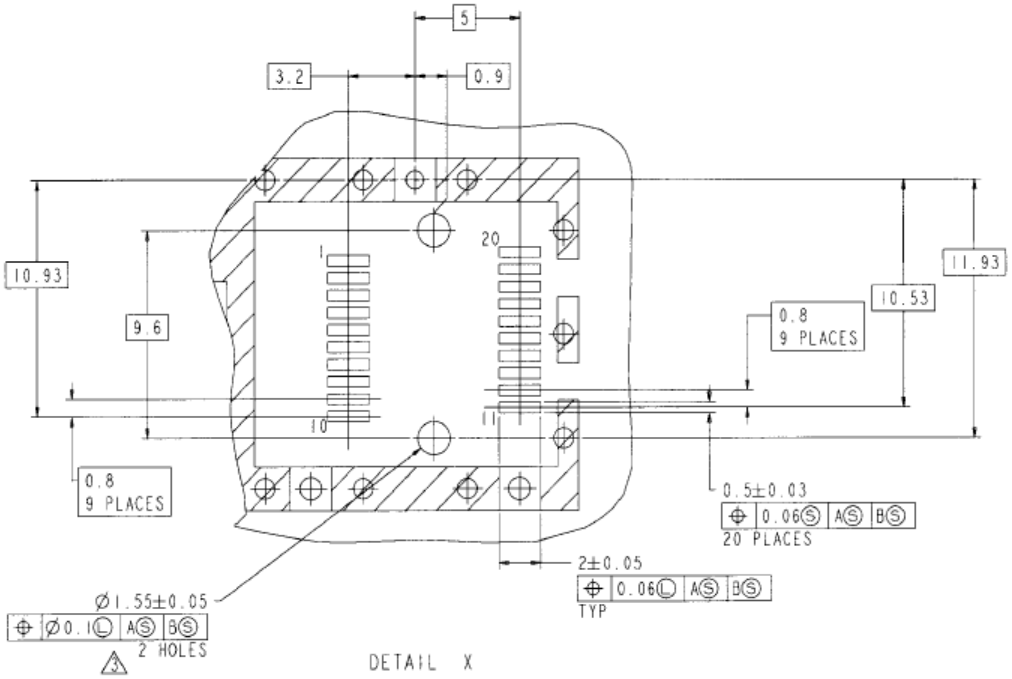
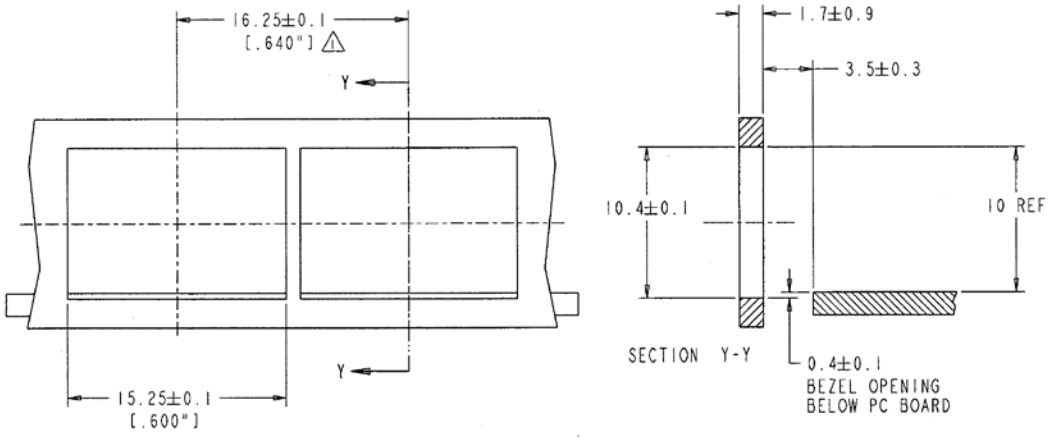


Figure 5 SFP Host Board Mechanical Layout (Cont.)



NOTES:

1. MINIMUM PITCH ILLUSTRATED, ENGLISH DIMENSIONS ARE FOR REFERENCE ONLY
2. NOT RECOMMENDED FOR PCI EXPANSION CARD APPLICATIONS

Figure 6 Recommended Bezel Design