

1 Features

1. Multi-sourced SFP package with dual LC/PC receptacles;
2. Single mode dual fibers transmission
3. Up to 20~80Km 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 1.25Gbps;
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	°C	
Operating Temperature	T _{OP}	Commercial level	-20	+70	°C
		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°C, 10 S	°C,S	

4 Recommended Operating Conditions

Parameter	Symbol	Min.	Typ	Max.	Unit	
Ambient Temperature	T _{AMB}	Commercial level	0	-	70	°C
		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°C, Vcc=3~3.6V (+3.3V)) 1.25G

Parameter	Symbol	Min.	Typ	Max.	Unit		
Center Wavelength	λ _c	FP OR DFB	1520	1550	1580	nm	
			1280	1310	1340		
		CWDM	λ ₋₆	λ _(note1)	λ ₊₆		
Spectral width	Δλ	FP@RMS	-	1	2	nm	
		DFB@-20dB FWHM	-	-	1		
Side Mode Suppression Ratio	SMSR (DFB only)	30			dB		
Output Power	0~20km	1310 FP	P _o	-9	-	-3	dBm
	20km	1550 DFB		-9	-	-0	

	40km	CWDM	-9	-	-0	
		1550 DFB	-5		0	
		CWDM	-5		0	
	80km	1550 DFB	-3		2	
		CWDM	-3		2	
Extinction Ratio	ER	1.25G	9		-	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			μ W
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	Tr/ Tf (20-80%)			150	260	ps
Deterministic Jitter Contribution	TX Δ DJ				51.7	ps
Total Jitter Contribution	TX Δ TJ				90	ps
Output Optical Eye	IUT-T G.957 Compliant					

Note1: λ : 1270, 1290, 1310, 1330, 1350, 1370, 1390, 1410, 1430, 1450, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610 nm

5.2 Receiver (T=25°C, Vcc=3~3.6V (+3.3V) 1.25G)

Parameter			Symbol	Min.	Typ	Max.	Unit
Wavelength Range			λ_c	1100		1610	nm
Sensitivity	0~20km	1.25G	Pin	-	-24	-23	dBm
	40km		Pin	-	-25	-24	
	80km		Pin	-	-27	-26	
MAX. Input Power (Saturation)			PMAX	-3	-	-	
Signal Detect Assert			PA	-	-	-24	
Signal Detect De-assert			PD	-34	-	-	
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 Ordering Information

Example

DSFP 49 24-C 1 2 LC - 80

Sign	Mean	Description			
DSFP	Module type	DSFP= Dual fibers SFP		SFP=Single fiber SFP	
49	Center wave	30=1310tx/NO rx		50=1550tx/NO RX	CWDM Like 49=1490 CWDM TX 1100~1610 RX
24	date Rate	03=155M	12=622M	24=1.25G	48=2.5G 60=3.125G
C	Laser type	F=FP		D=DFB	C=CWDM V=VCSEL
1	Operating T	1=-20~+70°C		2=-40~+85°C	
1	DDMI	1=NO DDM		2=DDMI	
LC	Connector	SC=SC		LC=LC	
80	Distance	022=220M		055=550M	5=5KM 10=10KM
		20=20KM		40=40KM	80=80KM 100=100KM

Example

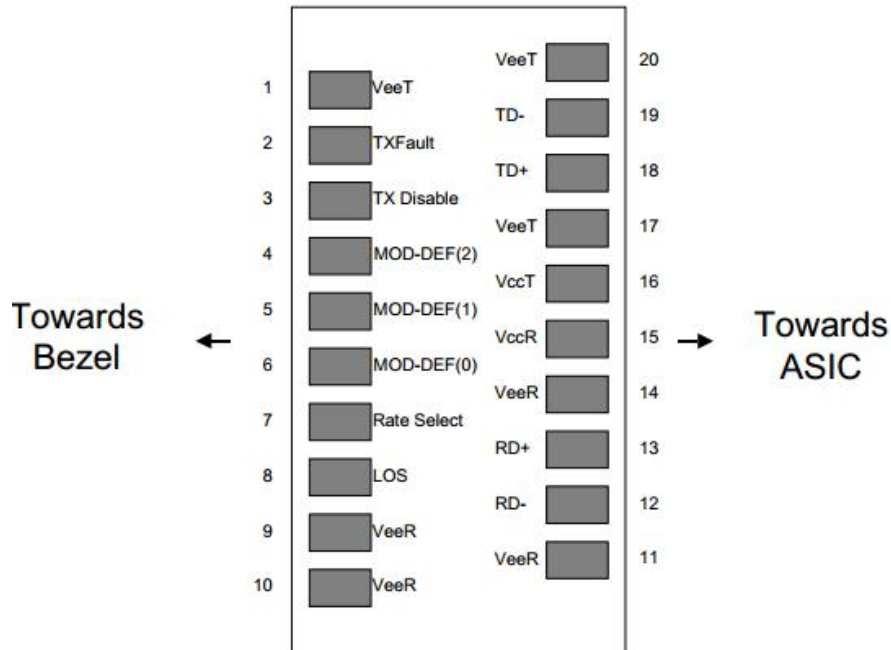
DSFP 3X 24-0 12 LC - 80

Sign	Mean	Description			
DSFP	Module type	DSFP= Dual fibers SFP		SFP=Single fiber SFP	
3X	Center wave	88=850NM T&R		3x=1310 tx/1100~1610 RX	CWDM Like 49=1490 CWDM TX 1100~1610 RX
24	date Rate	03=155M	12=622M	24=1.25G	48=2.5G 60=3.125G
0	Laser type	0=no LD			
1	Operating T	1=-20~+70°C		2=-40~+85°C	
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

Typical products

Part No.	Wavelength	Connect or	Temp.	TX Power (dBm)	RX Sens (Max.) (dBm)	DD MI	Distance
DSFP3X24-F11LC-20	T 1310FP/rx 1100~1610	LC	-20 to 70	-9 to 0	-23	F	20km
DSFP5X24-D12LC-40	T 1550DFP /R 1100~1610	LC	-20 to 70	-5~0	-24	T	40KM
DSFP6124-C12LC-80	T 1610 CWDM/ R 1100~1610	LC	-20 to 70	-3 to 2	-26	T	80km

7 Designing notice



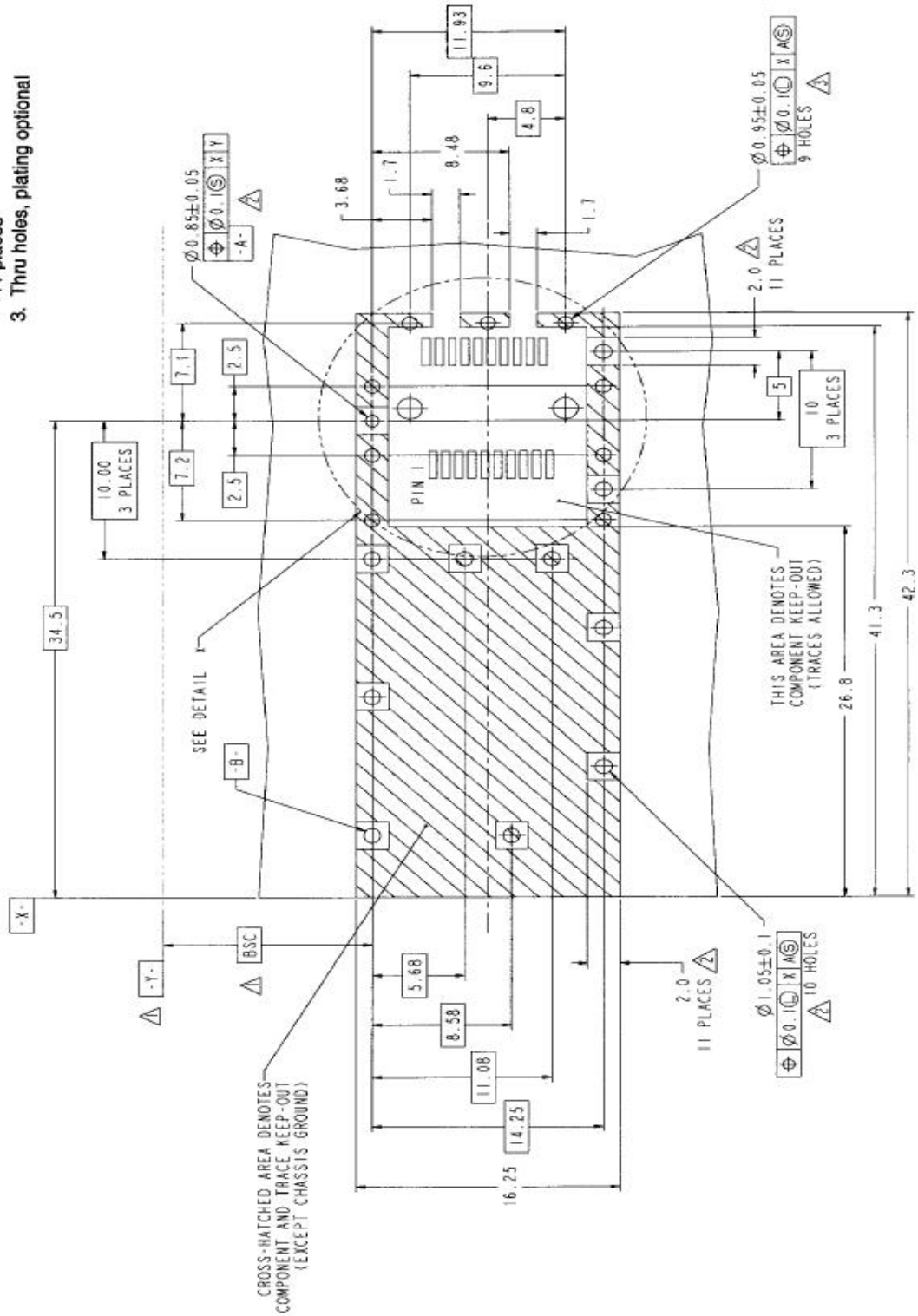
Pinout of Connector Block on Host Board

DSFP Pin description

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

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

- Notes:
1. Datum and basic dimensions established by customer
 2. Pads and vias are chassis ground, 11 places
 3. Thru holes, plating optional



SFP Host Board Mechanical Layout

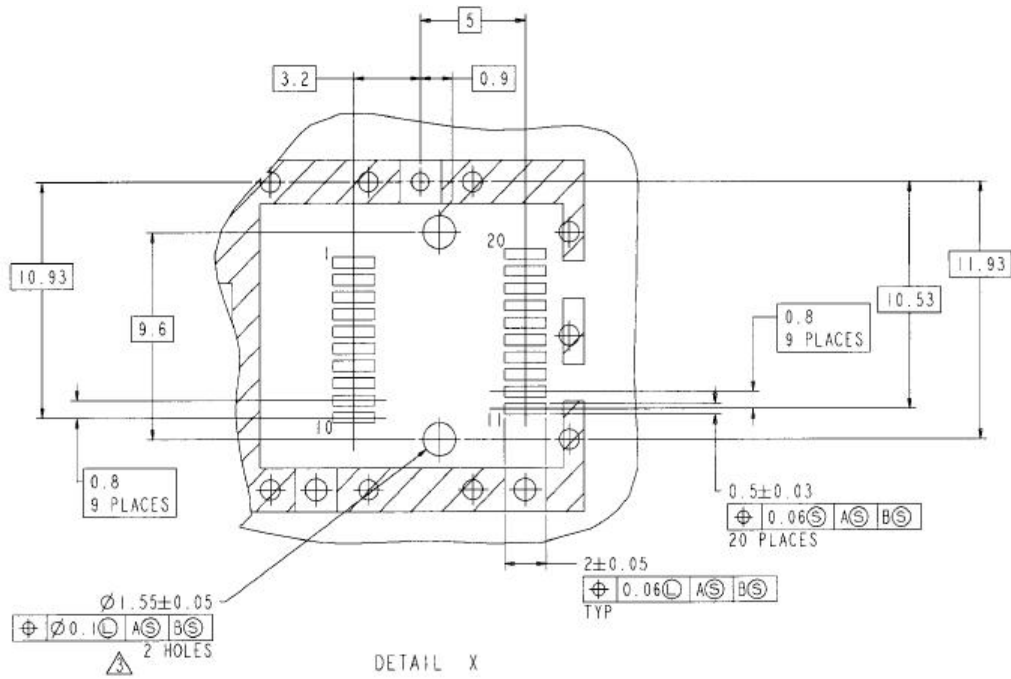
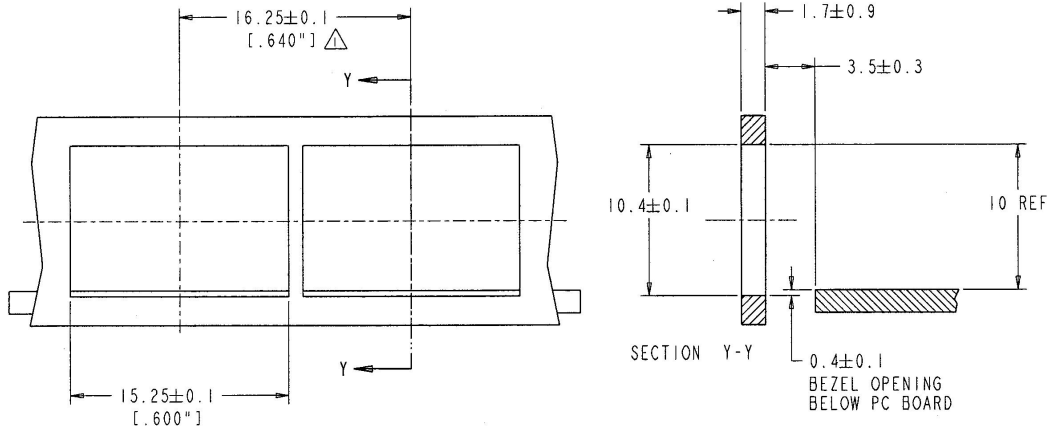


Figure 6 SFP Host Board Mechanical Layout (Cont.)



NOTES:

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

Recommended Bezel Design