

## 0-10Mb/s Duplex Fibers SFP Optical Transceiver

### Applications

- Applied to RS232、RS485 optical-electrical converter for electric power control and industrial control with bit rate up to 10Mbps

### Features

- Up to 10Mb/s data rate
- Single mode and Multi-mode
- Module integrates receive and transmit circuits of two parts
- All-metal shell and the shell with plastic end plug form, LC receptacle.
- Hot-pluggable
- Metropolitan area network
- Single +3.3V power supply
- Standard PECL data output and input with signal detect indication
- High quality 1310nm MQW-FP LD or 850nm VCSEL LD
- Commercial level and Industrial level products for customers
- Compliant with SFP MSA
- ROHS compliance



### Specifications

Absolute Maximum Ratings						
Parameters	Symbol	Min	Type	Max	unit	
Storage temperature (°C)	T <sub>s</sub>	-40		+85	°C	
Supply voltage(V)	V <sub>cc</sub>	-0.5		3.63	V	
Relative Humidity	R <sub>H</sub>	5		95	%	
Recommended Operating Conditions						
Case Operating Temperature Range (°C)	T <sub>c</sub>	-40		+85	°C	Industrial level
	T <sub>c</sub>	0		70	°C	Commercial level
Supply voltage(V)	V <sub>cc</sub>	+3.135	+3.3	+3.465	V	
Data rate				10	Mb/s	
Transceiver Electrical Characteristics Top=23°C@3.3v supply voltage						
Module Supply Current	I <sub>cc</sub>			50	mA	
Inrush Current	I <sub>RUSH</sub>			30	mA	
Input differential impedance	R <sub>in</sub>		100		Ω	
Transmitter Single Ended Input Voltage (TD±)	V <sub>in</sub>	100		1200	mV	
Transmit Fault(TX_Fault)	V <sub>OH</sub>	2.0		3.3	V	
LOSS of Signal (LOS)	V <sub>OL</sub>	0		0.8	V	

Parameters	Symbol	Min	Typ	Max	Unit	Remark
Transmit Disable Input Low	$V_{IL}$	0		0.8	V	
Transmit Disable Input High	$V_{IH}$	2.4		3.3	V	
Receiver Single Ended Output Voltage (RD±)	$V_{out}$	200		800	mV	
<b>Optical transmitter Characteristics Top=23°C@3.3v supply voltage</b>						
Center Wavelength	$\lambda$	1260	1310	1360	nm	FP
		830	850	870	nm	VCSEL
Optical Power	$P_0$	See the Optical Parameters Table below				
Optical Rise Time	$T_r$		120	150	ps	
Optical Fall Time	$T_f$		120	150	ps	
Extinction Ratio	Ext	8.2			dB	
Spectral Width (-20dB)	$\Delta\lambda$			4	nm	FP-LD,RMS
	$\Delta\lambda$			1	nm	DFB-LD,-20dB
Eye Mask	Compliant with Eye Mask Defined in IEEE 802.3					
<b>Optical receiver Characteristics Top=23°C@3.3v supply voltage</b>						
Center Wavelength	$\lambda$	1100		1650	nm	
Receive Optical Sensitivity	Sen	See the Optical Parameters Table below				
LOS output (TTL high level)	$V_{LOS}$	2			V	
Receiver Overload	$P_{inMAX}$	-3			dBm	
LOS Assert	$P_{LOS\_A}$	-20			dBm	@1M 1310nm
LOS Deassert	$P_{LOS\_D}$			-18	dBm	@1M 1310nm
LOS Hysteresis	$P_H$	0.5	2	4	dB	$10\log(V_{DE-ASSERT}/V_{ASSERT})$

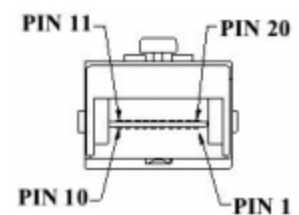
## Optical Parameters Table

### Data rate\LD\Wavelength and mode\Optical output power\Sensitivity\Reach

Data Rate	LD	Wavelength (nm) mode	Optical output power P0 (dBm)	Sensitivity (dBm)	Reach (km)
0-1Mb/s	1310nm FP	SM 1310nm	≥-8	≤-20	20km
0-1Mb/s	1310nm FP	MM 1310nm	≥-12	≤-20	2km
0-1Mb/s	85nm VCSEL	MM 850nm	≥-8	≤-16	1km
0-10Mb/s	1310nm FP	SM 1310nm	≥-8	≤-16	10km
0-10Mb/s	1310nm FP	MM 1310nm	≥-8	≤-16	2km
0-10Mb/s	85nm VCSEL	MM 850nm	≥-8	≤-14	0.5km

## Pin Arrangement

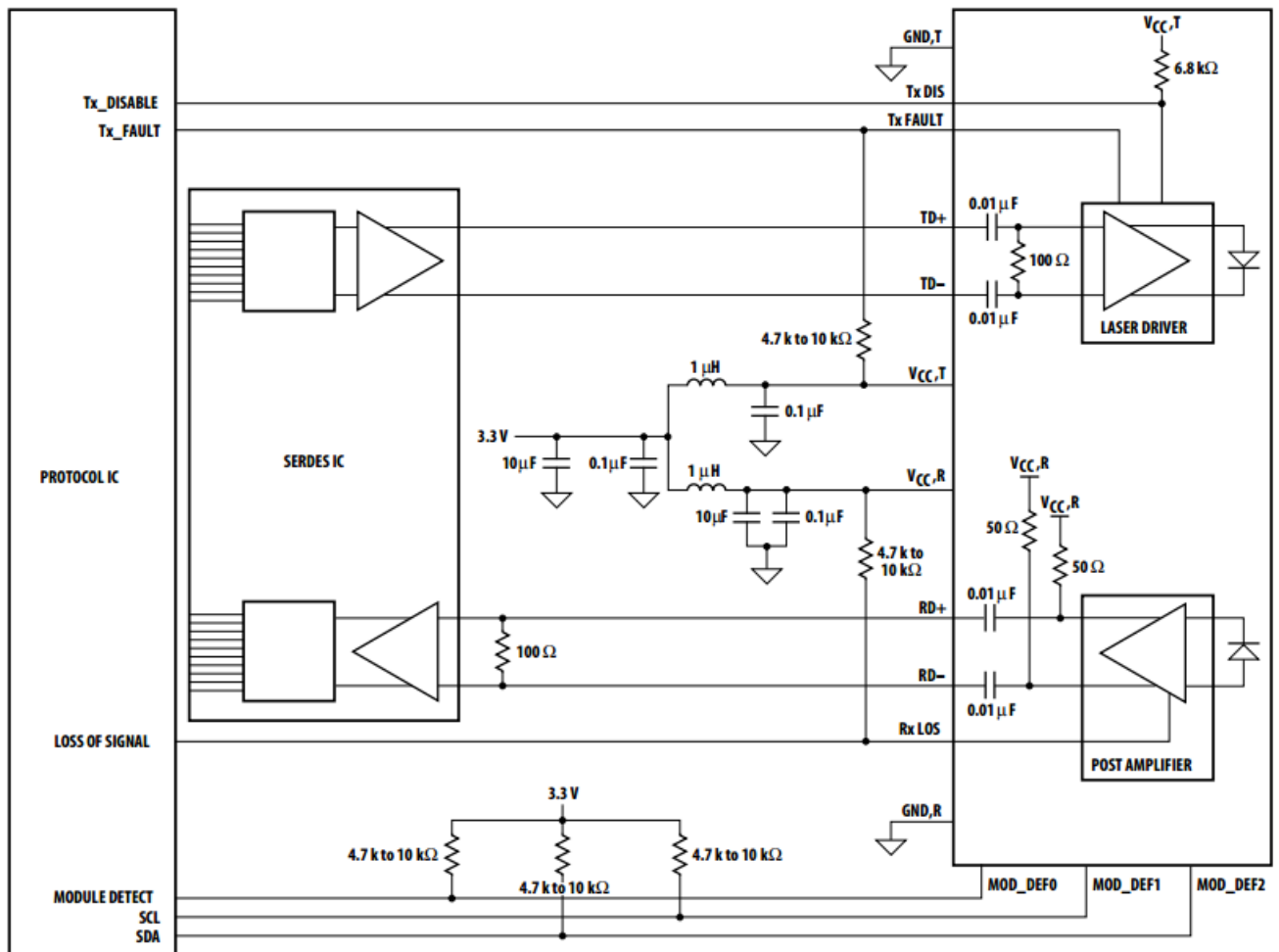
20 VEET	1 VEET
19 TD-	2 TX Fault
18 TD+	3 TX Disable
17 VEET	4 MOD_DEF(2)
16 VCCT	5 MOD_DEF(1)
15 VCCR	6 MOD_DEF(0)
14 VEER	7 Rate Select
13 RD+	8 LOS
12 RD-	9 VEER
11 VEER	10 VEER



## Pin Definitions

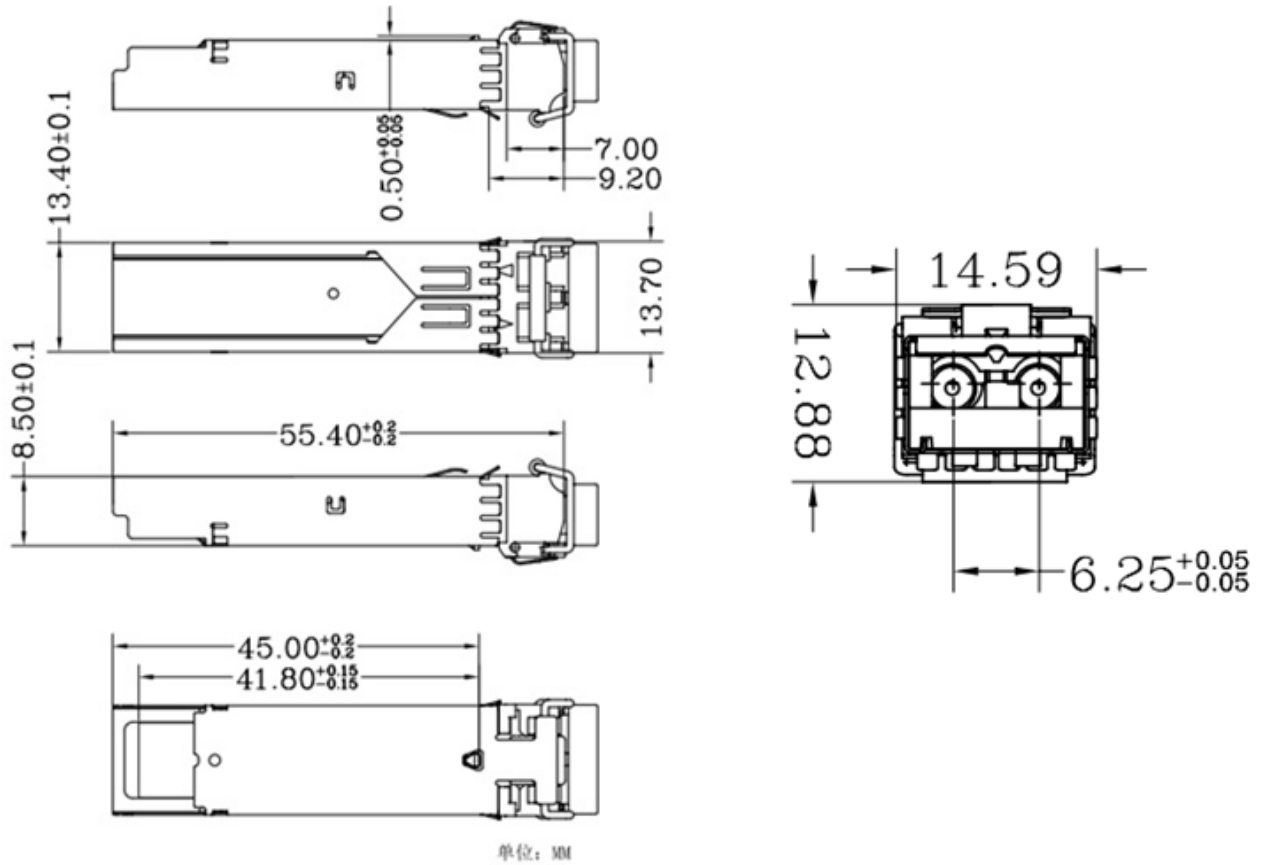
Pin	Name	Function/Description
1	VeeT	Transmitter Ground
2	TX Fault	Transmitter Fault Indication
3	TX Disable	Transmitter Disable-Module disables on high or open
4	MOD-DEF2	Module Definition 2-Two wire serial ID interface
5	MOD-DEF1	Module Definition 1-Two wire serial ID interface
6	MOD-DEF0	Module Definition 0-Two wire serial ID interface
7	Rate Select	Not Connected
8	LOS	Loss of Signal
9	VeeR	Receiver Ground
10	VeeR	Receiver Ground
11	Veer	Receiver Ground
12	RD-	Inverse Received Data out
13	RD+	Received Data out
14	VeeR	Receiver Ground
15	VccR	Receiver Power --- +3.3V
16	VccT	Transmitter Power --- +3.3 V
17	VeeT	Transmitter Ground
18	TD+	Transmitter Data In
19	TD-	Inverse Transmitter Data In
20	VeeT	Transmitter Ground

## SFP Recommended Application Configuration

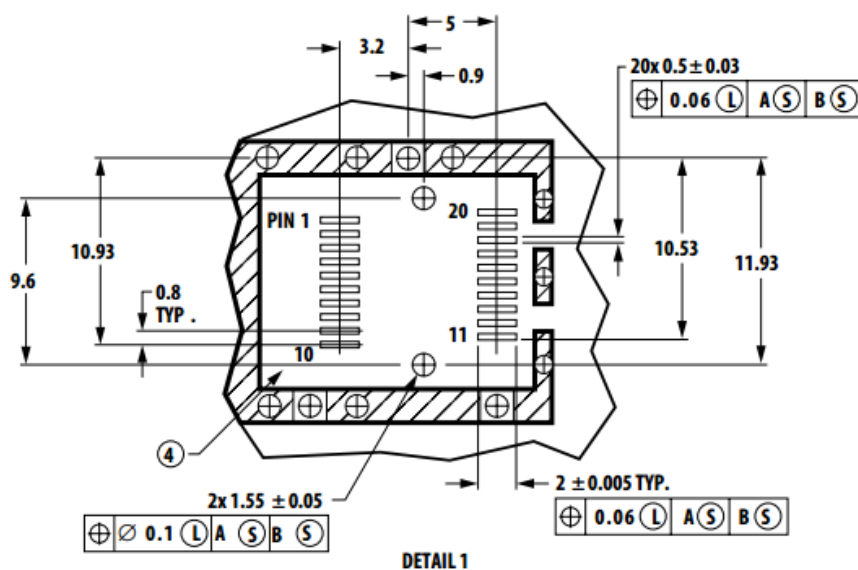
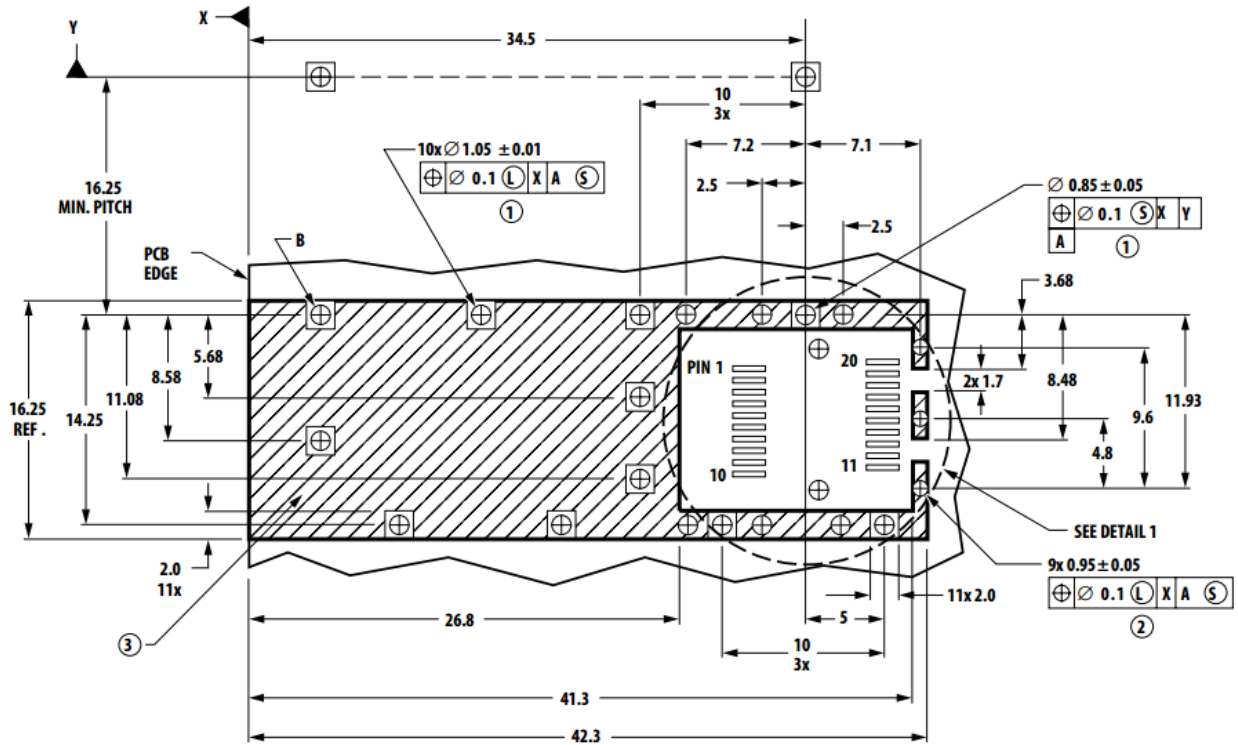


## SFP Mechanical Dimensions

### SFP Duplex-LC



### SFP Host Board Mechanical Layout



**LEGEND**

1. PADS AND VIAS ARE CHASSIS GROUND
  2. THROUGH HOLES, PLATING OPTIONAL
  3. HATCHED AREA DENOTES COMPONENT AND TRACE KEEPOUT (EXCEPT CHASSIS GROUND)
  4. AREA DENOTES COMPONENT KEEPOUT (TRACES ALLOWED)
- DIMENSIONS ARE IN MILLIMETERS

订购信息

Order Information

