

10Gb/s 300m SFP+ Transceiver

SFP10G300M



DESCRIPTION

This product is a 10Gbps enhanced small form factor pluggable SFP+ transceiver compatible with 10GBASE-SR/SW. It is suitable for multi-mode fiber (MMF) communications in 10Gbps Ethernet.

Regulatory Compliance

This product is Class 1 Laser Products comply with FDA regulations. Meet Class 1 eye safety requirements of EN 60825 and the electrical safety requirements of EN 60950.

APPLICATIONS

- 10GBase-SR/SW 10G Ethernet

FEATURES

- Up to 10Gbps data links
- 300m with 50/125µm 2000MHz MMF
- 850nm VCSEL laser
- Duplex LC Connector
- Hot-pluggable SFP+ footprint
- Single 3.3V power supply
- Operating temperature: 0 ~ 70°C
- RoHS
- Digital Diagnostic Monitor(DDM)
- Power Consumption < 0.8W

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit	Notes
Supply Voltage	Vcc	-0.5	4	V	
Storage Temperature	Ts	-40	85	°C	
Operating Case Temperature	Tc	0	70	°C	

Recommended Operating Conditions and Power Supply Requirements

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Operating Case Temperature	T _c	0		70	°C	
Power Supply Voltage	V _{cc}	3.15	3.3	3.45	V	
Power Supply Current	I _{cc}			200	mA	
Data Rate			10		Gbps	
Max Link Length on 50/125µm 2000MHz MMF	L _{max}			300	m	

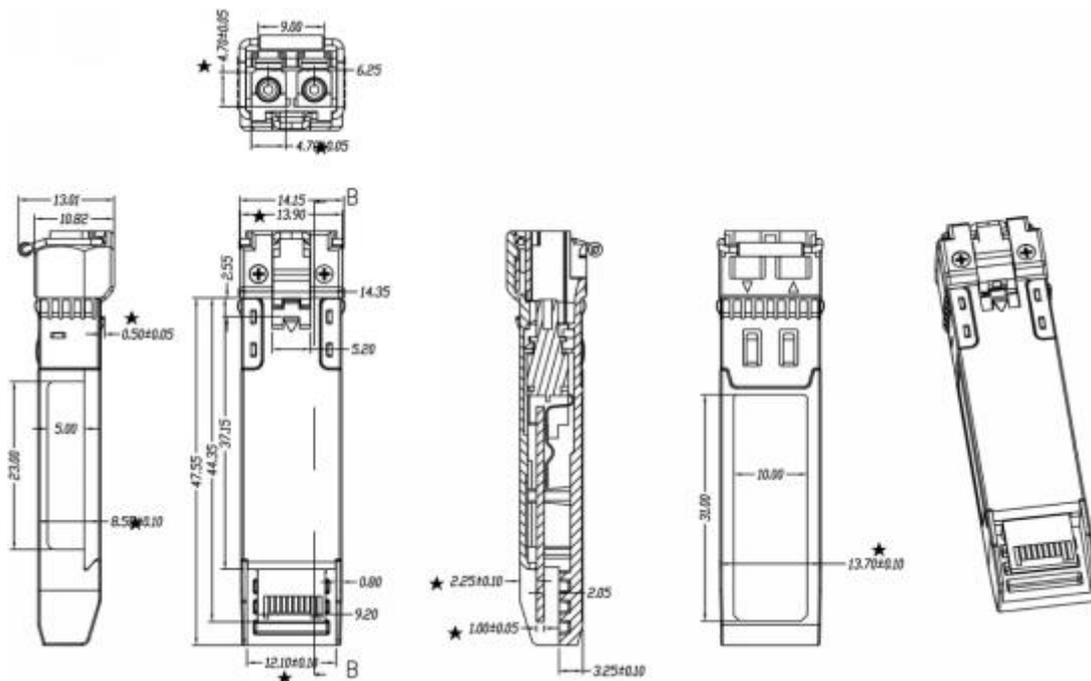
Optical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Centre Wavelength	λ _c	840	850	860	nm	
Spectral Width (RMS)	σ			0.5	nm	
Average Output Power	P _{out}	-5		0	dBm	
Extinction Ratio	ER	3.5			dB	
Average Launch Power of Off Transmitter	P _{off}			-30	dBm	
Receiver						
Centre Wavelength	λ _c	840	850	860	nm	
Receiver Sensitivity	P _{IN}			-13	dBm	
Receiver Overload	P _{max}	0.5			dBm	
LOS De-Assert	LOS _D			-16	dBm	
LOS Assert	LOS _A	-18			dBm	
LOS Hysteresis		0.5			dB	

Electrical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Input Differential Impedance	Zin	90	100	110	Ω	
Data Input Swing Differential	Vin	200		700	mV	
Tx-Dis Disable	Vd	2.0		Vcc	V	
Tx-Dis Enable	Ven	0		0.8	V	
Receiver						
Data Output Swing Differential	Vout	300		800	mV	
Rx-Los Fault	Vlf	2.0		VccHOST	V	
Rx-Los Normal	Vln	0		0+0.8	V	
Output rise and fall time	Tr, Tf	28			ps	

Mechanical Dimensions



EEPROM

2 wire address 1010000X (A0h)

0~95 Serial ID Defined by SFP MSA (96 bytes)
96~127 Vendor Speific (32 bytes)
128~255 Reserved (128 bytes)

DDM THRESHOLD

	Low Alarm	Low Warn	High Warn	High Alarm
Temperature	-5°C	0°C	70°C	75°C
Voltage	2.9V	3V	3.6V	3.7V
Tx Bias	4mA	5mA	10.8mA	11.8mA
Tx Power	-6dBm	-5dBm	-1dBm	0dBm
Rx Power	-16dBm	-14dBm	-1dBm	0dBm

Pin Assignment and Description

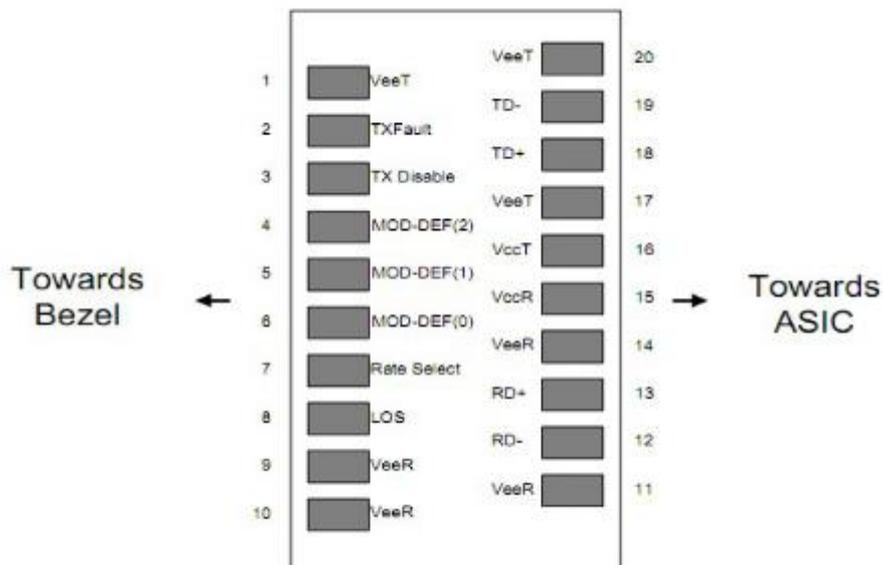


Diagram of Host Board Connector Block Pin Numbers and Names

Pin Assignment

Pin#	Symbol	Description	Notes
1	VEET	Transmitter Ground (Common with Receiver Ground)	1
2	TFAULT	Transmitter Fault. Not supported.	
3	TDIS	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	RS0	Rate Select0, optionally controls SFP+ module receiver. When high input signaling rate > 4.25 GBd and when low input signaling rate < 4.25 GBd	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	4
9	RS1	Rate Select1, optionally controls SFP+ module receiver. When high input signaling rate > 4.25 GBd and when low input signaling rate < 4.25 GBd	
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. 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.

