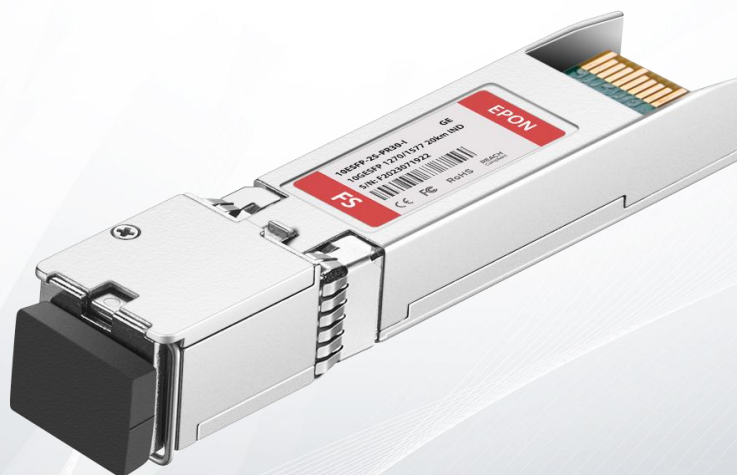


10G EPON ONU SFP+ 1270nm-Tx/1577nm-Rx 10.3125G-TX/10.3125G-RX PR30 20km DOM SC SMF Optical Transceiver Module (Industrial)

10ESFP-25-PR30-I



Features

- Support IEEE 802.3 10GBASE-PR30 Power Budget
- 1270nm Burst-Mode Transmitter with DFB Laser
- 1577nm Continuous-Mode Receiver with APD-TIA
- Sleep Mode for Power Consumption
- SFP+ Formfactor with 20km Transmission
- Compliant Digital Diagnostic SFF-8472 Rev11.0
- Single 3.3V Power Supply
- Simplex SC/UPC Connector Bi-directional
- Telcordia GR-468 Compliant
- Commercial and Industrial Case Temperature Available
- RoHS Compliance with Exemptions
- Class 1 Laser Product

Description

The EPON ONU SFP transceiver provides up to 10.3125G-TX/10.3125G-RX up to 20km over single-mode fiber (SMF) using a wavelength of 1270nmTx/1577nmRx via an SC/UPC connector. It can operate at temperatures between -40° C and 85° C. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. It is fully compliant with IEEE802.3 PR30 20km application and is ideal for 10G EPON system and FTTx applications.

Product Specifications

I. Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit	Note
Storage Ambient Temperature	T _s	-40	85	° C	
Operating Case Temperature (10G EPON ONU-CDFE)	T _c	0	70	° C	
Operating Case Temperature (10G EPON ONU-IDFE)	T _c	-40	85	° C	
Operating Relative Humidity	RH	5	85	%	
Power Supply Voltage	V _{CC}	0	4	V	
Maximum Reach			20	Km	

II. Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Power Supply Voltage	VCC	3.14	3.3	3.47	V	
Power consumption	Pw	-	-	2	W	
Data Rate	DR	10.3125 ± 100ppm			Gbit/s	

III. Optical Characteristics

Parameter	Symbol	Unit	Min.	Typ.	Max.	Note
Transmitter						
Centre Wavelength	λ_C	nm	1260	1270	1280	
Spectral Width (-20dB)	$\Delta\lambda$	nm	-	-	1	
Side Mode Suppression	SMSR	dB	30	-	-	
Average Launch Power	P _{OUT}	dBm	4	-	9	1
Average Launch Power-OFF	P _{OFF}	dBm	-	-	-45	1
Extinction Ratio	EX	dB	6	-	-	2
Transmitter and Dispersion Penalty		dB	-	-	3	
Transmitter Reflectance		dB	-	-	-10	
Optical Return Loss Tolerance		dB	-	-	-15	
RIN15OMA		dB/Hz	-	-	-128	
Optical Eye Mask	Compliant With IEEE Std 802.3					2,3
Receiver						
Operating Wavelength	λ_C	nm	1575	1577	1580	
Receiver Reflectance		dB	-	-	-12	
Sensitivity	PSEN1	dBm	-	-	-28.5	4
Saturation	PSAT	dBm	-10	-	-	4
Bit Error Ratio			10E-3更改为1E-3			
Loss of Signal Deassert	PLOSD	dBm	-		-30	5
Loss of Signal Assert Level	PLOSA	dBm	-44	-	-	6
WDM Filter Isolation	ISO(1400~1560nm)	dB	35	-	-	



Parameter	Symbol	Unit	Min.	Typ.	Max.	Note
WDM Filter Isolation	ISO(1600~1675 nm)	dB	35	-	-	

- Notes:
- 1. The optical power is launched into 9/125um SMF.
 - 2. Measured with PRBS 231- 1 test pattern @10.3125Gbps.
 - 3. Transmitter eye mask definition {0.25,0.40,0.45,0.25,0.28,0.40}
 - 4. Measured with a PRBS 231- 1 test pattern @10.3125Gbps and ER=6dB, BER ≤10-3 , TX=on.
 - 5. An increase in optical power above the specified level will cause Los of Signal (LOS) output to switch from a low state to a high state.
 - 6. A decrease in optical power below the specified level will cause Los of Signal (LOS) output to switch from a high state to a low state.

IV. Electrical Characteristics

Parameter	Symbol	Unit	Min.	Typ.	Max.	Note
Time to Initialize	t-start-up	ms	-	-	300	
Transmitter						
Data Input Differential Swing	VIN	mVp-p	200	-	1000	1
Input Differential Impedance	ZIN	Ω	80	100	120	
Transmitter Disable Voltage - Low	VTDIS,L	V	0		0.8	2
Transmitter Disable Voltage - High	VTDIS, H	V	2.0		Vcc	
Power Down Voltage _Low	V_PDL		0		0.8	
Power Down Voltage _High	V_PDH		2.0		Vcc	
TX Fault Assert Time	T_FAULT_on	ms	-	-	50	
TX Fault Reset Time	TX_FAULT_R ESET	μs	10	-	-	
Burst Turn On Time	TBURST-ON	ns			100	
Burst Turn Off Time	TBURST-OFF	ns			100	
TX Power Down Assert Time	T_PD assert	ns			512	3
TX Power Down De-assert Time	T_PD recover	ns			512	4

Parameter	Symbol	Unit	Min.	Typ.	Max.	Note
Receiver						
Data Output Differential Swing	VOUT	mVP-P	600		850	5
Loss of Signal (LOS)Assert Time	TLOSA	μs	-	-	100	
Loss of Signal(LOS) Deassert Time	TLOSD	μs	-	-	100	
Output Differential Impedance	ROUT	Ω	80	100	120	
RX-LOS	VOL	V	0	-	0.4	
RX-LOS	VOH	V	2.4		Vcc	

- Notes:
- 1. Compatible with CML input, AC coupled internally.
 - 2. TX_nBRST
 - 3. Measured to 10% of final supply current
 - 4. Measured to 90% of final supply current
 - 5. CML output, AC coupled internally

V. Pin Definitions

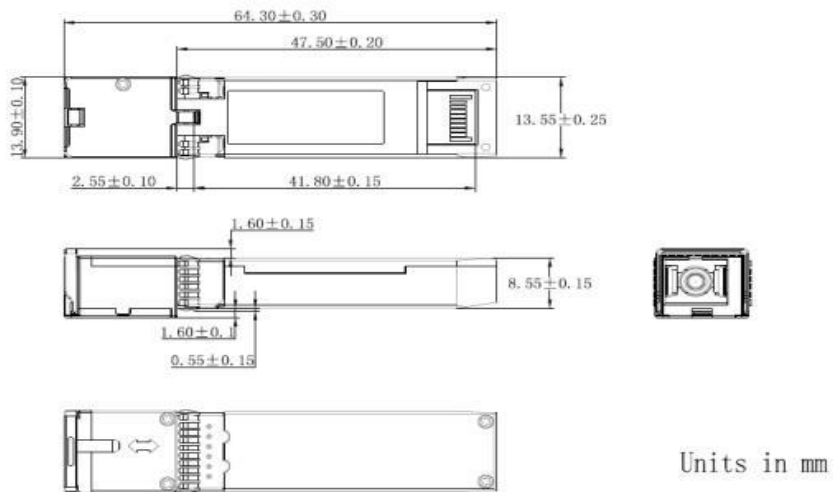
Pin	Logic	Name	Description
1		VEET(1)	Module Ground
2	LVTTL-O	TX_FAULT(2)	Module Transmitter Fault
3	LVTTL-I	TX_nBRST	Transmitter Burst Control, Low: Tx=ON, High: TX=Disabled
4	LVTTL-I/O	SDA	2—wire serial Interface Data line
5	LVTTL-I	SCL	2—wire serial Interface Clock
6		MOD_ABS	Connect to VEET OR VEER in the Module
7	LVTTL-O	TX_SD	TX Signal detected
8	LVTTL-O	RX_LOS ⁽³⁾	Receiver Loss of Signal Indication(in FC designated as RX_LOS,in SONET Designated as Los,as in Ethernet Designated as not Signal Detect)
9	LVTTL-I	PDWN_TX ⁽⁴⁾	Power saving of Tx side, On/off time less than 1ms, high active, if not use this feature, main board connection should be NC.

Pin	Logic	Name	Description
10		VEER	Module Receiver Ground
11		VEER	Module Receiver Ground
12	CML-O	RD-	Receiver inverted Data Output
13		RD+	Receiver Non-inverted Data Output
14		VEER	Module Receiver Ground
15		VCCR	Module Receiver 3.3 Supply
16		VCCT	Module Transmitter 3.3 Supply
17		VEET	Module Transmitter Ground
18	CML-I	TD+	Transmitter Non-inverted Data Input
19		TD-	Transmitter Inverted Data Input
20		VEET	Module Transmitter Ground

Notes:

- 1. The module ground pin, VeeT and VeeR, shall be isolated from the module case.
- 2. Shall pulled up with 4.7K- 10K ohm to a VccT in the module.
- 3. This pin is an open collector/drain output pin and shall pulled up with 4.7K- 10K ohm to a Host-Vcc on the host board.
- 4. Tx Power saving function timing: Tx_Sleep

VI. Mechanical Diagram



VII. Ordering Information

Part Number	Description
10ESFP-25-PR30-I	10GEPON ONU SFP+ 1270nm-Tx/1577nm-Rx 10.3125G-TX/10.3125G-RX PR30 20km DOM SC SMF Optical Transceiver Module (Industrial, 20PIN)
10ESFP-52-PR30-I	10GEPON OLT SFP+ 1577nm-Tx/1270nm-Rx and 1490nm-Tx/1310nm-Rx PR30 20km DOM SC SMF Optical Transceiver Module (Industrial, 20PIN)
ESFP-43-20PX30-I	EPON OLT 1000BASE-PX30 SFP 1490nmTx/1310nmRx 20km DOM SC SMF Optical Transceiver Module (Industrial, 20PIN)
ESFP-43-20	EPON OLT SFP 1490nm-TX/1310nm-RX 1.25G-TX/1.25G-RX 20km DDM SC SMF Transceiver Modules
ESFP-34-20N-I	EPON ONU SFP 1310nm-TX/1490nm-RX 1.25G-TX/1.25G-RX PX20+ 20km DDM SC SMF Optical Transceiver Module (Industrial)