

10GEPON-ONU-ASI

10GEPON OUN Asymmetric SFP+ PRX30 Transceiver



Product Features

- ❖ Single fiber bi-directional data links Asymmetric TX 1.25Gbps/RX10.3125Gbps application
- ❖ Single 3.3V power supply
- ❖ SFP+ package with SC Receptacle connector
- ❖ Hot-pluggable capability
- ❖ High power 1310nm DML DFB LD and high sensitivity 1577nm APD
- ❖ Support 20km transmission distance with SMF
- ❖ CML compatible data input/output interface

- ❖ Low power dissipation
- ❖ Low EMI and excellent ESD protection
- ❖ Digital diagnostic monitor interface
- ❖ RoHS compliance for SOEX3667-PSIGA
- ❖ -40°C to 85°C operating case temperature

Applications

- ❖ Asymmetric 10GE PON PRX30 ONU with 15~29dB attenuation range

Standards

- ❖ Complies with SFP+ MSA (SFF-8431)
- ❖ Complies with IEEE 802.3av
- ❖ Complies with SFF-8472 Rev 10.2
- ❖ Complies with FCC 47 CFR Part 15, Class B
- ❖ Complies with FDA 21 CFR 1040.10 and 1040.11, Class I
- ❖ Complies with FDA 21 CFR 1040.10 and 1040.11

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit	Notes
Storage Ambient Temperature	T _{STG}	-40	85	°C	
Operating Case Temperature	T _C	-40	85	°C	
Operating Humidity	OH	5	95	%	
Power Supply Voltage	V _{CC}	-0.5	3.6	V	

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Operating Case Temperature	T _c	-40		+85	°C
Power Supply Voltage	V _{CC}	3.13	3.3	3.47	V
Power Supply Current	I _{CC}		290	450	mA
Nominal Upstream Line Rate			1.25		Gbps
Nominal Downstream Line Rate			10.3125		Gbps

Transmitter Optical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Average Launch Optical Power	P _{OUT}	0.62	-	5.62	dBm	EOL, Launched into 9/125μm Single Mode Fiber
Extinction Ratio	ER	9	-	-	dB	
Center Wavelength	λ	1260	1310	1360	nm	
Spectrum Width (-20dB)	Δλ	-	-	1	nm	
Side Mode Suppression Mode	SMSR	30			dB	
Burst on Time	T _{on}			30	ns	
Burst off Time	T _{off}			30	ns	
Transmitter and Dispersion Penalty	TDP			1.4	dB	
Eye Diagram	Compliant With IEEE Std 802.3ah™-2004					PRBS 2 ⁷ -1 test pattern @1.25Gbit/s

Transmitter Electrical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Input Differential Impedance	Z _{IN}	90	100	110	Ω	
Data Input Swing Differential	V _{IN}	200	-	1600	mV	
Burst_Enable	Burst Disable	2.0	-	V _{CC}	V	
	Burst Enable	0	-	0.8	V	

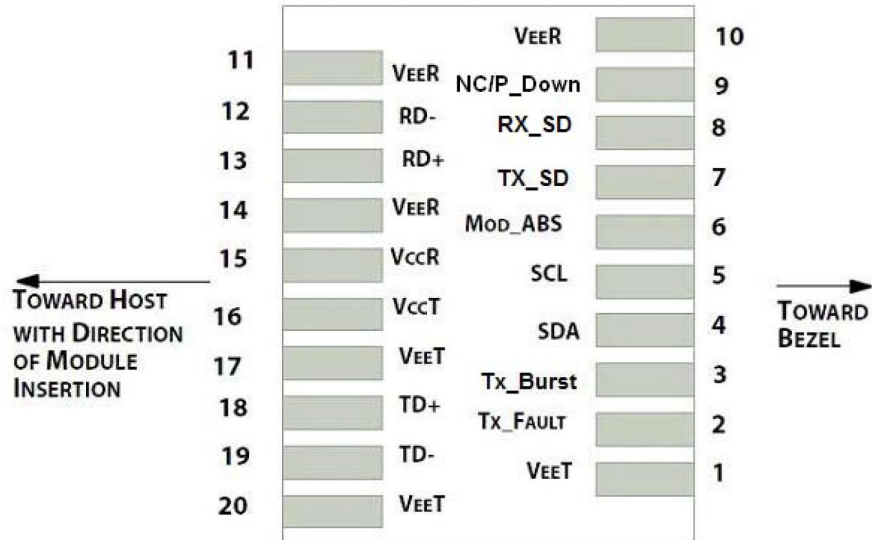
Receiver Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Operating Center Wavelength	λ_c	1575		1580	nm	
Receiver Sensitivity				-28.5	dBm	Measured with PRBS 2 ³¹ -1 test pattern @10.3125Gbit/s, BER ≤ 1 × 10 ⁻³
Receiver Overload		-10			dBm	
Receiver Reflectance				-12	dB	
LOS De-Assert		-45			dBm	
LOS Assert				-29.5	dBm	
LOS Hysteresis		0.5		6	dB	
Data Output Swing Differential	V _{OUT}	340		850	mV	
LOS	High	2.4		V _{CC}	V	
	Low	0		0.4	V	

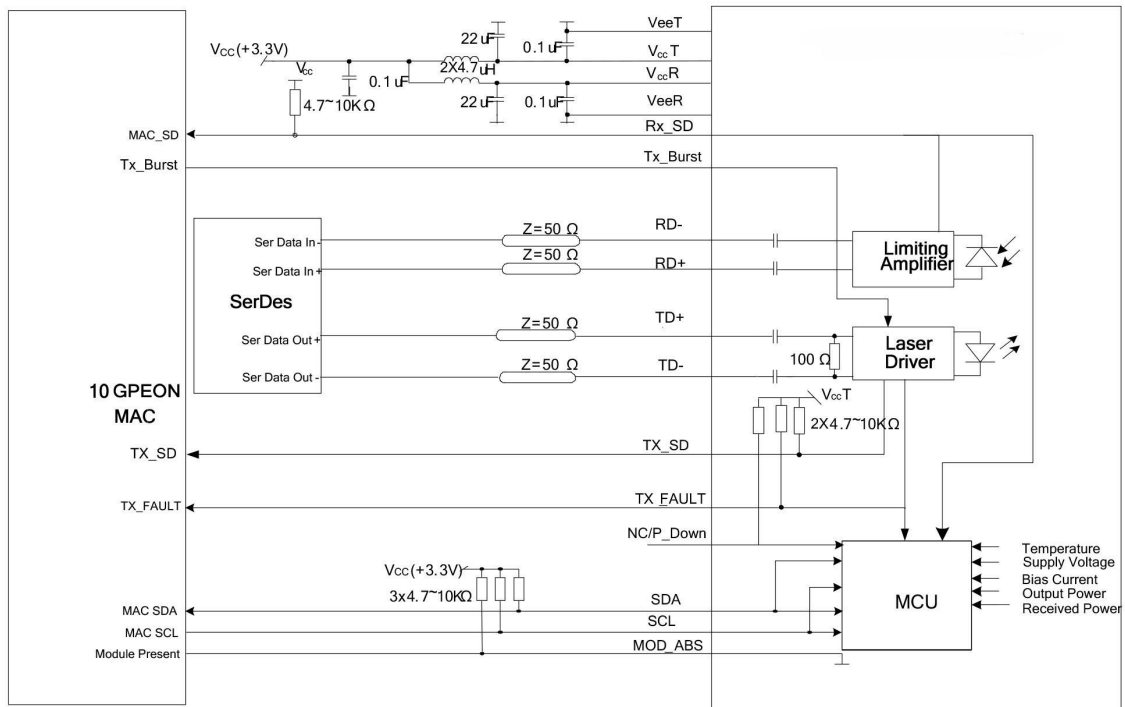
Pin Description

PIN	Name	Description	Notes
1	V _{EE} T	Module Transmitter Ground	
2	TX Fault	Module Transmitter Fault	Low: normal; High: abnormal
3	TX BURST	Transmitter Burst Enable	TTL Input, Low: transmitter on
4	MOD-DEF2	Module Definition 2	2 wire serial ID interface, SDA
5	MOD-DEF1	Module Definition 1	2 wire serial ID interface, SDL
6	Mod_ABS	Module Absent	Connected to VeeT or VeeR in the module
7	TX_SD	Tx Transmitter State Indication	TX_Indication Assert When Transmitter on
8	Rx_SD	Receiver Signal Indication	High: signal detected; Low: loss of signal
9	NC/P_Down	NC/ Module power down, Putting the module in the power saving mode	Active Low
10	V _{EE} R	Module Receiver Ground	
11	V _{EE} R	Module Receiver Ground	
12	RD-	Inverted Received Data Out	AC-coupled
13	RD+	Non-inverted Received Data Out	AC-coupled
14	V _{EE} R	Module Receiver Ground	
15	VCCR	Module Receiver 3.3V Supply	
16	VCCT	Module Transmitter 3.3V Supply	
17	V _{EE} T	Module Transmitter Ground	
18	TD+	Non-inverted Transmitter Data in	AC-coupled
19	TD-	Inverted Transmitter Data in	AC-coupled
20	V _{EE} T	Module Transmitter Ground	

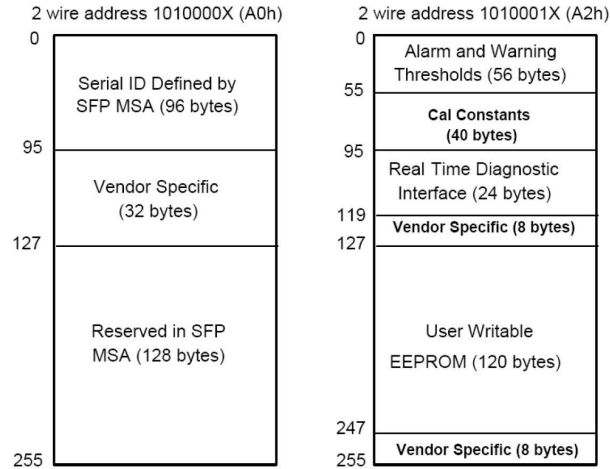
Pin Out Drawing



Typical Interface Circuit



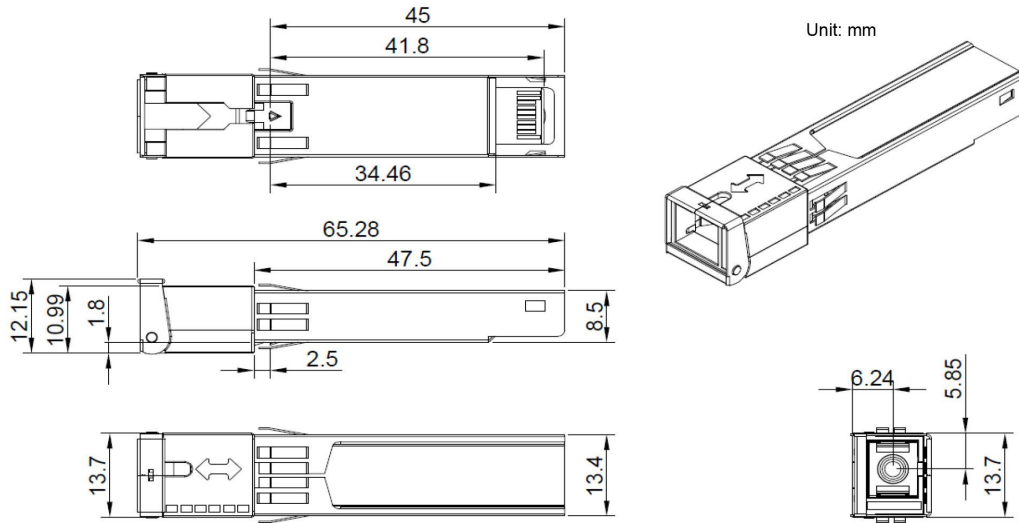
EEPROM Information



Digital Diagnostic Monitoring Interface

Parameter	Range	Accuracy	Calibration
Temperature	-40 to 85°C	±3°C	Internal
Voltage	3.0 to 3.6 V	±3%	Internal
Bias Current	0 to 100mA	±10%	Internal
TX Power	0.62 to 5.62dBm	±3dB	Internal
RX Power Monitor	-28.5 to -10dBm	±2dB	Internal

Package Outline



Ordering Information

Part Number	10GEPON-ONU-ASI
Application	Asymmetric 10GEPON ONU, -40°C~+85°C
Wavelength (nm)	1310T/1577R
Data Rate (Gb/s)	1.25T/10.3R
ODN Class	PRX30
Package	SFP+
Connector	SC