10GEPON-ONU-SI

10GEPON OUN Symmetric SFP+ PR30 Transceiver

Product Features

- Single fiber bi-directional data links Symmetric TX 10.3125Gbps/RX10.3125Gbps application
- Single 3.3V power supply
- SFP+ package with SC/UPC Receptacle connector
- Hot-pluggable capability
- High power 1270nm 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-6 compliance for SOEX2677-PSIGA
- -40 to 85°C operating case temperature

Applications

- Symmetric 10GEPON PR30 ONU with 15~29dB attenuation range

Standards

- Complies with SFP+ MSA (SFF-8431)
- Complies with IEEE 802.3av
- Complies with SFF-8472 Rev 10.4
- Complies with FCC 47 CFR Part 15, Class B
- 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	Tc	-40		+85	°C
Power Supply Voltage	V_{CC}	3.13	3.3	3.47	V
Power Supply Current	I_{CC}			600	mA
Nominal Upstream Line Rate			10.3125		Gbps
Nominal Downstream Line Rate			10.3125		Gbps

Transmitter Optical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Average Launch Optical Power	P_{OUT}	4		9	dBm	EOL, Over temperature, Launched into 9/125 μ m Single Mode Fiber
		5		9	dBm	BOL, Room temperature, Launched into 9/125 μ m Single Mode Fiber
Extinction Ratio	ER	6			dB	
Center Wavelength	λ	1260	1270	1280	nm	
Spectrum Width (-20dB)	Δλ	-	-	1	nm	
Side Mode Suppression Mode	SMSR	30			dB	
Burst on Time	Ton			30	ns	
Burst off Time	Toff			30	ns	
Transmitter and Dispersion Penalty	TDP			1.5	dB	
Eye Diagram	Compliant With IEEE Std 802.3av					PRBS 2^{31}-1 test pattern @10.3125Gbit/s

Transmitter Electrical Characteristics

Parameter		Symbol	Min	Typical	Max	Unit	Notes
Input Differential Impedance		ZIN	90	100	110	Ω	
Data Input Swing Differential		VIN	200	-	700	mV	
Burst_Enable	Burst Enable		2.0	-	V_{CC}	V	
	Burst Disable		0	-	0.8	V	

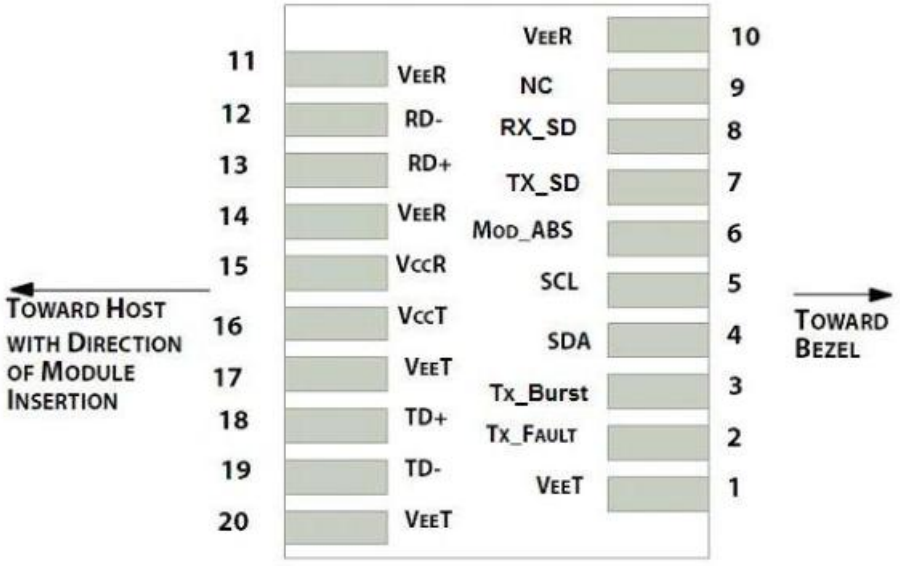
Receiver Characteristics

Parameter		Symbol	Min	Typical	Max	Unit	Notes
Operating Center Wavelength		λ_C	1575		1580	nm	
Receiver Sensitivity		SENS			-28.5	dBm	EOL, Over Temperature , Measured with PRBS 2^{31}-1 test pattern @10.3125Gbit/s, BER $\leqslant 1\times10^{-3}$
					-29	dBm	BOL, Room Temperature , Measured with PRBS 2^{31}-1 test pattern @10.3125Gbit/s, BER $\leqslant 1\times10^{-3}$
Receiver Overload			-10			dBm	
Receiver Reflectance					-12	dB	
Signal-Detected De-assert			-45			dBm	
Signal-Detected Assert Level					-31.5	dBm	
LOS Hysteresis			0.5		6	dB	
Data Output Swing Differential		V_{OUT}	300		850	mV	
LOS	High		2.4		Vcc	V	
	Low		0		0.4	V	

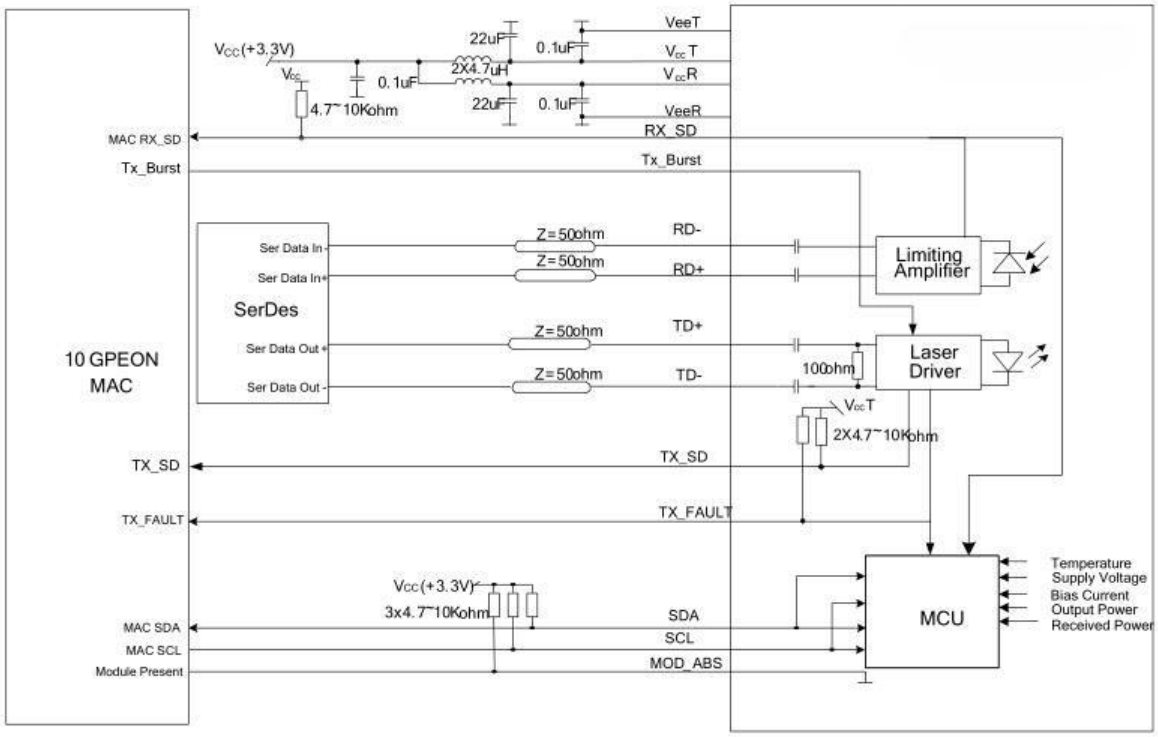
Pin Description

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	SDA	2-wire Serial Interface Data Line	Same as MOD-DEF2 in INF-8074i
5	SCL	2-wire Serial Interface Clock	Same as MOD-DEF1 in INF-8074i
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	Signal Indication	High: signal detected; Low: loss of signal
9	NC	NC	
10	$V_{EE}R$	Module Receiver Ground	
11	$V_{EE}R$	Module Receiver Ground	
12	RD-	Inverted Received Data Out	CML, AC-coupled
13	RD+	Non-inverted Received Data Out	CML, AC-coupled
14	$V_{EE}R$	Module Receiver Ground	
15	VCCR	Module Receiver 3.3 V Supply	
16	VCCT	Module Transmitter 3.3 V Supply	
17	$V_{EE}T$	Module Transmitter Ground	
18	TD+	Non-inverted Transmitter Data in	CML, AC-coupled
19	TD-	Inverted Transmitter Data in	CML, AC-coupled
20	$V_{EE}T$	Module Transmitter Ground	

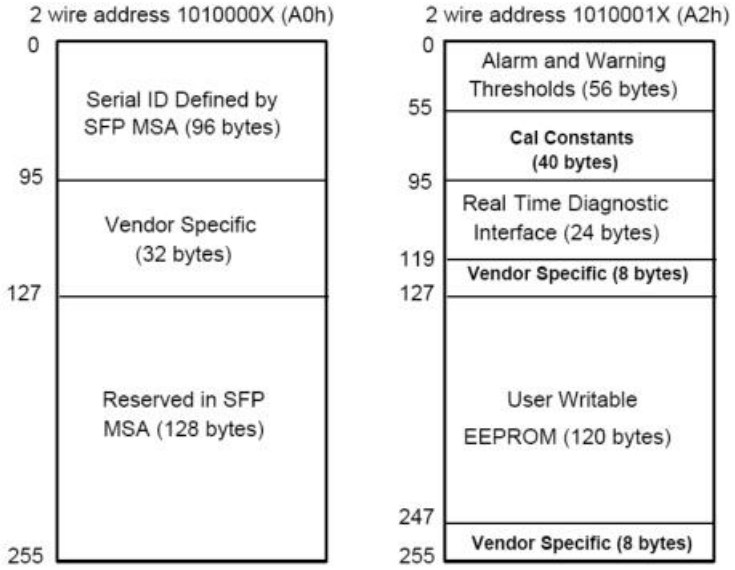
Pin Out Drawing



Typical Interface Circuit



EEPROM Information



Digital Diagnostic Monitoring Interface

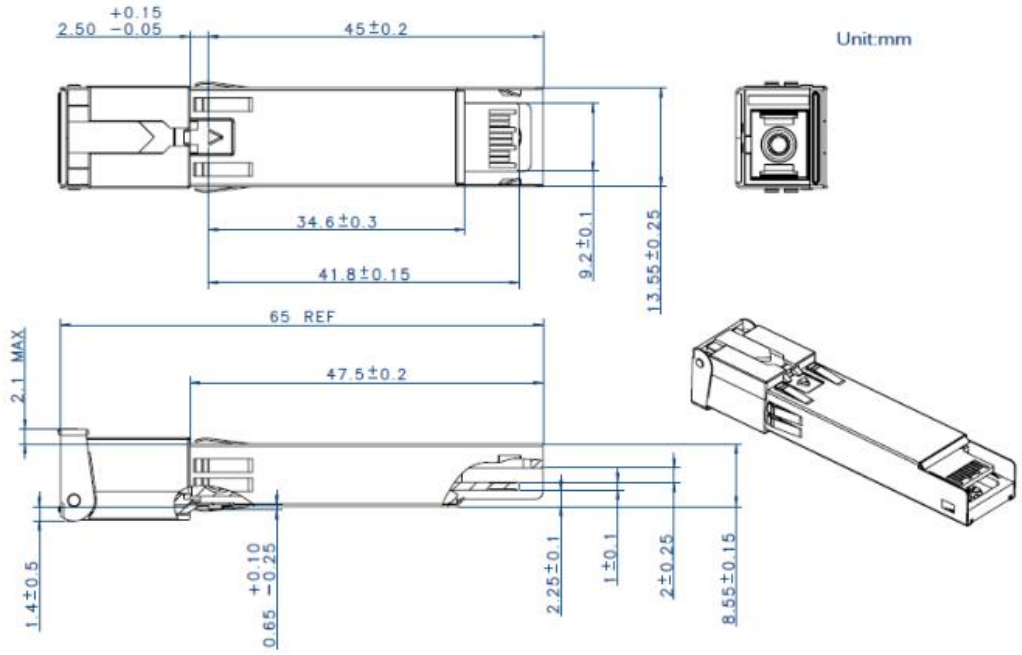
Five transceiver parameter values are monitored. The following table defines the monitored parameter' s accuracy.

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 131mA	±10%	Internal
TX Power	2 to 9dBm	±3dB	Internal
RX Power Monitor	-30 to -8dBm	±3dB	Internal

Note: Bias Current 4uA/LSB, TX Power 0.2uW/LSB

Package Outline

Unit:mm



Ordering Information

Part Number	10GEPON-ONU-SI
Application	Symmetric 10GEPON ONU, -40°C~+85°C
Wavelength (nm)	1270T/1577R
Data Rate (Gb/s)	10.3T/10.3R
ODN Class	PR30
Package	SFP+
Connector	SC