ZISA OP151XGS

XGSPON STICK ONU SFP+ Transceiver

Features

- Single fiber bi-directional data links symmetric TX 9.953 Gb/s / RX 9.953 Gb/s with MAC function
- SFP package with SC/APC receptacle
- Single 3.3 V power supply
- Hot-pluggable capability
- High power 1270 nm DML DFB LD and high sensitivity 1577 nmAPD
- Support 20km transmission distance with SMF
- CMLcompatible data input/output interface
- Low power dissipation < 2.5 W
- Low EMI and excellent ESD protection
- Digital diagnostic monitor interface
- RoHS-6 compliance
- Case temperature range:

  Commercial: 0 °C to 70 °C / Industrial: -40 °C to 85 °C
- Support of GPON/XGS-PON/NGPON2 standards
- 256 GEM/XGEM ports, 64 T-CONTs or 16 LLIDs
- Carrier Grade QoS Engine
- Advanced loopback and diagnostic capabilities
- Supports Synchronous Ethernet (SyncE)

Applications

- Residential home gateway
- Network switch/router, VDSL MDU, and G.fast DPU
- Mobile backhaul

Standard

- Complies with ITU-T G.987.2
- Complies with ITU-T G.9807.1, G.9807.2
- ITU-T G.988 OMCI L2 MAC Bridge (Up to 64 L2 bridges)
- G.8275/Y.1369/IEEE 1588v2
- IEEE 802.1ag and ITU-TY.1731 Ethernet OAM delay & loss measurement hardware support

1. Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit	Note
Storage Ambient Temperature	TSTG	-40	85	℃	
Operating Humidity	OH	5	95	%	
Supply Voltage	Vcc	0	3.6	V	

2. Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Operating Case Temperature	Tc	0		70	℃	Commercial
		40		85	℃	Industrial
Power Supply Voltage	Vcc	3.13	3.3	3.47	V	
Power Supply Current	Icc			1200	mA	
Nominal Upstream Line Rate			9.953		Gb/s	
Nominal Downstream Line Rate			9.953		Gb/s	

3. Transmitter Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Average Launch Optical Power	Pout	4		9	dBm	
Power-OFF Transmitter Optical	Pof			-45	dBm	
Extinction Ratio	ER	6			dB	
Centre Wavelength	λc	1260	1270	1280	nm	
Spectral Width (-20dB)	Δλ			1	nm	
Side Mode Suppression Mode	SMSR	30			dB	

Eye Diagram		Compliant With802.3av

4. Transmitter Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Input Diferential Impedance	ZIN	90	100	110	Ω	
Data Input Swing Diferential	VIN	200		1000	mV	
Burst Disable		2.0		Vcc	V	
Burst Enable		0		0.8	V	
Tx-Fault Voltage - Low		0		0.8	V	
Tx-Fault Voltage - HIGH		2.0		Vcc	V	

5. Receiver Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Optical Center Wavelength	λc	1575	1577	1580	nm	
Sensitivity	SEN			-29	dBm	
Receiver Overload	OL	-9			dBm	
LOSAssert	SDA	40			dBm	
LOS De-Assert	SDD			-29	dBm	
LOS Hysteresis		0.5		5	dB	
Data Output Swing Diferential	Vout	300		1200	mV	
LOS	High	2.0		Vcc	V	
	Low	0		0.8	V	

6. Pin Description

1	VeeT	Module Transmitter Ground	Host pull-up 4.7 KΩ– 10 KΩ
2	Tx_Fault	Module Transmitter Fault	Low = normal, High = abnormal, Host pull-up 4.7 KΩ– 10 KΩ
3	Tx-Disable	Transmitter Disable; turns oftransmitter laser	
4	Mod-Def(2)	SDAI2C Data line	2 wire serial ID interface, SDA, Host pull-up 4.7 KΩ– 10 KΩ
5	Mod-Def(1)	SCLI2C Clock line	2 wire serial ID interface, SCL, Host pull-up 4.7 KΩ– 10 KΩ
6	Mod-Def(0)	ModuleAbsent, connected to VeeR	Connected to VeeTor VeeR in the module, Host pull-up 4.7 KΩ – 10 KΩ
7	Rate Select	For Dying Gasp detect, input low active	
8	LOS	Loss of Signal	High = loss of signal, Low = normal operation, Host pull-up 4.7 KΩ – 10 KΩ

9	VeeR	Module Receiver Ground	
10	VeeR	Module Receiver Ground	
11	VeeR	Module Receiver Ground	
12	RD-	Inverted Received Data Out	InternallyAC-coupled
13	RD+	Non-inverted Received Data Out	InternallyAC-coupled
14	VeeR	Module Receiver Ground	
15	VccR	Module Receiver3.3 V Supply	
16	VccT	Module Transmitter 3.3 V Supply	
17	VeeT	Module Transmitter Ground	
18	TD+	Non-Inverted Transmit Data in	InternallyAC-coupled
19	TD-	Inverted Transmit Data in	InternallyAC-coupled
20	VeeT	Module Transmitter Ground	

7. Pin-out Drawing

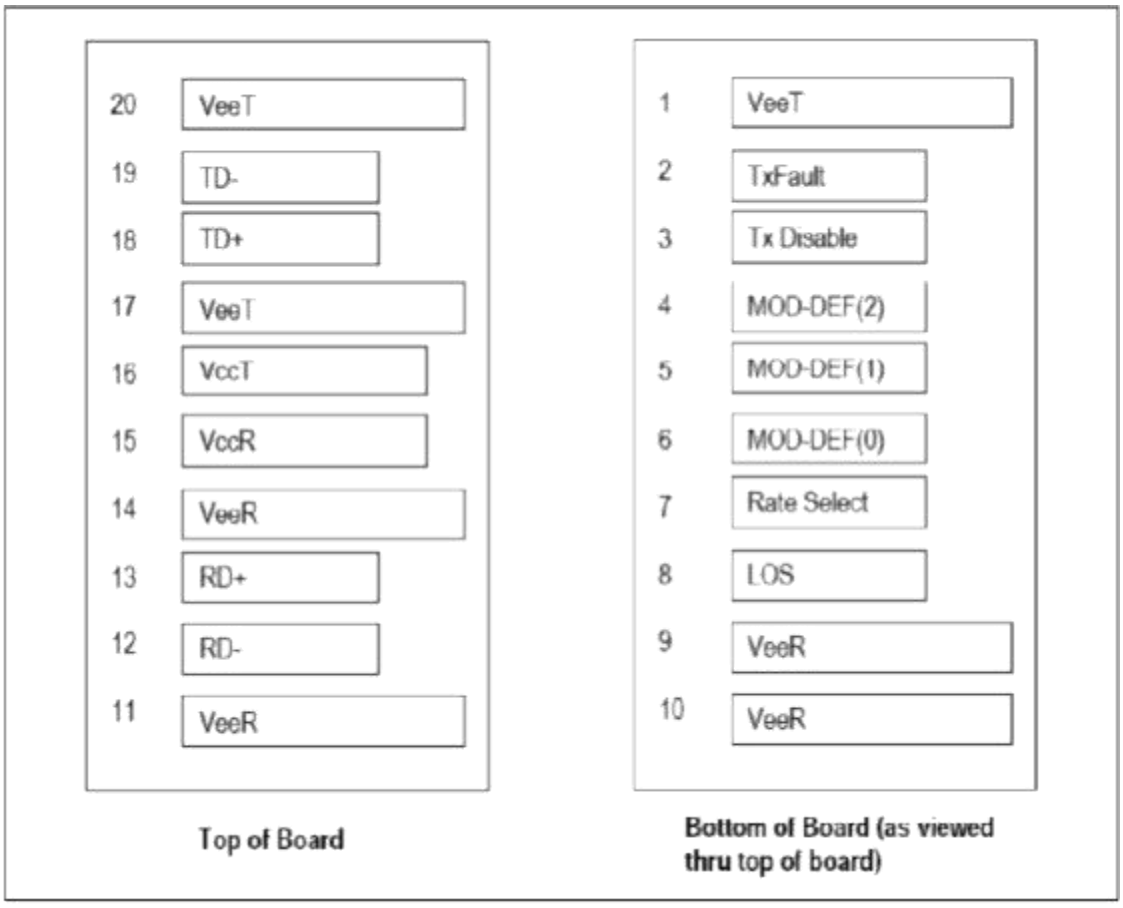

Figure 1. Pin-out Drawing

8. Package Outline

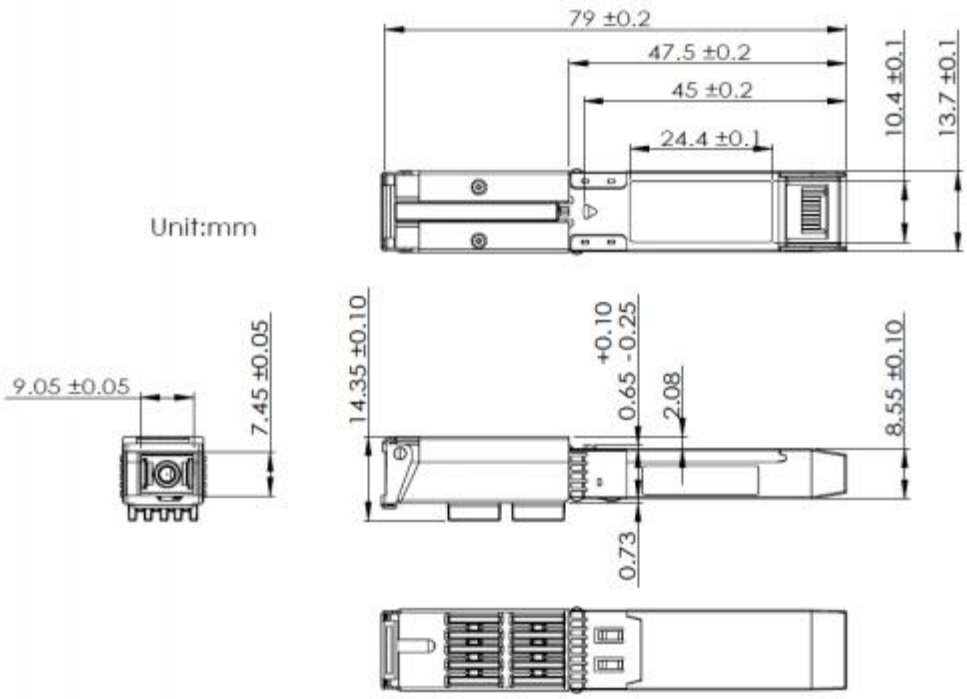

Figure 2. Package Outline

9. EEPROM Block Diagram

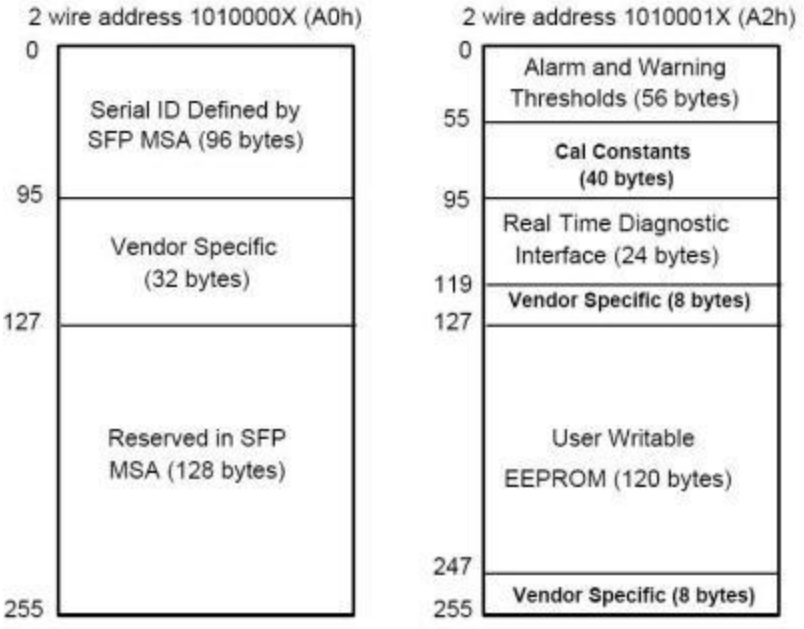

Figure 3. EEPROM Memory Map Specific Data Field Descriptions

10. Digital Diagnostic Monitoring Interface

Parameter	Range	Accuracy	Calibration	Notes
Temperature	0 to 70 ℃	±3 ℃	Internal	Commercial
	-40to 85 ℃			Industrial
Voltage	3 to 3.6 V	±3%	Internal	
Bias Current	0 to 131 mA	±10%	Internal	
TX Power	4 to9 dBm	±3 dB	Internal	
RX Power monitor	-29 to -9dBm	±3 dB	Internal	

11. Ordering Information

Part No.	Package	Data Rate	Reach	Wavelength	Temp.
OP151XGS	SFP+	TX: 9.953 Gb/s RX: 9.953 Gb/s	20 km	TX: 1270 nm RX: 1577 nm	0 to 70 ℃
OP151XGS	SFP+	TX: 9.953 Gb/s RX: 9.953 Gb/s	20 km	TX: 1270 nm RX: 1577 nm	-40 to 85 ℃

12. Warnings

- Handling Precautions: This device is susceptible to damage as a result of electrostatic discharge (ESD).Astatic free environment is highly recommended.
- Follow guidelines according to proper ESD procedures.
- Laser Safety: Radiation emitted by laser devices can be dangerous to human eyes.Avoid eye exposure to direct or indirect radiation.

ZISA Technologies Inc

Mail to: sales@zisacom.com

URL: http://www.zisacom.com

Specifications are subject to change without notice.