



Specification
Small Form Factor Pluggable
Immersion Liquid Cooling SFP28 Active Optical Cable
Dual Rate 25 Gigabit Ethernet/10 Gigabit Ethernet



TAS - AxZH8 - X3M ##



■ Features

- Hot pluggable
- Bit rate up to 25 Gbps
- 25G PIN photodetector
- 25G 850nm VCSEL transmitter
- Single +3.3Vcc power supply
- Low Power Consumption (< 1W each terminal)
- Compatible with immersion cooling liquid
- Compatible with 25GBASE-SR and 10GBASE-SR
- Operating case temperature range of 0 to 70°C and 0 to 85°C
- Maximum link distance of 70m on OM3 MMF and 100m on OM4 MMF
- 2-wire interface for management specifications compliant with MSA SFF 8472 standard

■ Applications

- Applicable to 10G Ethernet
- Applicable to 25G Ethernet
- Immersion cooling environment
- Data center and in-rack connection
- High-capacity IO with SFP28 interface

■ Compliance

- RoHS compliance
- SFF-8419 SFP28 Electrical MSA
- SFF-8432 SFP28 Mechanical MSA



Absolute Maximum Rating

Parameter	Symbol	Min	Typ.	Max	Unit
Storage Temperature	Ts	-40		85	°C
Relative Humidity (Non - condensing)	RH	5		95	%
Power Supply Voltage	Vcc	0		3.6	V

Recommended Operating Conditions

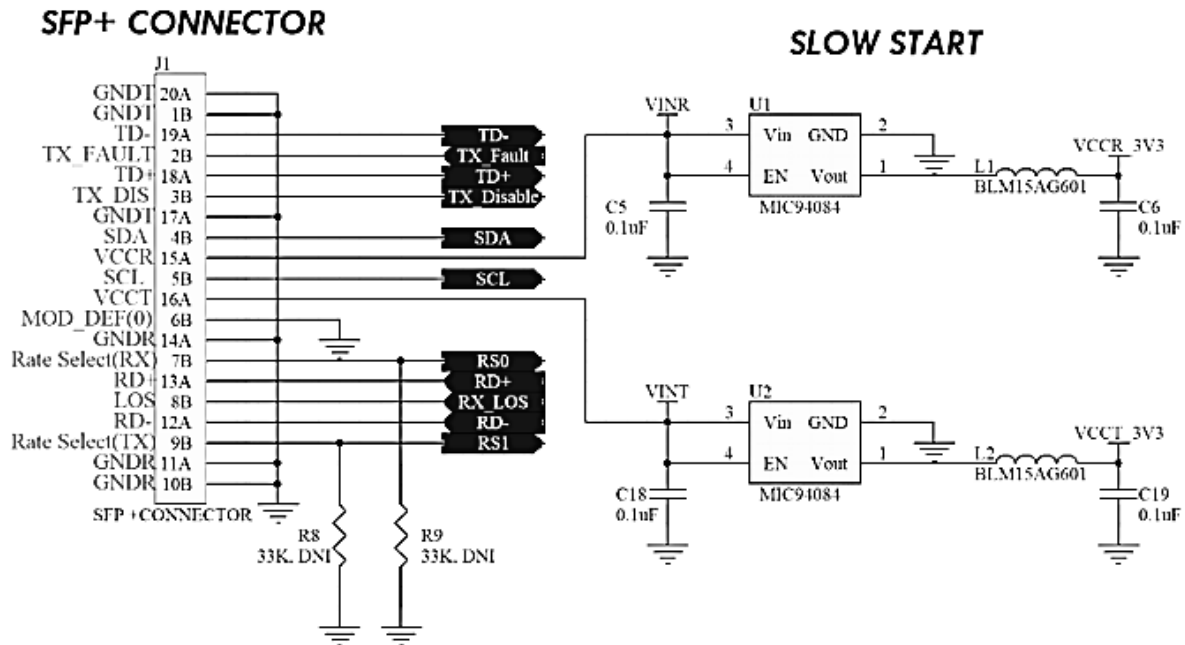
Parameter	Symbol	Min	Typ.	Max	Unit
Operating Case Temperature	TAS-A1ZH8-X3Mxx	0		70	°C
	TAS-AJZH8-X3Mxx	0		85	
Power Supply Voltage	Vcc	3.135	3.300	3.465	V
Data Rate			25.78125		Gb/s
Data Rate Accuracy		-100		100	ppm
Power Supply Current (TX + RX)	Icc	230		288	mA
Liquid immersion depth				10	M
Reach distance	OM3 MMF			70	M
	OM4 MMF			100	M

Specification

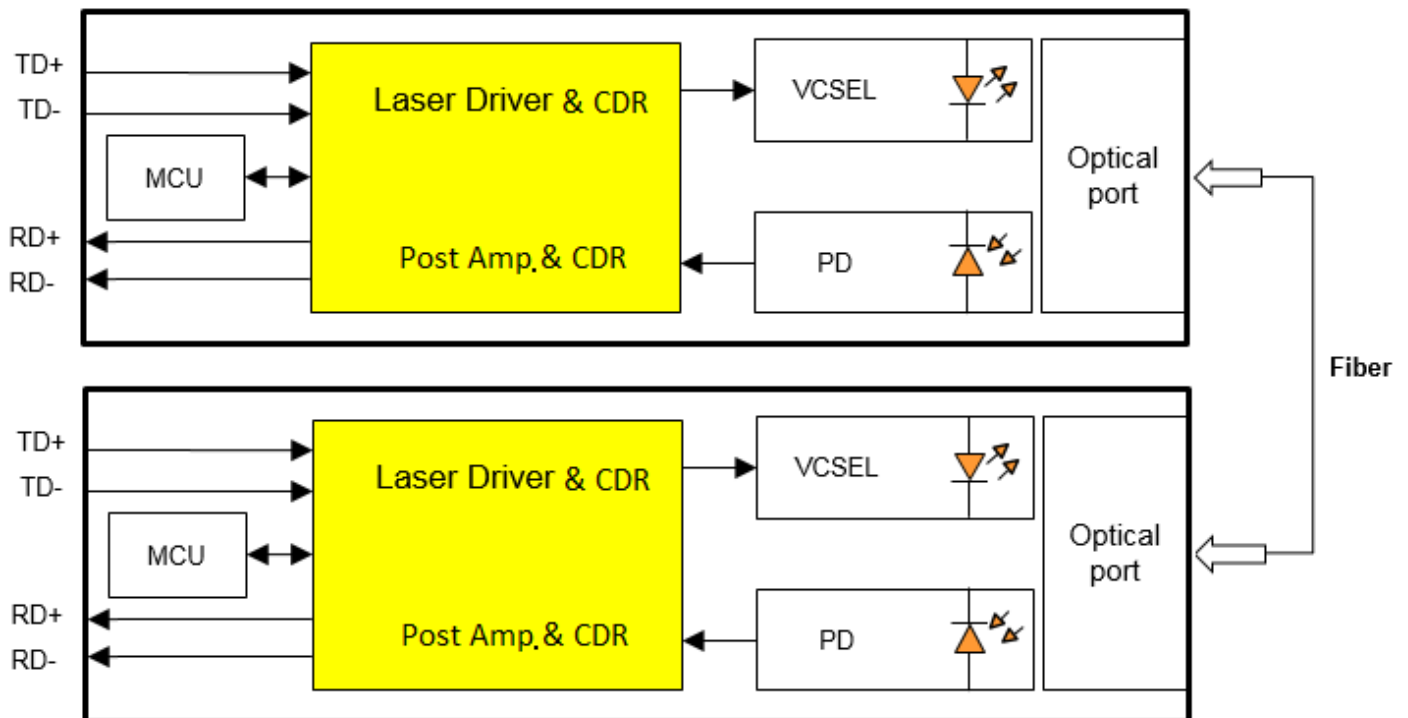
Parameter	Symbol	Min	Typ.	Max	Unit	Note
Transmitter						
Power Consumption	P_dis			1.0	W	
Input Differential Impedance	Zin_d		100		Ω	
Receiver						
Differential Output Impedance	R _{OUT}		100		Ω	



■ Proposed Application Schematics

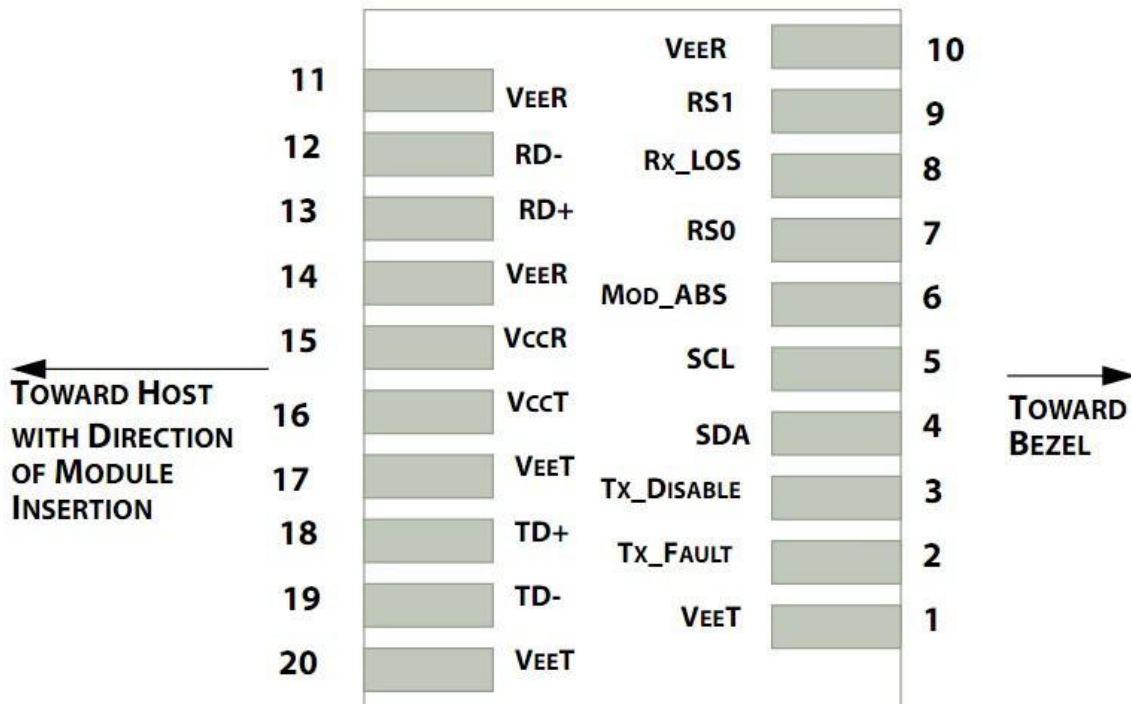
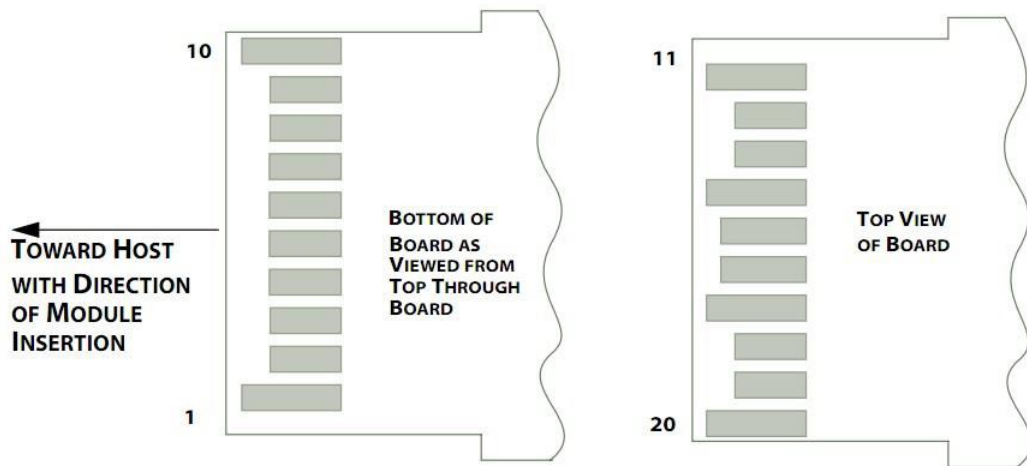


■ SFP28 Block Diagram





Pin Description





PIN	Logic	Symbol	Name / Description	Note
1		VeeT	Module Transmitter Ground	1
2	LVTTTL-O	TX_Fault	Module Transmitter Fault	2
3	LVTTTL-I	TX_Disable	Transmitter Disable; Turns off transmitter laser output	3
4	LVTTTL-I/O	SDA	2-Wire Serial Interface Data Line	4
5	LVTTTL-I	SCL	2-Wire Serial Interface Clock	4
6		MOD_ABS	Module Absent	4
7	LVTTTL-I	RS0	Rx Rate Select: Low = ≤10.3 Gbps Ethernet (Low Bandwidth) High = 24.33Gbps or 25.78 Gbps (High Bandwidth)	
8	LVTTTL-O	RX_LOS	Receiver Loss of Signal Indication Active LOW	5
9	LVTTTL-I	RS1	Rx Rate Select: Low = ≤10.3 Gbps Ethernet (Low Bandwidth) High = 24.33Gbps or 25.78 Gbps (High Bandwidth)	
10		VeeR	Module Receiver Ground	1
11		VeeR	Module Receiver Ground	1
12	CML-O	RD-	Receiver Inverted Data Output	
13	CML-O	RD+	Receiver non-inverted Data Output	
14		VeeR	Module Receiver Ground	1
15		VccR	Module Receiver 3.3 V Supply	
16		VccT	Module Transmitter 3.3 V Supply	
17		VeeT	Module Transmitter Ground	1
18	CML-I	TD+	Transmitter non-inverted Data Input	
19	CML-I	TD-	Transmitter inverted Data Input	
20		VeeT	Module Transmitter Ground	1

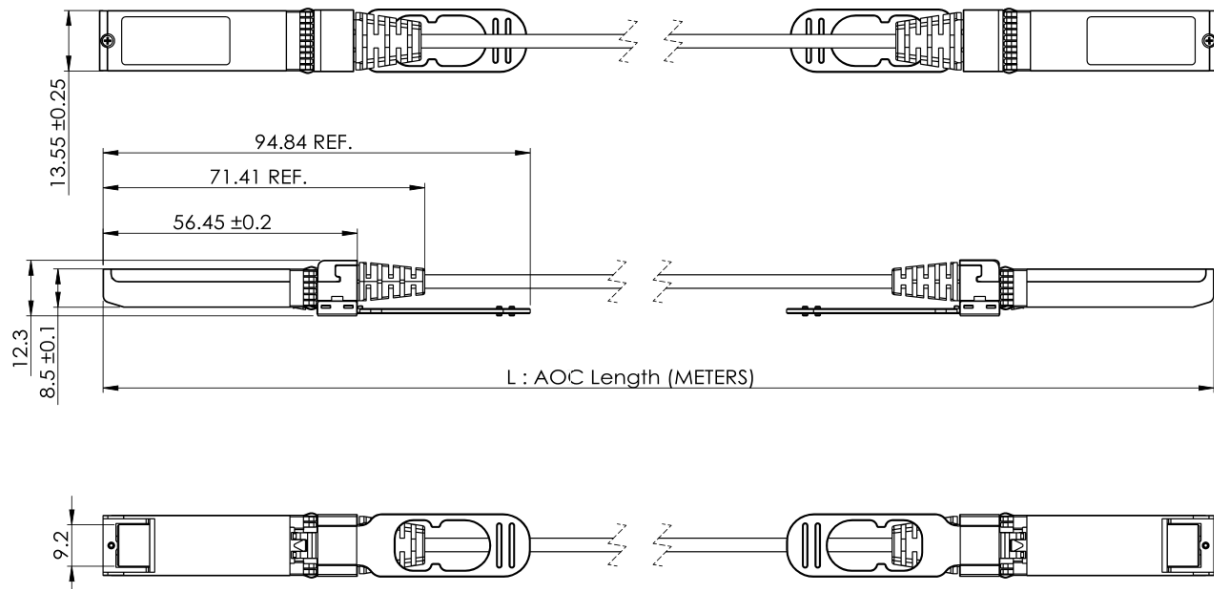
Note:

1. Module circuit ground pins are isolated from the module chassis ground.
2. Pullup to VccHost with 4.7k – 10k Ω
3. No connection required.
4. Power supply filtering circuit required.



Module Outline

Unit: mm



ESD

Normal ESD precautions are required during the handling of this module. This optical transceiver is shipped in ESD protective packaging. It should be removed from the packaging and handled only in an ESD protected environment.

Laser Safety

This is a Class 1 Laser Product according to IEC/EN60825-1:2014 (Third Edition). This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 56, MAY 8, 2019.

Caution:

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Attention: L'utilisation de commandes ou de réglages ou l'exécution de procédures autres que celles spécifiées dans le document peut entraîner une exposition à des radiations dangereuses.



■ Contact Information

Formerica OptoElectronics Inc.

5F-11, No.38, Taiyuan St., Zhubei City,
Hsinchu County 30265, Taiwan

Tel: +886-3-5600286

Fax: +886-3-5600239

San Diego, CA

Tel: 1-949-466-8069

inquiry@formericaoe.com

www.formericaoe.com



■ **Revision History**

Date	Version	Description
11/11/2022	V1.0	Initial release