

## 100G QSFP28 SR4 Optical Transceiver

### Product Features

- Compliant with IEEE 802.3bm 100GBASE-SR4 and QSFP28 MSA SFF-8636
- Built-in digital diagnostic functions
- Operating Data rate: up to 25.78125G for each lane
- 4x25Gb/s, 850nm, VCSEL array transmitter and PIN array receiver
- Transmission distance: up to 70m (OM3) and 100m (OM4) optional
- Single +3.3V power supply
- Maximum operation power: 2.5W
- Operation case temperature: 0 to 70°C
- RoHS compliant



### Application

- Data Center, Enterprise and Telecom Networking

### Absolute Maximum Ratings

Parameter	Unit	Min.	Typical	Max.	Notes
Storage Temperature	°C	-40		85	
Operating Relative Humidity	%			85	
Power Supply Working Voltage	V	-0.5		3.63	

### Recommended Operating Conditions

Parameter	Unit	Min.	Typical	Max.	Notes
Operating Case Temperature	°C	0		70	
Power Supply Working Voltage	V	3.135	3.135	3.135	
Bit Rate	Gbps		25.78125		

# Optical Characteristics

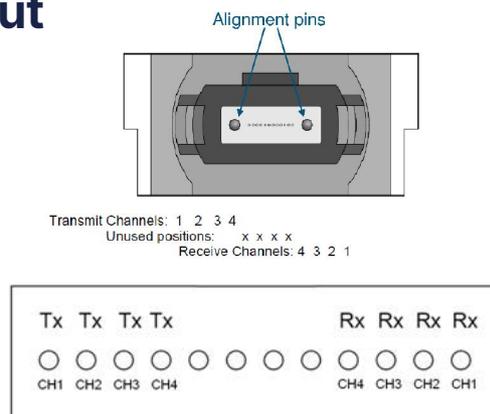
All performance is defined over the recommended operating environment unless otherwise specified.

Parameter	Unit	Min.	Typical	Max.	Notes
<b>Transmitter</b>					
TX Central Wavelength	nm	840	850	860	
Spectral Width (RMS)	nm			0.6	
Average Launch Power, each lane	dBm	-8.4		2.4	
Optical Modulation Amplitude (OMA)	dBm	-6.4		3.0	
Average Launch power Tx_off	dBm			-30	
Extinction Ratio	dB	2			
Optical Return Loss Tolerance	dB			12	1
Encircled Flux		>86% at 19 um <30% at 4.5 um			
Transmitter eye mask definition {X1, X2, X3, Y1, Y2, Y3}Hit ratio 5×10 <sup>-5</sup> hits per sample		{0.3, 0.38, 0.45, 0.35, 0.41, 0.5}			
<b>Receiver</b>					
RX Central Wavelength	nm	840	850	860	
Overload Input Optical Power	dBm	2.5			
Average Receive Power per Lane	dBm	-10.3		2.4	
Receive Power (OMA) per Lane	dBm			3	
Receiver Reflectance	dB			-12	
Stressed Receiver Sensitivity (OMA) per Lane	dBm			-5.2	
Stressed Conditions:	dBm	-30			
Stressed Eye Closure	dB		4.3		
Stressed Eye J2 Jitter			0.39		
Stressed Eye J4 Jitter			0.53		
OMA of each aggressor lane			3		
Stressed Receiver Eye Mask Definition {X1, X2, X3, Y1, Y2, Y3}		{0.28,0.5,0.5,0.33,0.33,0.4}			
LOS Assert	dBm	-30			
LOS De-Assert	dBm			-12	
LOS Hysteresis	dB	0.5			

Notes:

1. Coupled into 50/125 MMF.

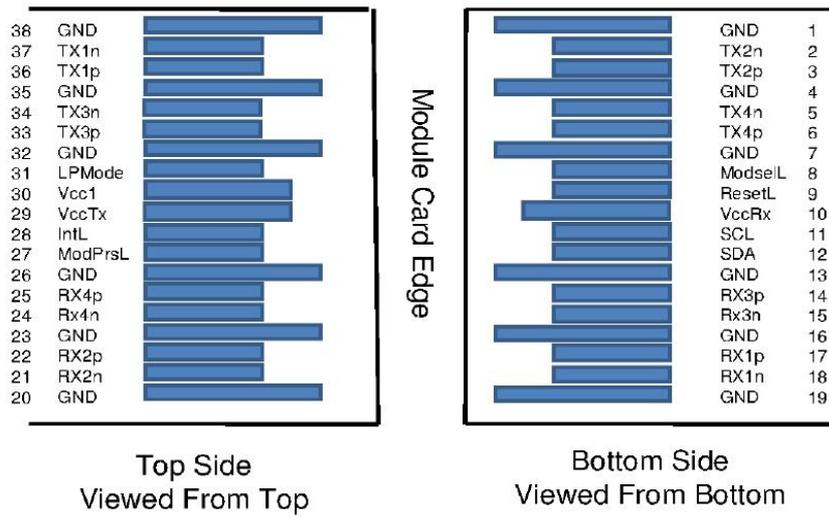
## Electrical Pad Layout



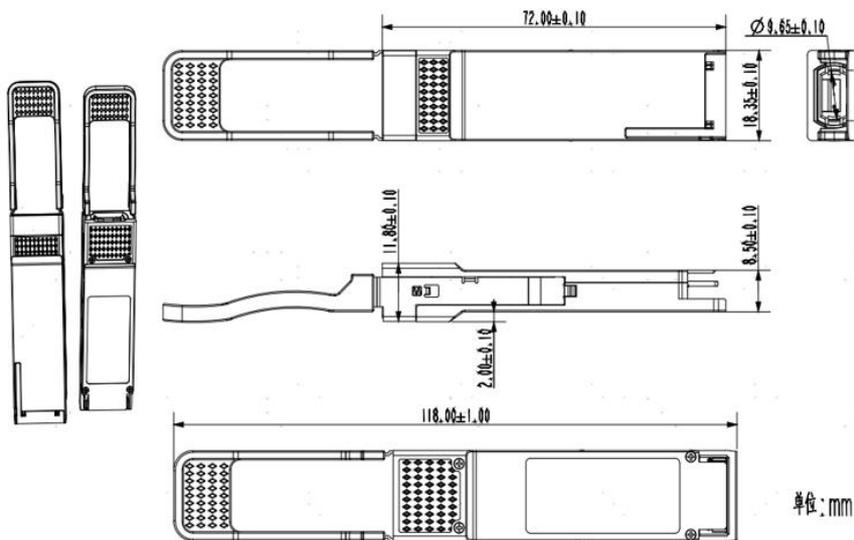
# PIN Function Definitions

Pin No.	Symbol	Level / Logic	Description
1	GND		Module Ground
2	Tx2n	CML-I	Transmitter Inverted Data Input
3	Tx2p	CML-I	Transmitter Non-Inverted Data Input
4	GND		Module Ground
5	Tx4n	CML-I	Transmitter Inverted Data Input
6	Tx4p	CML-I	Transmitter Non-Inverted Data Input
7	GND		Module Ground
8	ModSelL	LVTTL-I	Module Select
9	ResetL	LVTTL-I	Module Reset
10	VccRx		+3.3V Power Supply for Receiver
11	SCL	LVTTL-I	2-Wire Serial Interface Clock
12	SDA	LVTTL-I/O	2-Wire Serial Interface Data Line
13	GND		Module Ground
14	Rx3p	CML-O	Receiver Non-Inverted Data Output
15	Rx3n	CML-O	Receiver Inverted Data Output
16	GND		Module Ground
17	Rx1p	CML-O	Receiver Non-Inverted Data Output
18	Rx1n	CML-O	Receiver Inverted Data Output
19	GND		Module Ground
20	GND		Module Ground
21	Rx2n	CML-O	Receiver Inverted Data Output
22	Rx2p	CML-O	Receiver Non-Inverted Data Output
23	GND		Module Ground
24	Rx4n	CML-O	Receiver Inverted Data Output
25	Rx4p	CML-O	Receiver Non-Inverted Data Output
26	GND		Module Ground
27	ModPrsL	LVTTL-O	Module Present
28	IntL	LVTTL-O	Interrupt
29	VccTx		+3.3V Power Supply for Transmitter
30	Vcc1		+3.3V Power Supply
31	LPMODE	LVTTL-I	Low Power Mode
32	GND		Module Ground
33	Tx3p	CML-I	Transmitter Non-Inverted Data Input
34	Tx3n	CML-I	Transmitter Inverted Data Input
35	GND		Module Ground
36	Tx1p	CML-I	Transmitter Non-Inverted Data Input
37	Tx1n	CML-I	Transmitter Inverted Data Input
38	GND		Module Ground

# Electrical Pad Layout



# Mechanical Specifications



## ESD

This transceiver is specified as ESD threshold 1kV for highspeed data pins and 2kV for all other electrical input pins, tested per MIL-STD-883, Method 3015.4 /JESD22-A114-A (HBM). However, normal ESD precautions are still required during the handling of this module. This 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 60825-1:2007. This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated (June 24, 2007).

## Ordering Information

Ordering P/Ns	Description
AOM100MPO-S70	4x25G QSFP28 SR4, 850nm, MMF, MPO, Commercial temperature.

## Revision History

Version	Date	Description
V001	2024-02-22	New release