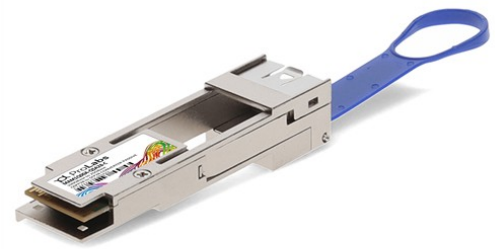


## MAM1Q00A-QSA28-C

Mellanox® MAM1Q00A-QSA28 Compatible 25GBase-Converter QSFP28 Transceiver (QSFP28 to SFP28 Converter, Passive)

### Features:

- 1 Independent Duplex Channel Operating at 25Gbps, Also Supports 10Gbps & 5Gbps Data Rates
- All-Metal Housing for Superior EMI Performance
- Low Insertion Loss
- Low Crosstalk
- Secure Latching Mechanism
- Single 3.3 Power Supply
- Operating Temperature: 0 to 85 Celsius
- RoHS Compliant and Lead-Free



### Applications:

- 25GBase Ethernet
- Access and Enterprise

### Product Description

This Mellanox MAM1Q00A-QSA28 compatible QSFP28 to SFP28 converter provides conversion from QSFP28 to SFP28 form factors. It is guaranteed to be 100% compatible with the equivalent Mellanox® transceiver. It is built to MSA standards and is uniquely serialized and data-traffic and application tested to ensure that it will integrate into your network seamlessly. It is built to meet or exceed the specifications of MSA Compliant, as well as to comply with MSA (Multi-Source Agreement) standards to ensure seamless network integration. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

ProLabs' transceivers are RoHS compliant and lead-free.

## Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Maximum Supply Voltage	Vcc	3.15		3.45	V	
Storage Temperature	Tstg	-40		85	°C	
Operating Temperature	Tc	-40	25	85	°C	
Relative Humidity	RH			85	%	
Power Consumption				0.3	W	
Characteristic Impedance	IM	90	100	110	Ω	
Data Rate		1		25	Gbps	

### Notes:

1. Average.
2. Testing by data rate; NRZ @25.78125Gbps, mark ratio 50%, and PRBS= $2^{31}-1$ .

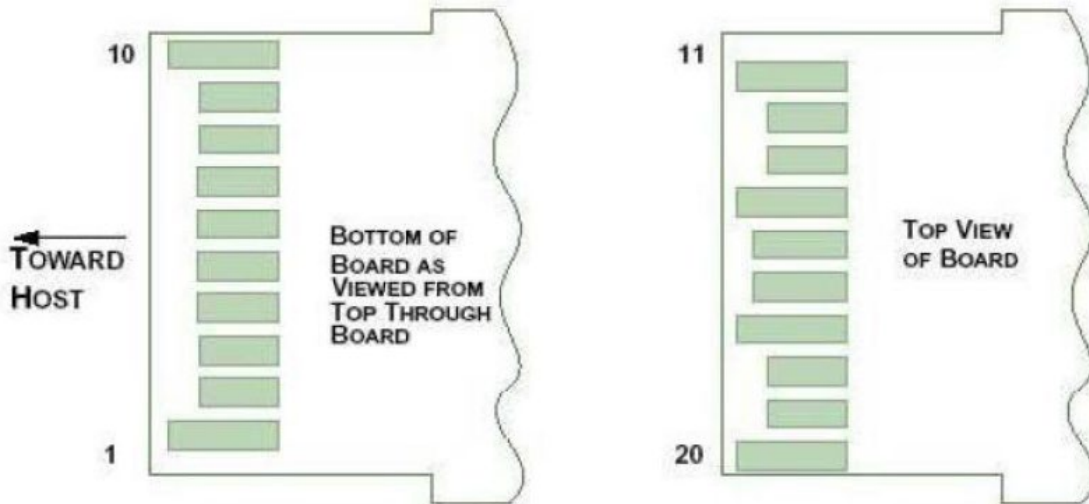
## SFP Pin Descriptions

Pin	Logic	Symbol	Name/Description	Notes
1		VeeT	Module Transmitter Ground.	1
2	LVTTTL-O	Tx_Fault	Transmitter Fault.	2
3	LVTTTL-I	Tx_Disable	Transmitter Disable.	3
4	LVTTTL-I/O	SDA	MOD-DEF2. 2-Wire Serial Interface Data.	4
5	LVTTTL-I/O	SCL	MOD-DEF1. 2-Wire Serial Interface Clock.	4
6		MOD_ABS	Module Absent.	5
7	LVTTTL-I	RS0	Rate Select Zero.	
8	LVTTTL-O	Rx_LOS	Module Receiver Loss of Signal.	2
9	LVTTTL-I	RS1	Rate Select One.	
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 +3.3V Supply.	
16		VccT	Module Transmitter +3.3V 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

**Notes:**

1. The module signal grounds, VeeR and VeeT, shall be isolated from the module case.
2. This is an open collector/drain output and shall be pulled up with 4.7kΩ to 10kΩ to the Host\_Vcc on the host board. Pull-ups can be connected to multiple power supplies; however, the host board design shall ensure that no module has a voltage exceeding the module  $V_{ccT}/R+0.5V$ .
3. This is an open collector/drain input and shall be pulled up with 4.7kΩ to 10kΩ to the VccT in the module.
4. See the 2-wire electrical specifications.
5. This shall be pulled up with 4.7kΩ to 10kΩ to the Host\_Vcc on the host board.

**Electrical Pad Layout**



## QSFP Pin Descriptions

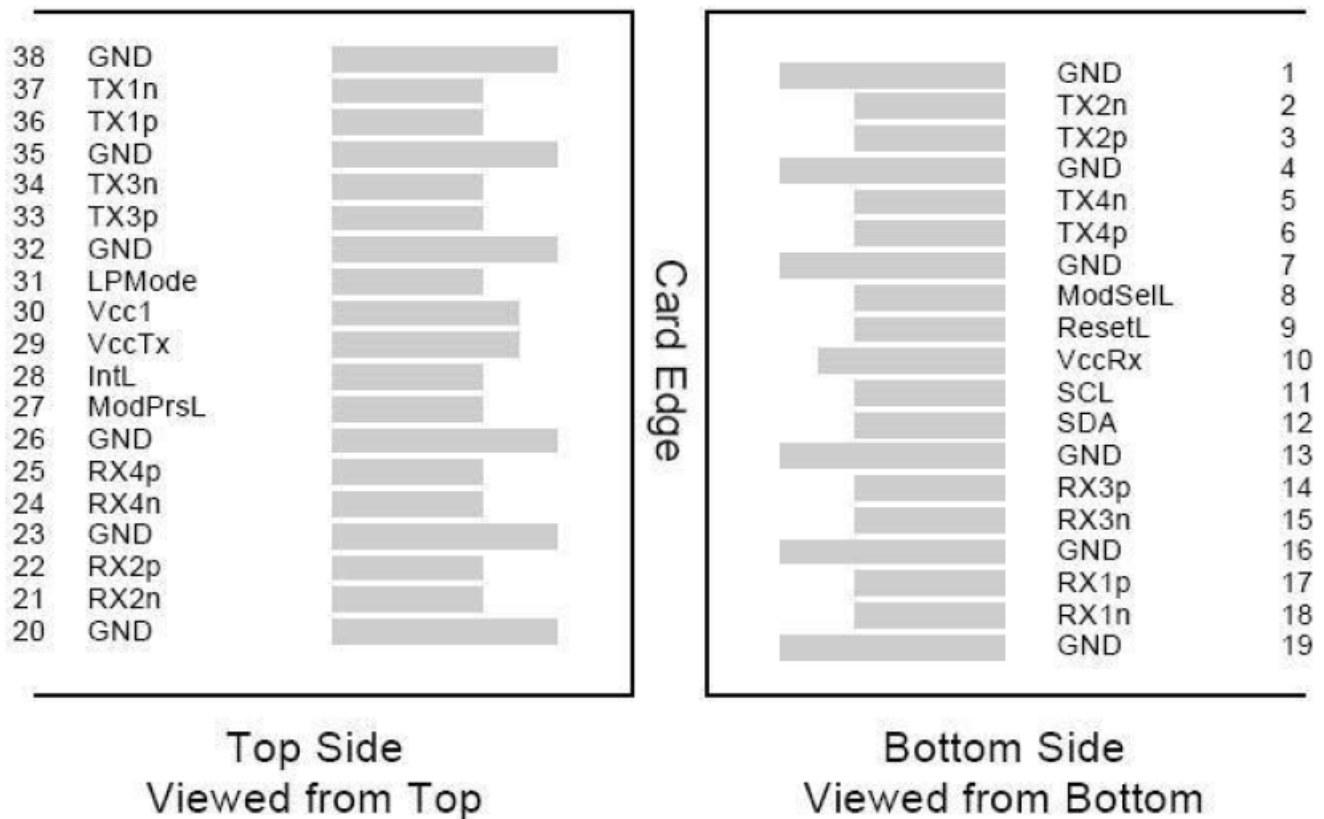
Pin	Logic	Symbol	Name/Description	Notes
1		GND	Module Ground.	1
2	CML-I	Tx2-	Transmitter Inverted Data Input.	
3	CML-I	Tx2+	Transmitter Non-Inverted Data Input.	
4		GND	Module Ground.	1
5	CML-I	Tx4-	Transmitter Inverted Data Input.	
6	CML-I	Tx4+	Transmitter Non-Inverted Data Input.	
7		GND	Module Ground.	1
8	LVTTTL-I	ModSelL	Module Select.	
9	LVTTTL-I	ResetL	Module Reset.	
10		VccRx	+3.3V Receiver Power Supply.	2
11	LVCMOS-I/O	SCL	2-Wire Serial Interface Clock.	
12	LVCMOS-I/O	SDA	2-Wire Serial Interface Data.	
13		GND	Module Ground.	
14	CML-O	Rx3+	Receiver Non-Inverted Data Output.	
15	CML-O	Rx3-	Receiver Inverted Data Output.	
16		GND	Module Ground.	1
17	CML-O	Rx1+	Receiver Non-Inverted Data Output.	
18	CML-O	Rx1-	Receiver Inverted Data Output.	
19		GND	Module Ground.	1
20		GND	Module Ground.	1
21	CML-O	Rx2-	Receiver Inverted Data Output.	
22	CML-O	Rx2+	Receiver Non-Inverted Data Output.	
23		GND	Module Ground.	1
24	CML-O	Rx4-	Receiver Inverted Data Output.	1
25	CML-O	Rx4+	Receiver Non-Inverted Data Output.	
26		GND	Module Ground.	1
27	LVTTTL-O	ModPrsL	Module Present.	
28	LVTTTL-O	IntL	Interrupt.	
29		VccTx	+3.3V Transmitter Power Supply.	2
30		Vcc1	+3.3V Power Supply.	2
31	LVTTTL-I	LPMode	Low-Power Mode.	
32		GND	Module Ground.	1
33	CML-I	Tx3+	Transmitter Non-Inverted Data Input.	
34	CML-I	Tx3-	Transmitter Inverted Data Input.	
35		GND	Module Ground.	1

36	CML-I	Tx1+	Transmitter Non-Inverted Data Input.	
37	CML-I	Tx1-	Transmitter Inverted Data Input.	
38		GND	Module Ground.	1

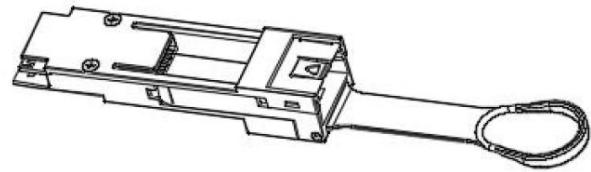
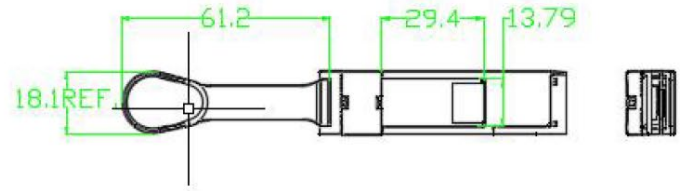
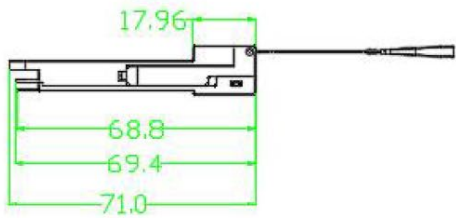
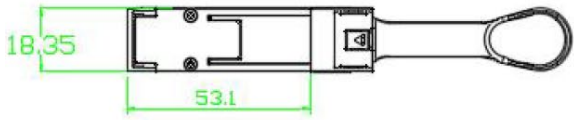
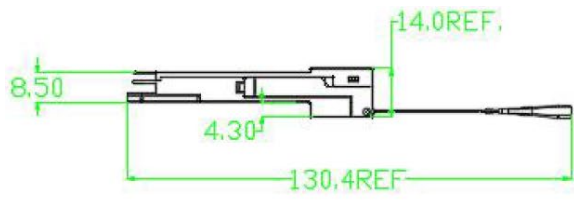
**Notes:**

1. GND is the symbol for signal and supply (power) common for QSFP modules. All are common within the QSFP module, and all module voltages are referenced to this potential otherwise noted. Connect these directly to the host board signal common ground plane.
2. VccRx, Vcc1, and VccTx are the receiver and transmitter power suppliers and shall be applied concurrently. Recommended host board power supply filtering is shown below. VccRx, Vcc1, and VccTx may be internally connected within the QSFP transceiver module in any combination. The connector pins are each rated for a maximum current of 500mA.

**Electrical Pad Layout**



### Mechanical Specifications



## About ProLabs

Our extensive experience comes as standard. For over 20 years ProLabs has delivered optical connectivity solutions that give our customers freedom and choice through our ability to provide seamless interoperability. At the heart of our company is the ability to provide state-of-the-art optical transport and connectivity solutions that are compatible with more than 100 optical switching and transport platforms.

## A Complete Portfolio of Network Solutions

ProLabs is focused on innovations in optical transport and connectivity. The combination of our knowledge of optics and networking equipment enables ProLabs to be your single source for optical transport and connectivity solutions from 100Mb to 1.6T while providing innovative solutions that increase network efficiency. We provide the optical connectivity expertise that is compatible with and enhances your switching and transport equipment.

## The Trusted Partner

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure compatible products, and immediate answers to your questions. With Engineering and Manufacturing offices in the U.K. and U.S. augmented by field offices throughout the U.S., U.K. and Asia, ProLabs is able to be our customers best advocate 24 hours a day.



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