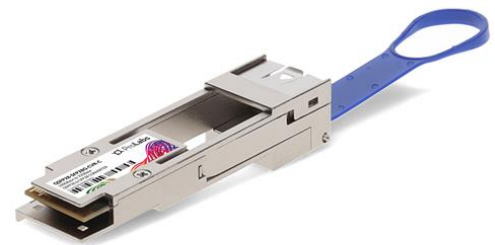**QSFP28-SFP28G-CVR-C**

MSA and TAA 100GBase-Converter QSFP28 Transceiver (QSFP28 to SFP28 Converter)

Features:

- Compliant to industry standards
- QSFP MSA SFF-8436
- SFP+ MSA SFF-8431
- Low insertion loss
- Matched impedance
- Secure latching mechanism
- Built-in EEPROM for product identification
- RoHS-6 compliant

Applications:

- 100GBase Ethernet
- Access and Enterprise

Product Description

This MSA Compliant QSFP28 to SFP28 converter provides conversion from QSFP28 to SFP28 form factors. It is built to MSA standards and is uniquely serialized and data-traffic and application tested to ensure that they will integrate into your network seamlessly. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. This converter is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.
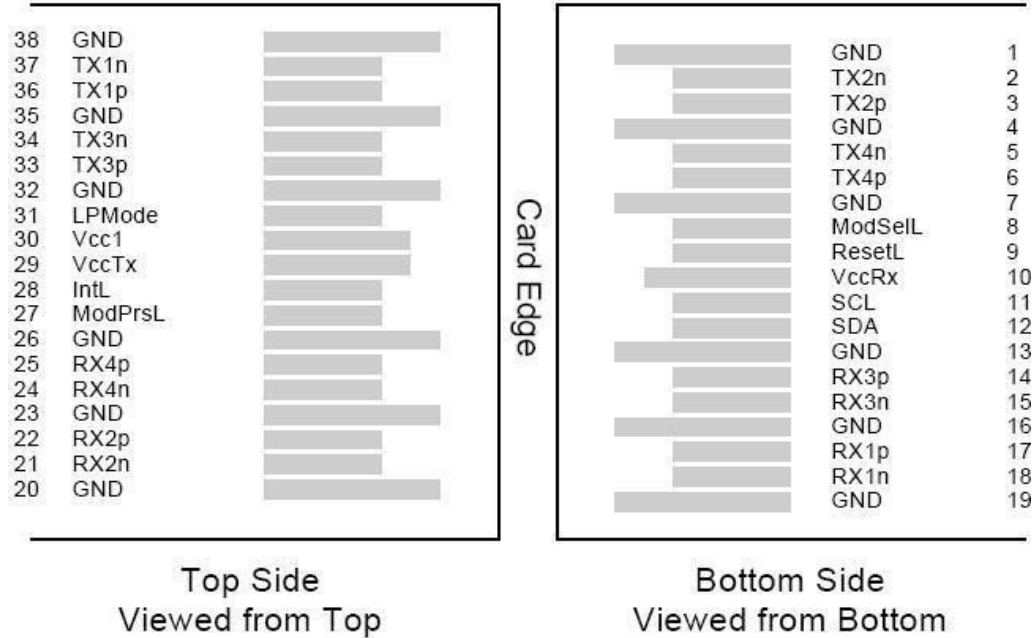
ProLabs' transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products."

Rev. 050523

Recommended Operating Conditions

Parameter	Symbol	Min	Max	Unit
Operating Case Temperature	Tc	-20	85	ºC
Storage Temperature	Tstg	-40	85	ºC
Relative Humidity (Non-Condensing)	RH		85	%
Supply Voltage	Vcc3	3.15	3.45	V
Power Consumption	POUT		0.3	W
Characteristic Impedance	Im	90	110	Ω

QSFP Host Board Connector Pin-Out

38 GND	
37 TX1n	
36 TX1p	
35 GND	
34 TX3n	
33 TX3p	
32 GND	
31 LPMode	
30 Vcc1	
29 VccTx	
28 IntL	
27 ModPrsL	
26 GND	
25 RX4p	
24 RX4n	
23 GND	
22 RX2p	
21 RX2n	
20 GND	

Card Edge

GND	1
TX2n	2
TX2p	3
GND	4
TX4n	5
TX4p	6
GND	7
ModSelL	8
ResetL	9
VccRx	10
SCL	11
SDA	12
GND	13
RX3p	14
RX3n	15
GND	16
RX1p	17
RX1n	18
GND	19

Top Side
Viewed from Top

Bottom Side
Viewed from Bottom

Pin Definitions

Pin	Logic	Symbol	Name/Description	Note
1		GND	Module Ground.	1
2	CML-I	Tx2-	Transmitter Inverted Data Input.	
3	CML-I	Tx2+	Transmitter Non-Inverted Data Output.	
4		GND	Module Ground.	1
5	CML-I	Tx4-	Transmitter Inverted Data Input.	
6	CML-I	Tx4+	Transmitter Non-Inverted Data Output.	
7		GND	Module Ground.	1
8	LVTLL-I	ModSelL	Module Select.	
9	LVTLL-I	ResetL	Module Reset.	
10		VccRx	+3.3V Power Supply Receiver.	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	LVTTL-O	ModPrsL	Module Present.	
28	LVTTL-O	IntL	Interrupt.	
29		VccTx	+3.3V Power Supply Transmitter.	2
30		Vcc1	+3.3V Power Supply.	2
31	LVTTL-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 Output.	

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

**SFP+ Host Board Connector Pinout for SFP+**
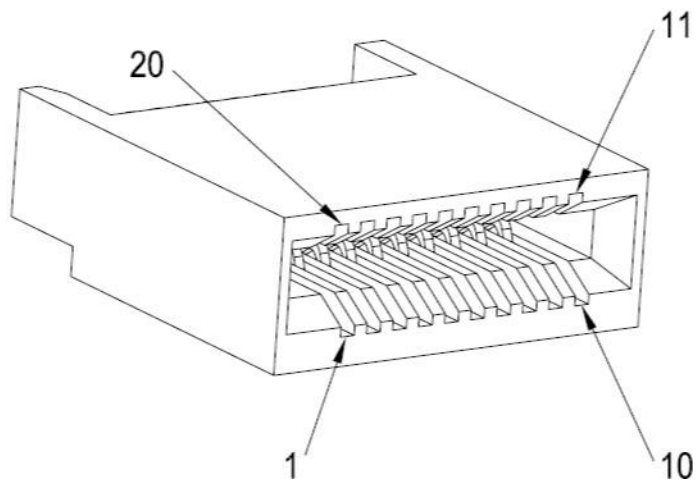
Pin Definitions

Pin	Logic	Symbol	Name/Description	Note
1		VeeT	Module Transmitter Ground.	1
2	LVTTL-O	Tx_Fault	Transmitter Fault.	2
3	LVTTL-I	Tx_Disable	Transmitter Disable.	3
4	LVTTL-I/O	SDA	MOD-DEF2 - 2-Wire Serial Interface Data.	4
5	LVTTL-I/O	SCL	MOD-DEF1 - 2-Wire Serial Interface Clock.	4
6		MOD_ABS	Module Absent.	5
7	LVTTL-I	RS0	Rate Select Zero.	
8	LVTTL- O	Rx_LOS	Module Receiver Loss of Signal.	2
9	LVTTL-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-10kΩ to 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 voltage exceeding module VccT/R+0.5V.
3. This is an open collector/drain input and shall be pulled up with 4.7kΩ-10kΩ to VccT in the module.
4. See 2-wire electrical specifications.
5. This shall be pulled up with 4.7kΩ-10kΩ to Host_Vcc on the host board.

Mechanical Dimensions
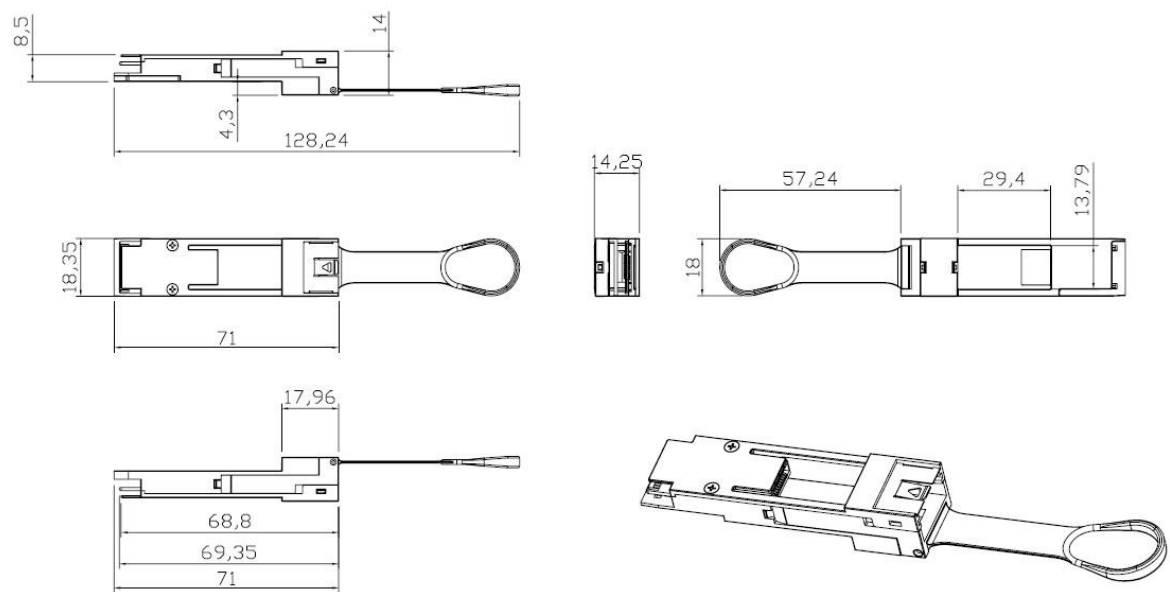
Physical Specifications

Parameter	Specification
Maximum Dimensions (H x W x D)	13.5mm x 18.4mm x 78mm
Weight	Typically less than 100g

About ProLabs

Our experience comes as standard; for over 15 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 over 90 optical switching and transport platforms.

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 400G 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.

Trusted Partner

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure that you get immediate answers to your questions and compatible product when needed. 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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