QSFP56-LB-0BD-C

MSA and TAA 200GBase QSFP56 Loopback Transceiver with 0dB Attenuation, -40 to 85C

Features:

- SFF-8665 Compliance
- Built-in surge current mitigation technology
- Industrial temperature: -40 to 85 Celsius
- +3.3V power supply
- Supports 10G/25G/56G PAM4 data rates
- 2-wire interface for integrated Digital Diagnostic Monitoring
- Compliant with IEEE 802.3ba, 802.3bj, and 802.3cd standards
- A multi-color LED indicator for high/low power modes
- Hot Pluggable
- RoHS Compliant and Lead-Free

Applications:

- 200GBase Ethernet

Product Description

This MSA compliant QSFP56 loopback provides a simple solution to loopback testing on individual ports with the use of a cable assembly. It has 0dB of attenuation and is compatible with existing 200G QSFP56 ports. All of our transceivers are built to comply with Multi-Source Agreement (MSA) standards and are uniquely serialized and tested for data-traffic and application to ensure seamless network integration. This transceiver 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. 012924

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Maximum Supply Voltage	Vcc	2.97	3.3	3.63	V	
Storage Temperature	Tstg	-40		+85	°C	
Operating Case Temperature	Tc	-40		+85	°C	
Storage Relative Humidity	RHs	0		95	%	
Operating Humidity	RHo	0		85	%	
Data Rate	BRate	0.1		200	Gbps	
Durability Cycles			2000	2250	Cycles	

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Differential Input Impedance	Zin	90	100	110	ohm	
Insertion Loss @14GHz	SDD21	3.5		10	dB	1
Insertion Loss Deviation	ILD	-1.0		1.0	dB	2
Return Loss		IEEE 802.3bj CL92.10.3.				
Skew Between Lanes	SKEW			200	ps	
Clock Frequency	f_{SCL}	0		400	KHz	
Clock Stretching	T_clock_hold			500	µs	

Notes:

1. The insertion loss for TX to RX, including the AC Caps, as measured with MCB. The MCB insertion loss comply with IEEE 802.3bj CL92.11.2.
2. At Nyquist Frequency

Pin Descriptions

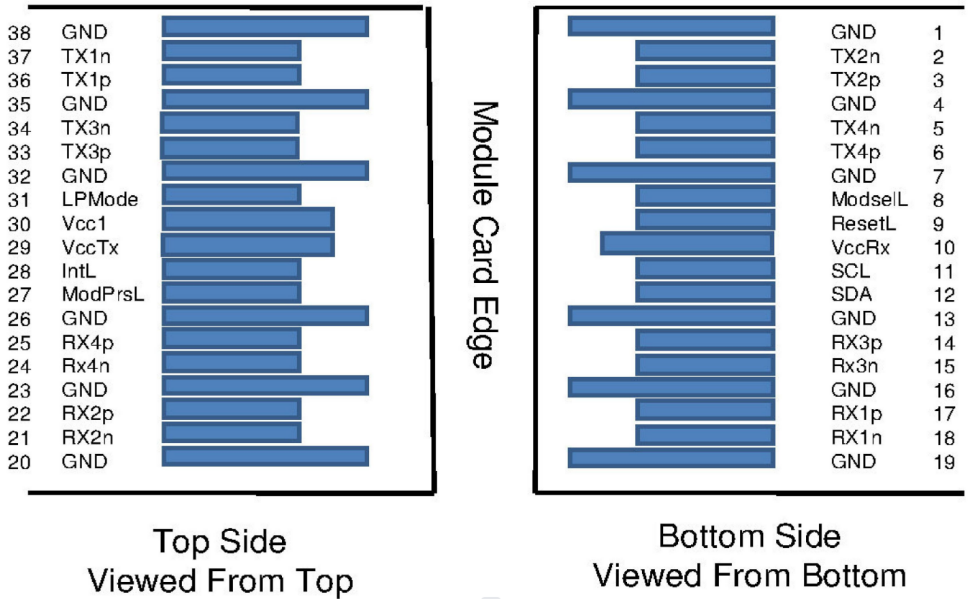
Pin	Symbol	Name/Description	Notes
1	GND	Module Ground.	1
2	Tx2-	Transmitter Inverted Data Input.	
3	Tx2+	Transmitter Non-Inverted Data Input.	
4	GND	Module Ground.	1
5	Tx4-	Transmitter Inverted Data Input.	
6	Tx4+	Transmitter Non-Inverted Data Input.	
7	GND	Module Ground.	1
8	ModSelL	Module Select.	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

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

Notes:

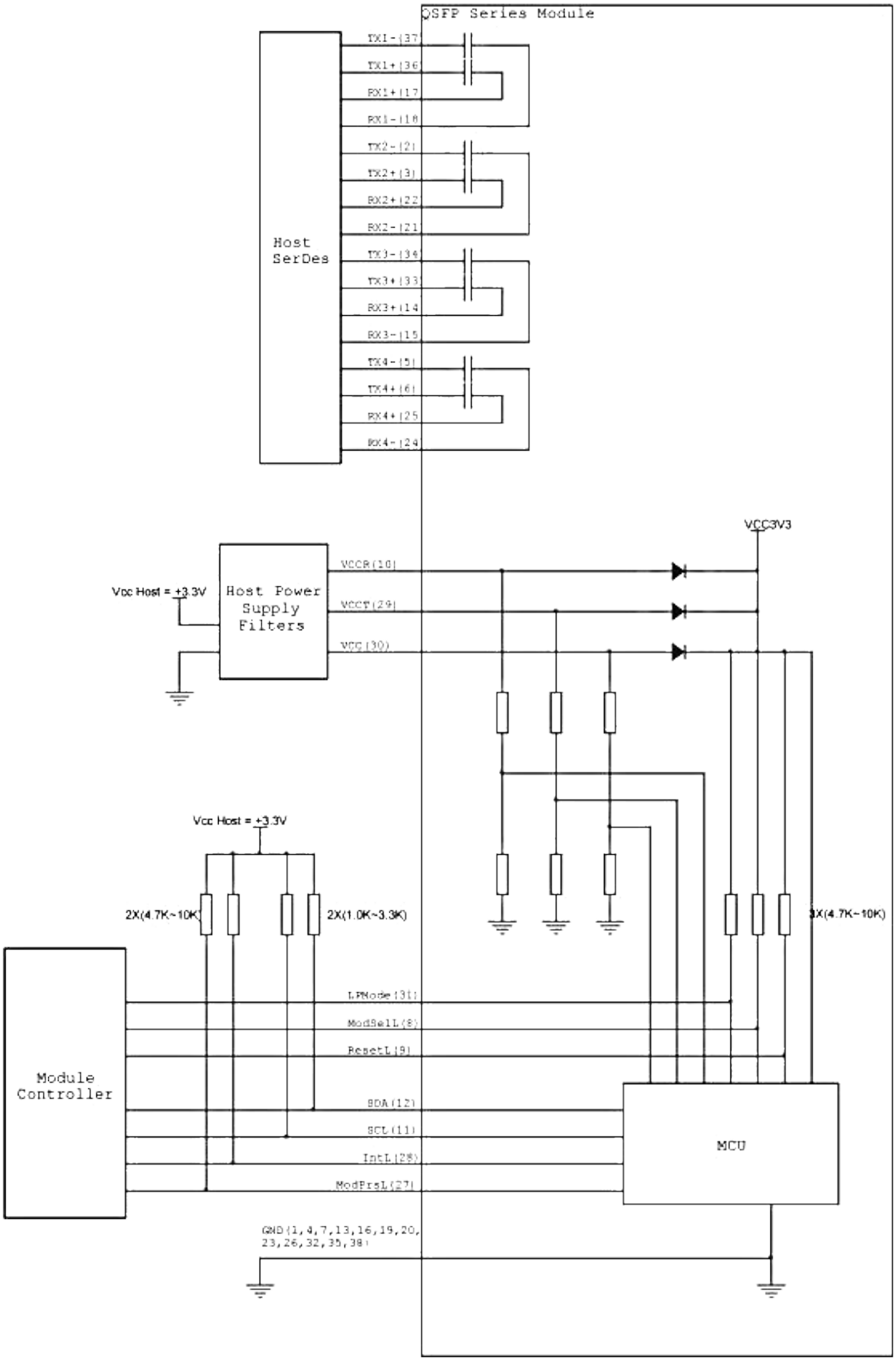
1. Circuit ground is internally isolated from the chassis ground.

Electrical Pad Layout



Pin-Out of Connector Block on the Host Board

Typical Application Circuit



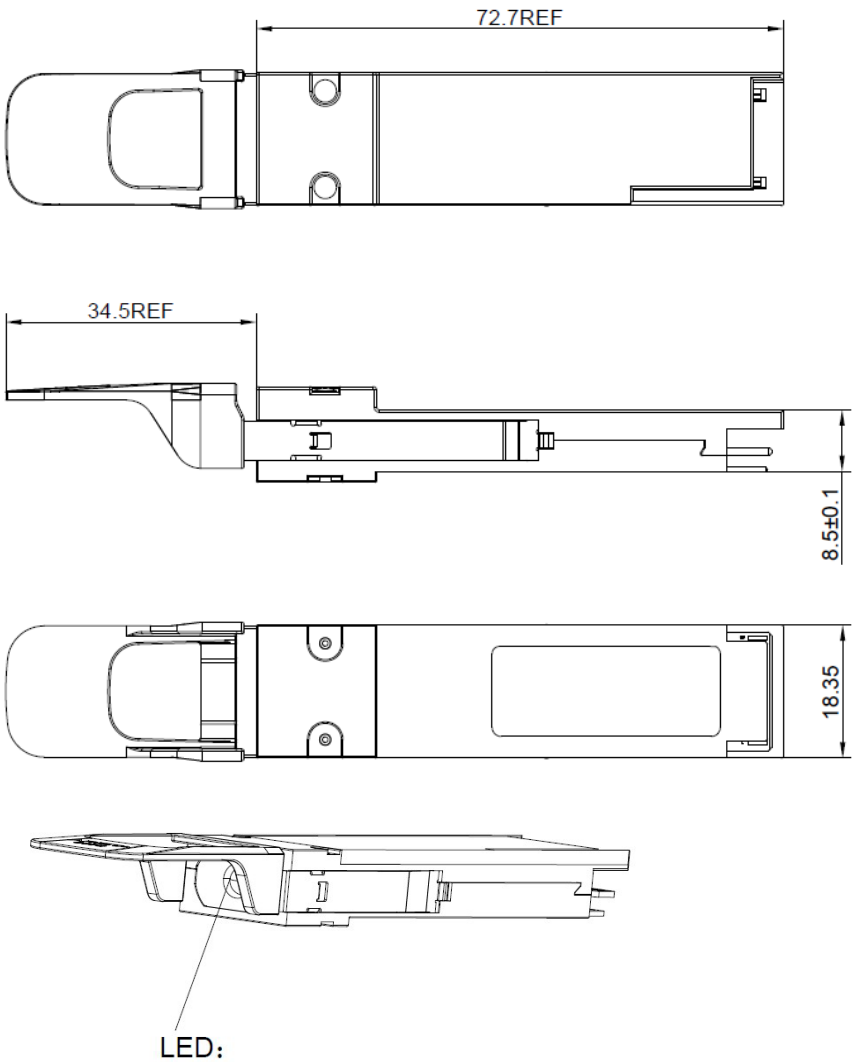
Status LED

A multi-color LED must be viewed from the front of the module in order to signify high/low power modes, as well as interrupts:

- Solid green: low-power mode
- Solid red: high-power mode
- Blinking green: low-power mode with any of the interrupt flag is set
- Blinking red: high-power mode with any of the interrupt flag is set

Mechanical Specifications

Dimensions are in millimeters. (Unit: mm)



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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