

Technical Datasheet

MFS1S00-V050E

Mellanox® Compatible 200Gb/s, QSFP56, Active Optical Cable, Copper, Passive, 50M

FEATURES

- Hot-pluggable QSFP56 footprint
- Support 212.5Gbps aggregate bit rate
- 4x56Gpbs PAM4 electrical interface
- Available in lengths up to 100m
- Power Dissipation <5.5W per cable end
- Single +3.3V power supply
- Operating Case temperature range 0°C to 70°C
- RoHS-6 compliant
- Compliant with SFF-8679

APPLICATIONS

- 200GBASE-SR4 Ethernet
- Data Center
- Other Optical Links

DESCRIPTION

ATGBICS QSFP56 active optical cables are designed for use in 200G-Ethernet links. They are compliant with SFF-8679, and the mechanical QSFP56 plug is compatible with SFF-8661

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Power Supply Voltage	VCC	0		3.6	V	
Storage Temperature	Ts	-40		+85	°C	
Relative Humidity	RH	5		85	%	Non-condensing
Case Operating Temperature	Tc	0		+70	°C	

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Electrical Characteristics

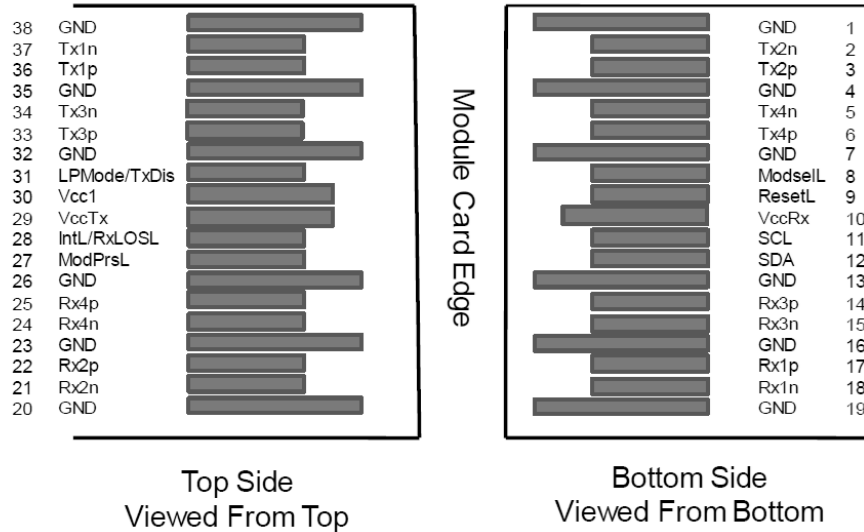
Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Power Supply Voltage	VCC	3.135	3.3	3.465	V	
Power Dissipation	PD			5.5	W	
Power Supply Current	Icc			1.75	A	
Aggregate Data Rate			212.5		Gbps	PAM4
Signaling rate per lane			56.125		Gbps	PAM4
Clock Rate-I2C				400	kHz	
Transmitter						
Input Differential impedance	ZIN		100		ohm	
Differential data input swing	VIN	180		900	mV	
Single-ended voltage tolerance		-0.3		3.3	V	
Receiver						
Output Differential impedance	Zout		100		ohm	
Differential data Output Swing	Vout	300		850	mV	

General Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Aggregate Data Rate			212.5		Gbps	
Signaling rate per lane			56.125		Gbps	
Bit Error Ratio (pre-FEC)	BER			2.4E-4		PRBS31
Maximum Supported Distances						
Fiber Type	Bandwidth (850nm)					
50um	2000MHz*km			70	m	OM3
50um	4700MHz*km			100	m	OM4

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Pin Assignment:



Pin Descriptions

PIN	Symbol	Name / Description	Note
1	GND	Ground	1
2	Tx2n	Transmitter Inverted Data Input	
3	Tx2p	Transmitter Non-Inverted Data Input	
4	GND	Ground	1
5	Tx4n	Transmitter Inverted Data Input	
6	Tx4p	Transmitter Non-Inverted Data Input	
7	GND	Ground	1
8	ModSelL	Module Select	2
9	ResetL	Module Reset	
10	Vcc Rx	3.3V Power Supply Receiver	
11	SCL	2-wire serial interface clock	3
12	SDA	2-wire serial interface data	3
13	GND	Ground	1
14	Rx3p	Receiver Non-Inverted Data Output	

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15	Rx3n	Receiver Inverted Data Output	
16	GND	Ground	1
17	Rx1p	Receiver Non-Inverted Data Output	
18	Rx1n	Receiver Inverted Data Output	
19	GND	Ground	1
20	GND	Ground	1
21	Rx2n	Receiver Inverted Data Output	
22	Rx2p	Receiver Non-Inverted Data Output	
23	GND	Ground	1
24	Rx4n	Receiver Inverted Data Output	
25	Rx4p	Receiver Non-Inverted Data Output	
26	GND	Ground	1
27	ModPrsL	Module Present	3
28	IntL	Interrupt	3
29	Vcc Tx	3.3V power supply transmitter	
30	Vcc1	3.3V power supply	
31	LPMODE	Low Power Mode	
32	GND	Ground	1
33	Tx3p	Transmitter Non-Inverted Data Input	
34	Tx3n	Transmitter Inverted Data Input	
35	GND	Ground	1
36	Tx1p	Transmitter Non-Inverted Data Input	
37	Tx1n	Transmitter Inverted Data Input	
38	GND	Ground	1

Note1: Module ground pins GND are isolated from the module case.

Note2: ModSelL is an input signal. When held low by the host, the module responds to two-wire serial communication commands. The ModSelL signal allows the use of multiple modules on a single two-wire interface. When ModSelL is high, the module shall not respond to or acknowledge any two-wire interface communication from the host.

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Note3: Shall be pulled up with 4.7K-10Kohms to a voltage between 3.15V and 3.45V on the host board.

Mechanical Dimensions

