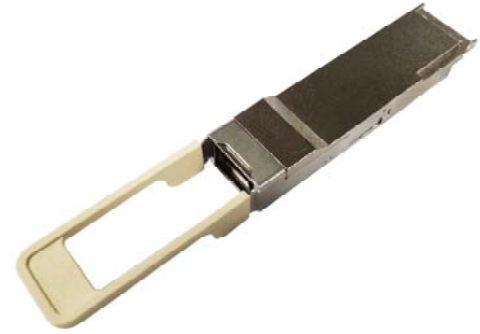


EOLQ-8540G-03-MO Series

**Multi-Mode 40GBASE-SR4
QSFP+ Transceiver
RoHS Compliant**

Features

- ◆ Compliant to the IEEE 802.3ba(40GBASE-SR4)
- ◆ Support interoperability with IEEE 802.3ae 10GBASE-SR modules of various form factors such as SFP+, XFP, X2
- ◆ Compliant to the QSFP+ MSA SFF-8436 Specification
- ◆ Up to 300m on OM3 MMF or 400m on OM4 MMF
- ◆ VCSEL array transmitter and PIN array receiver
- ◆ Single 3.3V Power Supply and Power dissipation < 1.5W
- ◆ Operates at 10.3125Gbps per channel
- ◆ Operating Case Temperature: 0°C~+70°C
- ◆ I²C interface with integrated Digital Diagnostic Monitoring
- ◆ Utilizes a standard 12/8 lane optical fiber with MPO connector
- ◆ Safety Certification: TUV/UL/FDA*^{Note1}
- ◆ RoHS Compliant



Applications

- ◆ 40GBE and 10GBE interconnects
- ◆ Datacom/Telecom switch & router connections
- ◆ Data aggregation and backplane applications

Ordering Information

Part No.	Data Rate	Fiber	Distance* ^(Note2)	Interface	Temp.	DDMI
EOLQ-8540G-03-MO	40Gbps	MMF	300m/400m	MPO	0°C~+70°C	Yes

Note1: For the latest certification information, please check with Eoptolink.

Note2: 300m with OM3 MMF, 400m with OM4 MMF.

*The product image only for reference purpose.

Absolute Maximum Ratings*

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T _s	-40	+85	°C
Supply Voltage	V _{cc}	-0.5	3.6	V
Operating Relative Humidity	RH	0	85	%

*Exceeding any one of these values may destroy the device immediately.

Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature	T _c EOLQ-8540G-03-MO	0		+70	°C
Power Supply Voltage	V _{cc}	3.135	3.3	3.465	V
Power Supply Current	I _{cc}			450	mA
Lane Bit Rate	BR _{LANE}		10.3125		Gbps

Optical and Electrical Characteristics

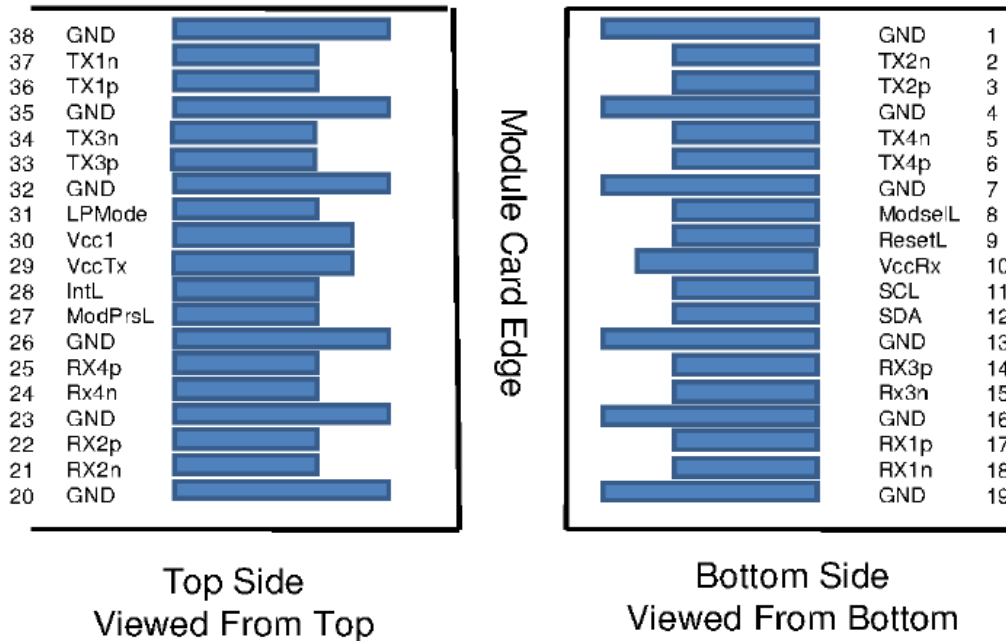
Parameter	Symbol	Min.	Typical	Max.	Unit
OM3 MMF	L	0.5		300	m
Per Lane Bit Rate	BR _{LANE}		10.3125		Gbps
Transmitter					
Center Wavelength	λ _c	840	850	860	nm
RMS spectral width	RMS	-		0.65	nm
Average Launch Power, Each Lane*(Note3)	P _{out/lane}	-7.6		2.4	dBm
Extinction Ratio*(Note4)	ER	3			dB
Average launch power of OFF, each lane				-30	dBm
Output Optical Eye*(Note4)	IEEE 802.3ba-2010 Compliant				
Receiver					
Center Wavelength	λ _c	840	850	860	nm
Damage Threshold		3.4			dB
receiver sensitivity in each lane*(Note5)	P _{min}			-9.5	dBm
LOS De-Assert, OMA	LOSD			-12	dBm
LOS Assert	LOSA	-30			dBm
LOS Hysteresis		0.5			dB

Note3: Output is coupled into a 50/125μm multi-mode fiber.

Note4: Filtered, measured with a PRBS 2³¹-1 test pattern @10.3125Gbps

Note5: Minimum average optical power measured at BER less than 1E-12, with a 2³¹-1 PRBS.

QSFP+ Transceiver Electrical Pad Layout



Pin Arrangement and Definition

Pin	Logic	Symbol	Description	Plug Sequence	Notes
1		GND	Ground	1	1
2	CML-I	Tx2n	Transmitter Inverted Data Input	3	
3	CML-I	Tx2p	Transmitter Non-Inverted Data Input	3	
4		GND	Ground	1	1
5	CML-I	Tx4n	Transmitter Inverted Data Input	3	
6	CML-I	Tx4p	Transmitter Non-Inverted Data Input	3	
7		GND	Ground	1	1
8	LVTTL-I	ModSelL	Module Select	3	
9	LVTTL-I	ResetL	Module Reset	3	3
10		VccRx	+3.3V Power Supply Receiver	2	2
11	LVC MOS- I/O	SCL	2-wire serial interface clock	3	
12	LVC MOS- I/O	SDA	2-wire serial interface data	3	
13		GND	Ground	1	1
14	CML-O	Rx3p	Receiver Non-Inverted Data Output	3	
15	CML-O	Rx3n	Receiver Inverted Data Output	3	
16		GND	Ground	1	1
17	CML-O	Rx1p	Receiver Non-Inverted Data Output	3	
18	CML-O	Rx1n	Receiver Inverted Data Output	3	
19		GND	Ground	1	1
20		GND	Ground	1	1
21	CML-O	Rx2n	Receiver Inverted Data Output	3	

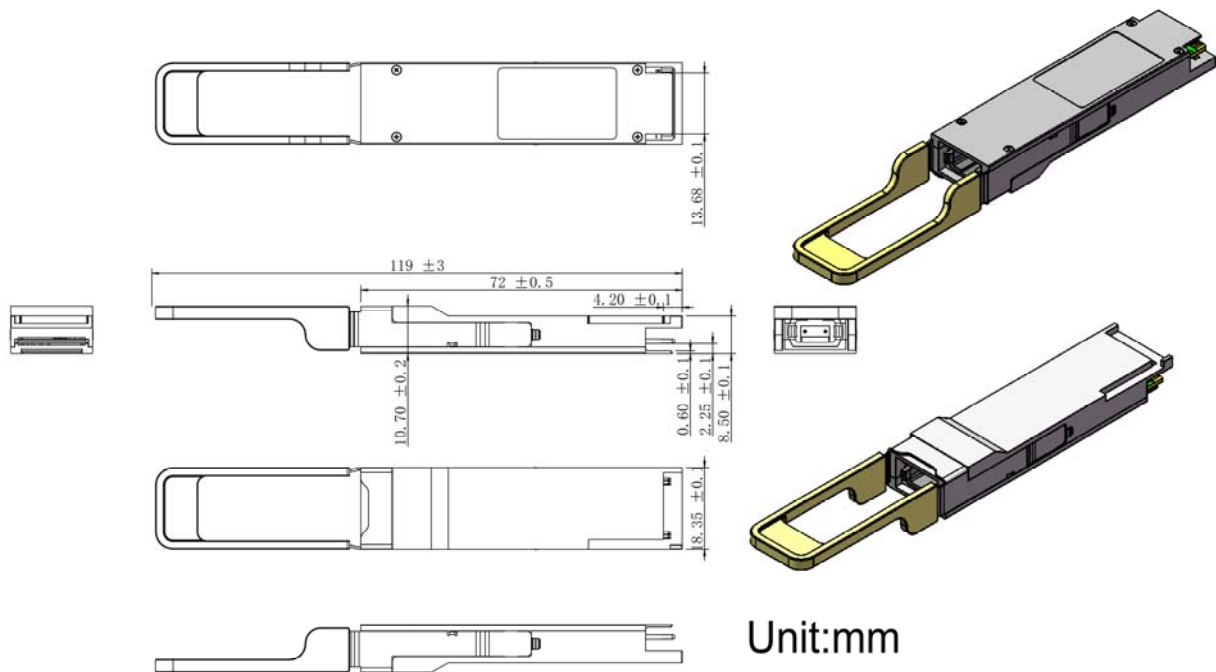
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22	CML-O	Rx2p	Receiver Non-Inverted Data Output	3	
23		GND	Ground	1	1
24	CML-O	Rx4n	Receiver Inverted Data Output	3	
25	CML-O	Rx4p	Receiver Non-Inverted Data Output	3	
26		GND	Ground	1	1
27	LVTTL-O	ModPrsL	Module Present	3	
28	LVTTL-O	IntL	Interrupt	3	
29		VccTx	+3.3V Power supply transmitter	2	2
30		Vcc1	+3.3V Power supply	2	2
31	LVTTL-I	LPMode	Low Power Mode	3	
32		GND	Ground	1	1
33	CML-I	Tx3p	Transmitter Non-Inverted Data Input	3	
34	CML-I	Tx3n	Transmitter Inverted Data Input	3	
35		GND	Ground	1	1
36	CML-I	Tx1p	Transmitter Non-Inverted Data Input	3	
37	CML-I	Tx1n	Transmitter Inverted Data Input	3	
38		GND	Ground	1	1

1: GND is the symbol for signal and supply (power) common for the QSFP+ module. All are common within the QSFP+ module and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal-common ground plane.

2: Vcc Rx, Vcc1 and Vcc Tx are the receiver and transmitter power supplies and shall be applied concurrently. Vcc Rx Vcc1 and Vcc Tx may be internally connected within the QSFP+ Module in any combination. The connector pins are each rated for a maximum current of 500mA.

Mechanical Specifications



*This 2D drawing only for reference, please check with Eoptolink before ordering.

Obtaining Document

You can visit our website: <http://www.eoptolink.com>

Or contact Eoptolink Technology Inc., Ltd. listed at the end of the documentation to get the latest documents.

Revision History

Revision	Initiated	Reviewed	Approved	Revision History	Release Date
V1.a	Marvin/Tony/ Vina/Peter	Jason/Chao/ Kelly/Lyn		Preliminary	Feb 27,2017
V1.b	Marvin	Kelly/Torres		Update the optical and electrical characteristics	Mar 8, 2017
V1.c	Nico	Marvin/Kelly/ William/Chao		Update the product image, the regulatory compliance, the 2D drawing and the contact information.	Aug 24, 2018
V1.d	Angela	Kelly/ Yiwei.Chen		Updated the regulatory compliance information.	December 14, 2018

Notice:

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