Maipu 40G QSFP+ 100M Transceiver

QSFP-M1-M768C8

Overview

Maipu QSFP-M1-M768C8 transceiver modules are designed for use in 40 Gigabit per second links over parallel multimode fiber, including breakout to four 10 Gigabit per second links. They are compliant with the QSFP+ MSA and IEEE 802.3ba 40GBASE-SR4 and compatible with IEEE 802.3ae 10GBASE-SR. They are RoHS compliant and lead-free.

Key Features

- Compliant with 40G Ethernet IEEE 802.3ba 40GBASE
- Duplex MPO optical connector
- 4*10Gb/s 850nm VCSEL laser transmitter
- RoHS compliant and Lead Free
- Distance up to 70m(OM3) and 100m(OM4) on multi-mode fiber
- Metal enclosure for lower EMI
- Low Power Consumption <1.5W
- Operating case temperature: 0℃ to 70℃

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Maximum Supply Voltage	Vc	-0.5		+4	V	
Storage Temperature	TS	-40		+85	°C	
Operating Humidity	RH	0		85	%	

Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Power Supply Voltage	Vcc	3.13	3.30	+3.47	V	
Power Supply Current	Icc			432	mA	
Case Operating Temperature	Tc	0		70	°C	
Bit Rate per Lane	BR	1062		10500	Mbps	
Link distance on OM3 MMF	Lmax			100	m	
Link distance on OM4 MMF	Lmax			150	m	
Power Supply Voltage	Vcc	3.13	3.30	+3.47	V	

Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Transmitter						
Single Ended Output Voltage Tolerance		-0.3		4	V	
AC Common mode Voltage Tolerance (RMS)		15			mV	
Tx Input Diff Voltage	Vi	90		1600	mV	
Tx Input Diff Impedance	Zi	80	100	120	Ω	
Differential Input Return Loss		See IEEE 802.3ba 86A.4.11			dB	
TX Fault-Low		Vee		Vee+0.8	V	
J2 Jitter Tolerance	Jt2	0.17			UI	
J9 Jitter Tolerance	Jt9	0.29			UI	
Data Dependent Pulse Width Shrinkage	DDPWS	0.07			UI	
Eye Mask Coordinates {X1, X2, Y1, Y2}			0.11, 0.31, 95, 350		UI, mV	
Receiver						
Single Ended Output Voltage Tolerance1		-0.3		4	V	
AC Common mode Voltage Tolerance(RMS)				7.5	mV	
Termination Mismatch at 1MHz				5	%	
Differential Output Return Loss		See IEEE 802.3ba 86A.4.2.1			dB	
Common- mode Output Return Loss		See IEEE 802.3ba 86A.4.2.2			dB	
Rx Output Diff Voltage	Vo		600	800	mV	
Rx Output Rise and Fall Time	Tr/Tf			35	ps	
J2 Jitter Tolerance	Jr2			0.46	UI	
J9 Jitter Tolerance	Jr9			0.65	UI	
Eye Mask Coordinates {X1, X2, Y1, Y2}			0.29, 0.5, 150, 425		UI, mV	

Optical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Transmitter						
Center Wavelength	λt	840	850	860	nm	
RMS Spectral Width	Pm			0.4	nm	
Average Optical Power, each Lane	Pavg	-7.6	-2.5	+2.4	dBm	
Optical Modulation Amplitude (OMA)	Poma	-6		3	dBm	
Peak Power, each Lane	Ppt			4	dBm	
Launch Power in OMA Transmitter		-7			dB	
TDP, each Lane				4	dB	
Extinction Ratio	ER	3			dB	
Relative Intensity Noise	Rin			-128	dB/HZ	12dB
Optical Return Loss Tolerance				12	dB	
Encircled Flux		>86% at 19um <30% at 4.5um				
Transmitter eye mask definition {X1, X2, X3, Y1, Y2, Y3}		0.23, 0.34, 0.43, 0.27, 0.33, 0.4				
Average Launch Power OFF Transmitter, each Lane	Poff			-30	dBm	
Receiver						
Center Wavelength	λr	840		860	nm	
Damage Threshold	Thd	2.4			dBm	
Average Power at Receiver Input, each Lane		-9.5		2.4	dBm	
Receiver Reflectance				-12	dB	
OMA, each Lane				3	dBm	
Stressed Receiver Sensitivity in OMA, each Lane				-7.5	dBm	
Peak Power, each Lane	Ppr			4	dBm	
Los Assert	LosA	-30			dBm	
Los Dessert	LosD			-10	dBm	
Los Hysteresis	LosH	0.5			dB	

Order Information

Model	Description
QSFP-M1-M768C8	40G QSFP+, 850nm, 100m, MPO, Multi-mode

Maipu values and appreciates comments you may have concerning our products or this document. Please address comments to:

Maipu Communication Technology Co., Ltd
Maipu Mansion, No.16, Jiuxing Avenue
Hi-Tech Zone
Chengdu, Sichuan Province
P. R. China
610041
Tel: (86) 28-65544850,
Fax: (86) 28-65544948,
URL: http:// www.maipu.com
Email: overseas@maipu.com