

Features:

- QSFP28 MSA compliant
- Supports 103.1 Gb/s aggregate bit rate
- 4x25Gb/s electrical interface
- Up to 2km on SMF and 100m on MMF(OM3)
- Hot-pluggable QSFP28 footprint
- LC duplex connector
- Maximum power consumption 3.5 Watts
- Single 3.3V power supply
- Support Digital Diagnostic Monitor interface
- Case operating temperature:0°C to +70°C
- RoHS compliant



Applications:

- 100GBASE Ethernet
- Data Center Interconnect

Compliance:

- SFF-8636
- IEEE802.3
- RoHS

1. Absolute Maximum Ratings

It has to be noted that the operation in excess of any individual absolute maximum ratings might cause permanent damage to this module.

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Maximum Supply Voltage	Vcc	0		3.6	V	
Storage Temperature	Ts	-40		85	°C	
Operating Case Temperature	Tcase	-5		75	°C	
Relative Humidity	RH	5		85	%	
Damage threshold,per lane	Pdam	3.6			dBm	

2. Recommended Operating Conditions

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Operating Case Temperature	Tcase	0		70	°C	
Supply Voltage	VCC	3.135	3.3	3.465	V	
Relative Humidity	RH	5		85	%	
Power Dissipation	PD			3.5	W	
Data Rate (optical)	DRO		4*25.78125		Gbps	
Data Rate (Electrical)	DRE		4*25.78125		Gbps	
Operating Link Distance	LD		SMF:2 MMF:0.1@OM3		km	

3. Optical Characteristics

100GBASE-LX4 Operation(EOL, TOP = 0~70°C, VCC = 3.135 to 3.465 V)

Parameters	Symbol	Min	Typ	Max	Unit	Note
Transmitter						
Signal Speed per Lane	BR	25.78125 ± 100 ppm			Gb/s	
Transmit wavelength	λ0	1264.5	1271	1277.5	nm	
	λ1	1284.5	1291	1297.5	nm	
	λ2	1304.5	1311	1317.5	nm	
	λ3	1324.5	1331	1337.5	nm	
Side-Mode Suppression Ratio	SMSR	30			dB	
Total Average Launch Power for SMF	Ptotal			8.5	dBm	
Total Average Launch Power for MMF				9.5	dBm	
Average launch power per lane for SMF	Pout	-6.5		2.5	dBm	
Average launch power per lane for MMF		-5.0		3.5	dBm	
Transmit OMA per Lane for SMF	TxOMA	-4.0		2.5	dBm	
Transmit OMA per Lane for MMF		-4.0		3.5	dBm	
Launch power OFF per lane	POff			-30	dBm	
Transmitter and Dispersion Penalty (TDP), each lane	TDP			3	dB	
Extinction Ratio (ER)	ER	3.5			dB	
RIN20 OMA	RIN			-128	dB/Hz	
Transmitter eye mask definition {X1,X2, X3, Y1, Y2, Y3}	{0.31, 0.40, 0.45, 0.34, 0.38, 0.4}					1
Mask margin		15			%	1

Receiver						
Signaling Speed per Lane	BR	25.78125 ± 100 ppm			Gb/s	
Receive wavelength	λ0	1264.5	1271	1277.5	nm	
	λ1	1284.5	1291	1297.5	nm	
	λ2	1304.5	1311	1317.5	nm	
	λ3	1324.5	1331	1337.5	nm	
Damage threshold, each lane	Pmax			3.5	dBm	
Average receive power per lane for SMF		-11.5		2.5	dBm	
Average receive power per lane for MMF		-8.6		3.5	dBm	
Rx Sensitivity (OMA) per lane for SMF	RSEN			-8.6	dBm	
Rx Sensitivity (OMA) per lane for MMF				-8.6	dBm	
Receiver reflectance	Rfl			-26	dB	
LOS Assert	LOSA	-30			dBm	
LOS De-Assert	LOSD			-12.5	dBm	
LOS Hysteresis		0.5		6	dB	

Notes

1. Hit ratio 5×10^{-5} .

4. Electrical Interface Characteristics

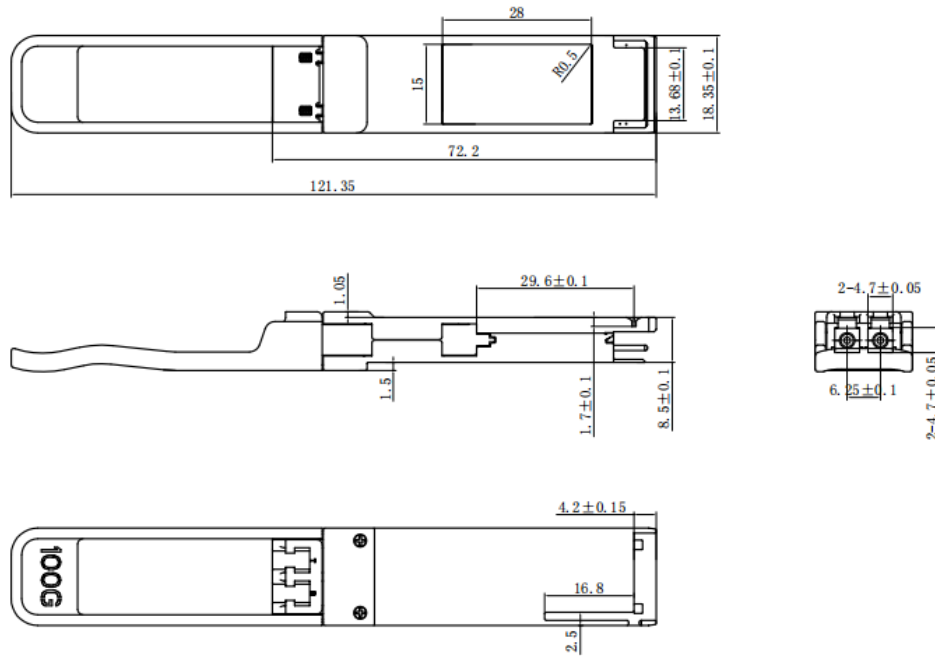
100GBASE-LX4 Operation (EOL, TOP = 0 ~70°C, VCC = 3.135 to 3.465 V)

Parameter	Symbol	Min	Typ	Max	Unit	Note
Power Dissipation				3.5	W	
Supply Current	Icc			1	A	
Transmitter						
Data Rate, each lane			25.78125		Gbps	
Differential Voltage pk-pk	Vpp	300		850	mV	
Input differential impedance	Rin		100		Ohm	1
Differential Termination Resistance Mismatch				10	%	
Receiver						
Data Rate, each lane			25.78125		Gbps	
Output differential impedance	Rout		100		Ohm	1
Differential Termination Resistance Mismatch				10	%	
Differential output voltage	Vout, pp	260		850	mV	2

Notes:

1.Connected directly to TX data input pins. AC coupled thereafter. 2.Into 100Ωdifferential termination.

5. Mechanical Diagram



Note: External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.

6. Ordering Information

OEM	Part Number	OEM	Part Number
Arista	QSFP-100G-SRC4-A	Mellanox	MMA1L30-CMSR-A
Cisco	QSFP-100-SRC4-A	MSA Generic	AN-QSFP28-UNIV
Intel	SPTSBP3CLCXXSR-A	OnePort	OP-QSFP28-UNIV
Juniper	JNP-QSFP-100G-C4SR-A		

7. Contact Information

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