Q28-100GP4-BXD3327-10-AO

MSA and TAA Compliant 100GBase-BX QSFP28 Single Lambda Transceiver (SMF, 1331nmTx/1271nmRx, 10km, LC, DOM, with FEC)

Features

- Compliant with 100G Lambda MSA 100G-LR Specifications
- Single 3.3V Power Supply
- Compliant with SFF-8636 Rev 2.10a
- Single-mode Fiber
- Bidi LC Connectors
- Power dissipation
- Hot Pluggable
- Commercial Temperature 0 to 70 Celsius
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free

Applications

- Datacenter
- 100GBase Ethernet

Product Description

This MSA Compliant QSFP28 transceiver provides 100GBase-BX throughput up to 10km over single-mode fiber (SMF) using a wavelength of 1331nmTx/1271nmRx via an LC connector. It is built to MSA standards and is uniquely serialized and data-traffic and application tested to ensure that they will integrate into your network seamlessly. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

AddOn's 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."

TAA COMPLIANT

Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883E Method 3015.4.
- ESD to the LC Receptacle: compatible with IEC 61000-4-3.
- EMI/EMC: compatible with FCC Part 15 Subpart B Rules, EN55022:2010.
- Laser Eye Safety: compatible with FDA 21CFR, EN60950-1& EN (IEC) 60825-1, 2.
- RoHS: compliant with EU RoHS 2.0 directive 2015/863/EU.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Maximum Supply Voltage	Vcc	-0.5		3.6	V	
Storage Temperature	Tstg	-40		85	°C	
Operating Case Temperature	Tc	0		70	°C	
Relative Humidity	RH	5		85	%	
Damage Threshold	RXdmg	5.5			dBm	

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.135	3.3	3.465	V	
Power Dissipation	P_{DISS}			4.5	W	
Transmitter						
Differential Data Input Swing Per Lane		900			mVp-p	
Differential Input Impedance	ZIN	90	100	110	Ω	
DC Common-Mode Voltage (Vcm)		-350		2850	mV	
Receiver						
Differential Output Amplitude				900	mVp-p	
Differential Output Impedance	ZOUT	90	100	110	Ω	
Output Rise/Fall Time	Tr/Tf	12			ps	20-80%
Eye Width		0.57			UI	
Eye Height Differential		228			mV	@TP4, $1E^{-15}$
DC Common-Mode Voltage (Vcm)		-350		2850	mV	1

Notes:

1. Vcm is generated by the host. Specification includes effects of ground offset voltage.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Signaling Speed			53.125		GBd	
Modulation Format			PAM4			
Center Wavelength	λC	1324.5	1331	1337.5	Nm	
Side-Mode Suppression Ratio	SMSR	30			dB	
Extinction Ratio	ER	3.5			dB	
Transmit OMA	TxOMA	0.7		4.7	dBm	
Transmit Average Power	TxAVG	-1.4		4.5	dBm	1
Launch Power in OMA_{outer} Minus TDECQ		-0.7			dBm	2
Launch Power in OMA_{outer} Minus TDECQ		-0.6			dBm	3
Transmitter and Dispersion Eye Closure	TDECQ			3.4	dB	
Launch Power of Off Transmitter Per Lane				-30	dBm	
Relative Intensity Noise	RIN			-136	dB/Hz	
Optical Return Loss Tolerance				15.6	dB	4
Transmitter Reflectance				-26	dB	
Receiver						
Signaling Speed			53.125		GBd	
Center Wavelength	λC	1264.5	1271	1277.5	Nm	
Damage Threshold		5.5			dBm	
Receive Power (OMA_{outer})	RxOMA			4.7	dBm	
Average Receive Power	RxAVG	-7.7		4.5	dBm	
Receiver Sensitivity (OMA_{outer})	SenOMA			MAX (-6.1, SECQ-7.5)	dBm	5
Stressed Sensitivity	SRS			-4.1	dBm	
Receiver Reflectance				-26	dB	
LOS Assert	LOSA	-26		-12	dBm	
LOS De-Assert	LOSD			-10	dBm	

Notes:

1. Average launch power (minimum) is informative and not the principal indicator of signal strength. A transmitter with launch power below this value cannot be compliant; however, a value above this does not ensure compliance.
2. For ER≥4.5dB.
3. For ER<4.5dB.
4. Transmitter reflectance is defined looking into the transmitter.
5. Sensitivity is specified at $2.4x10^{-4}$ BER.

Pin Descriptions

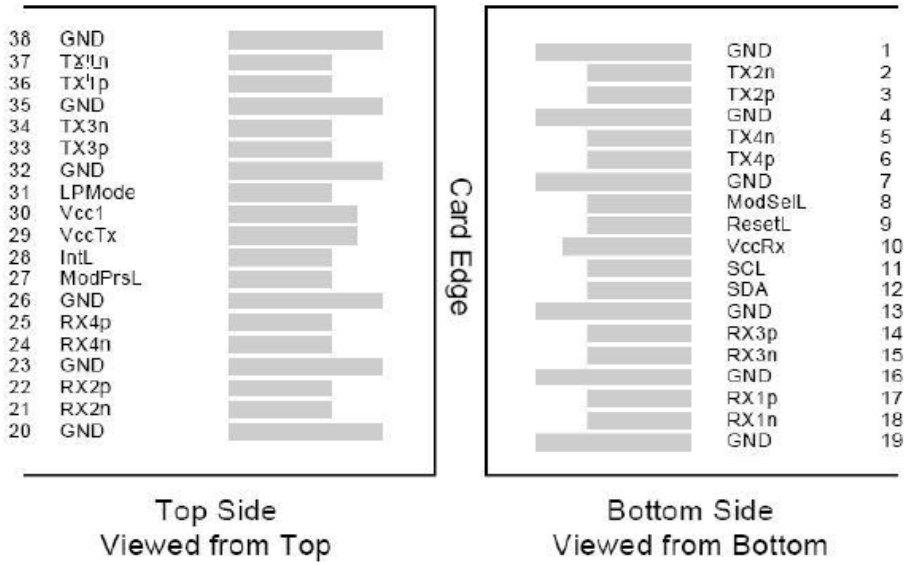
Pin	Logic	Symbol	Name/Descriptions	Notes
1		GND	Module Ground.	1
2	CML-I	Tx2-	Transmitter Inverted Data Input.	
3	CML-I	Tx2+	Transmitter Non-Inverted Data Output.	
4		GND	Module Ground.	1
5	CML-I	Tx4-	Transmitter Inverted Data Input.	
6	CML-I	Tx4+	Transmitter Non-Inverted Data Output.	
7		GND	Module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

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

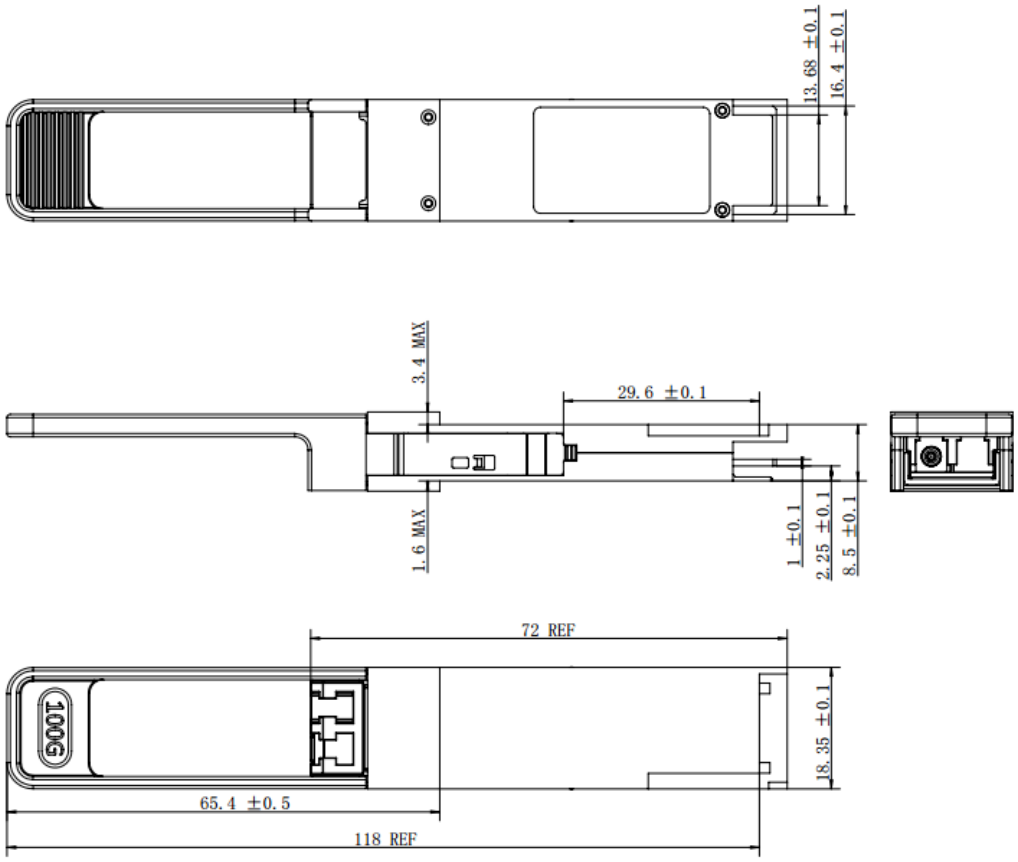
Notes:

1. GND is the symbol for signal and supply (power) common for the QSFP28 module. All are common within the QSFP28 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. VccRx, Vcc1, and VccTx are the receiver and transmitter power supplies and shall be applied concurrently. Recommended host board power supply filtering is shown below. VccRx, Vcc1, and VccTx may be internally connected within the QSFP28 transceiver module in any combination. The connector pins areeach rated for a maximum current of 1000mA.

Electrical Pin-Out Details



Mechanical Specifications



About AddOn Networks

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is in engrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications from ranging from NEBS Level 3 to ISO 9001:2005 with every new development while maintaining the signature reliability of its products.

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