100G QSFP28 to 4x Duplex LC AOC
PN: V1C-Q4LyyyC-AA

Product Overview

The V1C-Q4LyyyC-AA is a high-performance 100G QSFP28 to 4xDuplex-LC Breakout Active Optical Cable (AOC) designed for flexible connectivity in high-speed networking applications. This hot-pluggable QSFP28 module features an integrated 4xDuplex-LC pigtail cable, adhering to QSFP28 MSA and SFF-8636 standards. It utilizes a 4x25Gbps 850nm VCSEL-based transmitter and operates on a single 3.3V power supply.

Features

- Hot-pluggable 100G QSFP28 with 4xDuplex-LC pigtail cable
- Compliant to QSFP28 MSA
- Compliant with SFF-8636
- 4x25Gbps 850nm VCSEL-based Transmitter
- Single 3.3V power supply
- Case operating temperature 0°C to 70°C for C-temp, -20 to 85°C for E-temp
- Class 1 laser
- RoHS compliant

Ordering Information

Part Number	Description
V1C-Q4LyyyC-AA	100G QSFP28 to 4xDuplex-LC Breakout AOC, yyy in meters, C-temp
V1C-Q4LyyyC-EA	100G QSFP28 to 4xDuplex-LC Breakout AOC, yyy in meters, E-temp

General Specifications

Parameter	Symbol	Min	Max	Unit	Notes
Storage Temperature	T_S	-40	85	°C	
Power Supply Voltage	V_{CC}	-0.5	3.6	V	
Relative Humidity (non-condensing)	RH	5	85	%	

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Operating Case Temperature	T_{OPR}	0		70	°C
Power Supply Voltage	V_{CC}	3.135	3.3	3.465	V
Maximum Power Dissipation(400G)	PD			3.5	W
Signaling Rate per Lane	SRL		25.78		Gbps
Rx Differential Data Output Load			100		Ohm

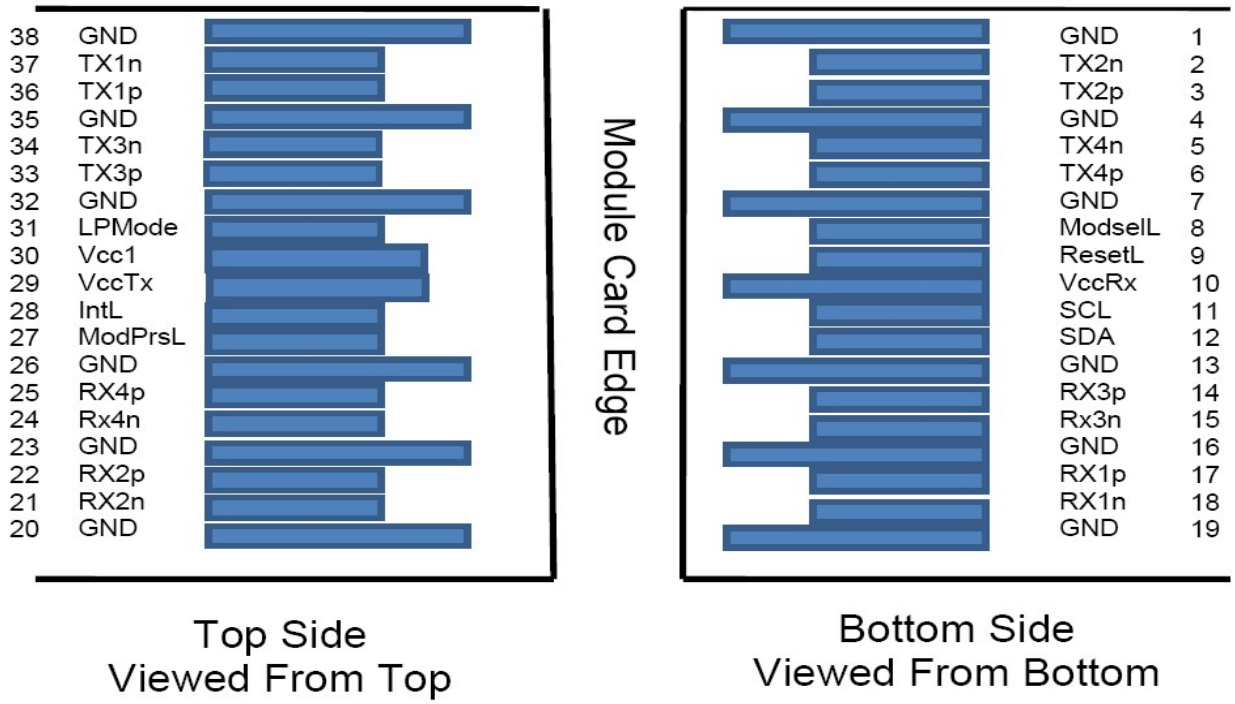
Transmitter Optical Specifications

Parameter	Symbol	Min	Typical	Max	Unit
Center Wavelength	λ_C	840	850	860	nm
RMS spectral width	$\Delta\lambda_{rms}$			0.6	nm
Average launch power, each lane	AOPL	-6.4		3	dBm
Optical Modulation Amplitude (OMA_{outer}), each lane	TOMA	-2.6		3.5	dBm
Average Launch Power of OFF Transmitter, each lane	T_{OFF}			-30	dBm
Extinction ratio, each lane	ER	3			dB
Optical return loss tolerance				-12	dB

Receiver Optical Specifications

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Center Wavelength	λ_C	840	-	860	nm	
Damage threshold		3.4			dBm	
Receiver sensitivity (OMA)	SOMA			-7.2	dB	BER@5E-5
Receiver reflectance				-12	dB	
LOS Assert	LOSA	-30			dBm	
LOS De-Assert	LOSD			-10.5	dBm	
LOS Hysteresis	LOSH	0.5			dB	

Electrical Connector Layout



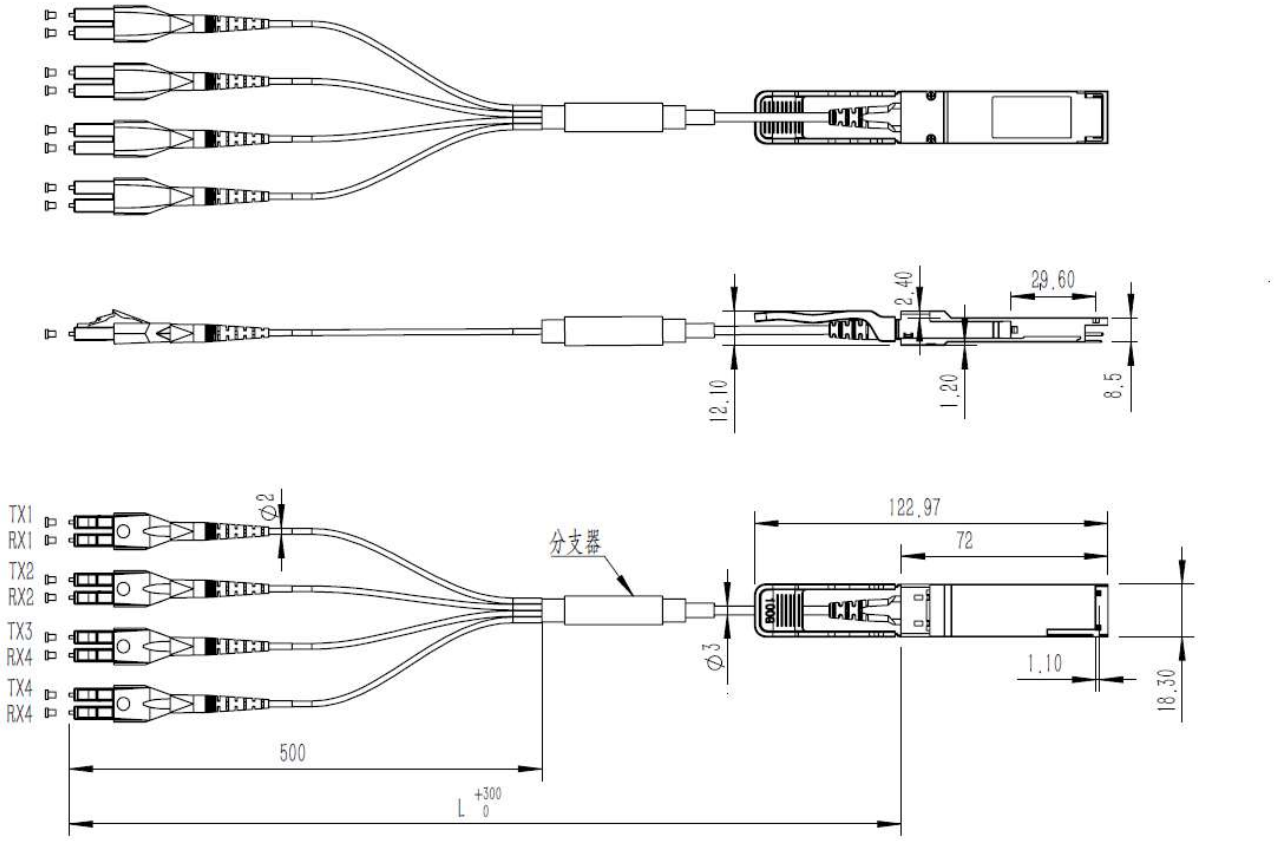
Electrical Pin Definition

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	
10		Vcc Rx	+3.3V Power Supply Receiver	2	2
11	LVCMOS-I/O	SCL	2-wire serial interface clock	3	
12	LVCMOS-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	
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		Vcc Tx	+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 QSFP56 module. All are common within the QSFP56 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. Recommended host board power supply filtering is shown in the below Figures. Vcc Rx Vcc1 and Vcc Tx may be internally connected within the QSFP56 Module in any combination. The connector pins are each rated for a maximum current of 500 mA.

Mechanical Dimensions



Revision History

Date	Rev	Description
02/01/2025	1.0	Release Version
03/17/2025	1.1	Rebranded Template

For more information

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