

100 Gb/s 40 km QSFP28 ER4 Transceiver

QSFP Series



Ascent's 100G QSFP28 ER4 is designed for 40km optical communication applications. This module contains 4-lane optical transmitter, 4-lane optical receiver and module management block including 2 wire serial inter-face. The optical signals are multiplexed to a single-mode fiber through an industry standard LC connector.

Ascent's 100G QSFP28 ER4 Optical Transceiver offers service providers, network operators 100 Gigabit Ethernet connectivity options for data center networking, enterprise core aggregation, and service provider transport applications. It integrates receiver and transmitter path on one module.

In the transmit side, four lanes of serial data streams are recovered, retimed, and passed to four laser drivers. The laser drivers control 4-DML with center wavelength of 1296 nm, 1300nm, 1305nm and 1309 nm. The optical signals are multiplexed to a single-mode fiber through an industry standard LC connector.

In the receive side, the four lanes of optical data streams are optically de-multiplexed by the integrated optical de-multiplexer. Each data stream is recovered by a APD and trans-impedance amplifier, retimed. This module features a hot-pluggable electrical interface, low power consumption and 2-wire serial interface.

This product is designed with form factor, optical/electrical connections, and digital diagnostic interface according to the QSFP28 Multi-Source Agreement (MSA) and compliant to IEEE 802.3bm.

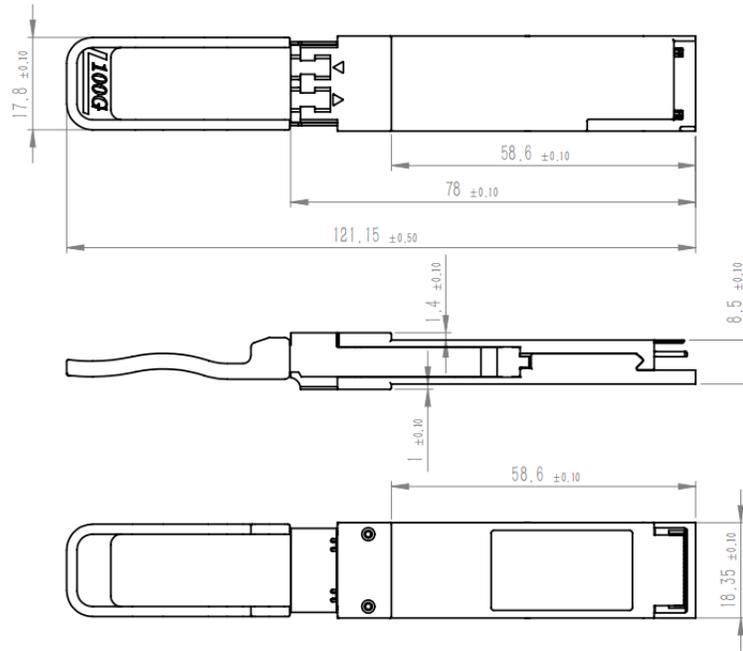
Key Features

- Supports 100GE line rate (103.125 Gb/s, CAUI-4)
- Up to 30 km reach (up to 40 km on G.652 SMF with FEC)
- LAN-WDM DML transmitter with APD receiver
- QSFP28 MSA compliant, duplex LC interface
- Integrated DDM via I²C
- Low power supply consumption(<4.5W commercial / <5.5W industrial)
- Wide operating temperature: 0°C~70°C / -40°C~85°C

Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating Case Temperature	T_{op}	0		+70	°C
		-40		+85	°C
Power Supply Voltage	V_{CC}	3.13	3.3	3.47	V
Power Supply Current	I_{CC}	-		1.36	A
				1.67	A
Maximum Power Consumption	P_D			4.5	W
				5.5	
Aggregate Bit Rate	BR_{AVE}		103.125		Gb/s
Lane Bit Rate	BR_{LANE}		25.78125		Gb/s
Signaling Speed per Lane			25.78125		Gbps
Lane Wavelength	$L0$	1294.53	1295.56	1296.59	nm
	$L1$	1299.02	1300.05	1301.09	nm
	$L2$	1303.54	1304.58	1305.63	nm
	$L3$	1308.09	1309.14	1310.19	nm
Total Average Launch Power	P_T			12.5	dBm
Average Launch Power per Lane, OMA, each Lane	P_{avg}	0		6.5	dBm
Average Output Power(Laser Turn Off)	P_{off}	0.5		6.5	dBm
Average Output Power(Laser Turn Off)				-30	dBm
Signaling Rate, each Lane			25.78125		Gbps
Center Wavelength Lane 0	λ_0	1294.53	1295.56	1296.59	nm
Center Wavelength Lane 1	λ_1	1299.02	1300.05	1301.09	nm
Center Wavelength Lane 2	λ_2	1303.54	1304.58	1305.63	nm
Center Wavelength Lane 3	λ_3	1308.09	1309.14	1310.19	nm
Damage Threshold , each Lane	P_{damage}	-2.5			dBm
Differential Voltage pk-pk	V_{pp}			900	mV
Differential Output Voltage Swing	$V_{out, pp}$			900	mV

Outline Diagram



Ordering Information

Product Name	Product Description
QSFP28-100G-ER4	QSFP28 Plug-in, 100G-ER4, 40km, 1295 nm, 1300 nm, 1304 nm, 1309 nm Optical Transceiver, LC, DOM
Q28-100G-ER4A	QSFP28 Plug-in, 100G-ER4, 40km, 1295 nm, 1300 nm, 1304 nm, 1309 nm Optical Transceiver, LC, DOM, -40 to +85°C
JQ28-100G-ER4	QSFP28 Plug-in, 100G-ER4, 40km, 1295 nm, 1300 nm, 1304 nm, 1309 nm Optical Transceiver, LC, DOM, Compatible with Juniper
JQ28-100G-ER4A	QSFP28 Plug-in, 100G-ER4, 40km, 1295 nm, 1300 nm, 1304 nm, 1309 nm Optical Transceiver, LC, DOM, -40 to +85°C, Compatible with Juniper



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Ver. ACT_QSFP28-100G-ER4_Overview_V1d_May_2024