

## 100 Gb/s 40 km QSFP28 ER4 Lite Transceiver

### QSFP Series



Ascent's 100G QSFP28 ER4 Lite is designed for 40km optical communication applications with FEC on host side. 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 Lite 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.

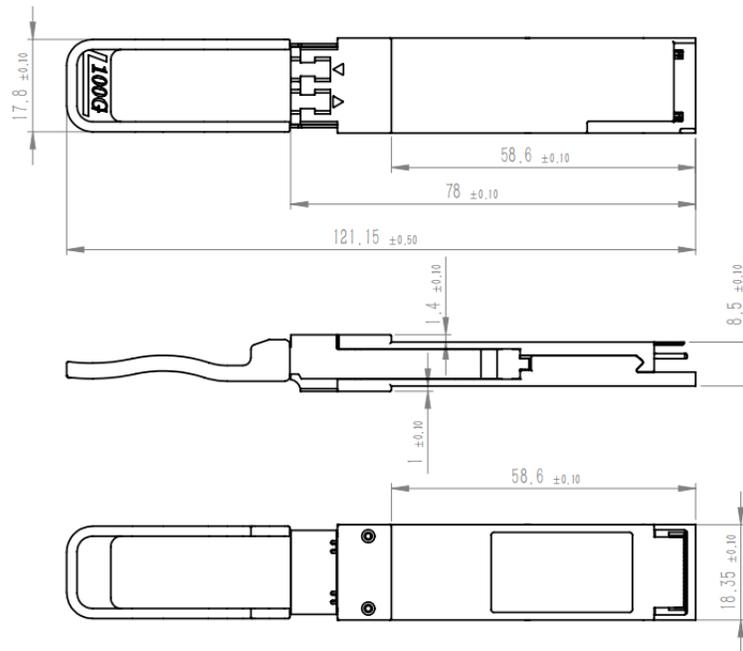
### Key Features

- 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 I<sup>2</sup>C
- Low power 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	$P_{avg}$	-2.5		6.5	dBm
Average Output Power(Laser Turn Off)	$P_{off}$	0		6.5	dBm
Average Output Power(Laser Turn Off)				-30	dBm
Signaling Rate, each Lane			25.78125		Gbps
Center Wavelength Lane 0	$\lambda_0$	1294.53	1295.56	1296.59	nm
Center Wavelength Lane 1	$\lambda_1$	1299.02	1300.05	1301.09	nm
Center Wavelength Lane 2	$\lambda_2$	1303.54	1304.58	1305.63	nm
Center Wavelength Lane 3	$\lambda_3$	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-ER4L	QSFP28 Plug-in, 100G-ER4L, 40 km (with FEC) 1295 nm, 1300 nm, 1304 nm, 1309 nm Optical Transceiver, Duplex LC, DOM
Q28-100G-ER4LA	QSFP28 Plug-in, 100G-ER4L, 40km (with FEC) 1295 nm, 1300 nm, 1304 nm, 1309 nm Optical Transceiver, LC, DOM, -40 to +85°C
JQ28-100G-ER4L	QSFP28 Plug-in, 100G-ER4L, 40 km (with FEC) 1295 nm, 1300 nm, 1304 nm, 1309 nm Optical Transceiver, Duplex LC, DOM, Compatible with Juniper
JQ28-100G-ER4LA	QSFP28 Plug-in, 100G-ER4L, 40km (with FEC) 1295 nm, 1300 nm, 1304 nm, 1309 nm Optical Transceiver, LC, DOM, Industrial Temp -40 °C to +85 °C, Compatible with Juniper



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