QSFP28-100G-SR4

100Gbps QSFP28 SR4 Transceiver, Multi Mode, 100m Reach

Product Features

- Hot-pluggable QSFP28 form factor
- Supports 103.1Gb/s aggregate bit rates
- Power dissipation < 3.5W
- RoHS-6 compliant
- Commercial case temperature range of 0°C to 70°C
- Single 3.3V power supply
- Maximum link length of 100m on OM4 Multimode Fiber (MMF)

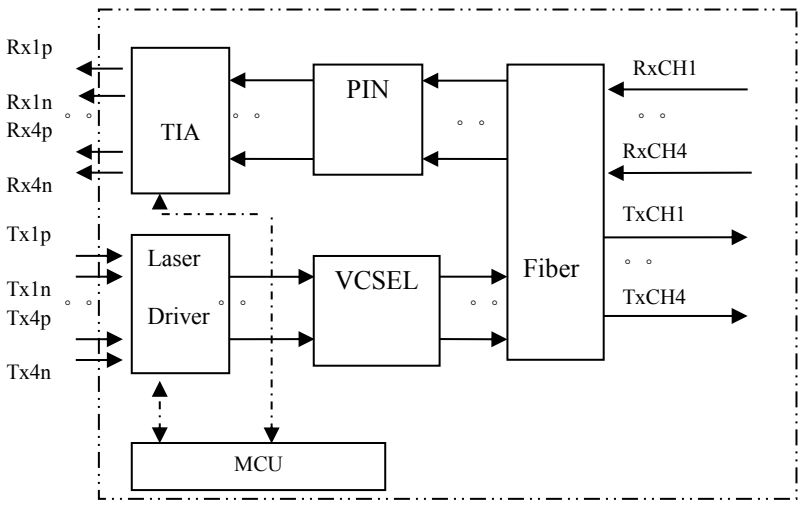
- 4x25Gb/s 850nm VCSEL-based transmitter
- 4x25G electrical interface
- Single MPO12 receptacle
- I2C management interface

Application

- 100GBASE-SR4 100G Ethernet
- Data Center Interconnect
- Infiniband QDR and DDR interconnects
- Enterprise networking

Description

The 100G QSFP28 transceiver modules are designed for use in 100 Gigabit Ethernet links over multimode fiber. They are compliant with the IEEE 802.3bm 100GBASE-SR4 and CAUI-4. Digital diagnostics functions are available via the I2C interface as specified by the QSFP28 MSA.



Absolute Maximum Ratings

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Storage Temperature	TS	-20	-	+85	°C	
Supply Voltage	VCC	-0.3	-	+3.6	V	
Case Operating Temperature	TOP	0	-	70	°C	
Operating Relative Humidity	RH	-	-	+85	%	
Receiver Damage Threshold, per Lane	PRdmg	5.5	-	-	dBm	

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Operating Case Temperature	TC	0	-	+70	°C	
Power Supply Voltage	VCC	3.13	3.3	3.47	V	
Aggregate Bit Rate	BRAVE	-	103.125	-	Gb/s	
Lane Bit Rate	BRLANE	-	25.78	-	Gb/s	
Humidity	Rh	5	-	85	%	
Fiber Bend Radius	Rb	3	-	-	cm	

Electrical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Supply Voltage	Vcc	3.135		3.465	V	
Supply Current	Icc			1.5	A	
Module total power	P			3.5	W	
Transmitter (Module Input)						
Signaling rate per lane			25.78		Gb/s	2
Differential data input voltage per lane	Vin,pp,diff			900	mV	
Single-ended voltage tolerance	Vin,pp	-0.35		3.3	V	
Receiver (Module Output)						
Signaling rate per lane			25.78		Gb/s	2
Differential data output swing	Vout,pp	400	600	800	mVpp	
Transition time (20% to 80%)	Tr, Tf	12			ps	
Bit Error Rate	BER			E-12		3

Notes:

1. Maximum total power value is specified across the full operational temperature and voltage range when CDRs are locked or a lack of input signal results in squelch being activated. If incorrect frequencies cause the CDRs to continuously attempt to lock, maximum power dissipation may reach 4.5 W.
2. ± 100ppm
3. BER=10-12; PRBS 231-1@25.78125Gbps.

Optical Characteristics

(EOL, T_{OP} = 0 to 70°C, V_{CC} = 3.135 to 3.465 Volts)

Optical characteristics are dependent on data rate and protocol. Ethernet 100GBASE-SR4, are as follows:

100GBASE-SR4 Ethernet Operation

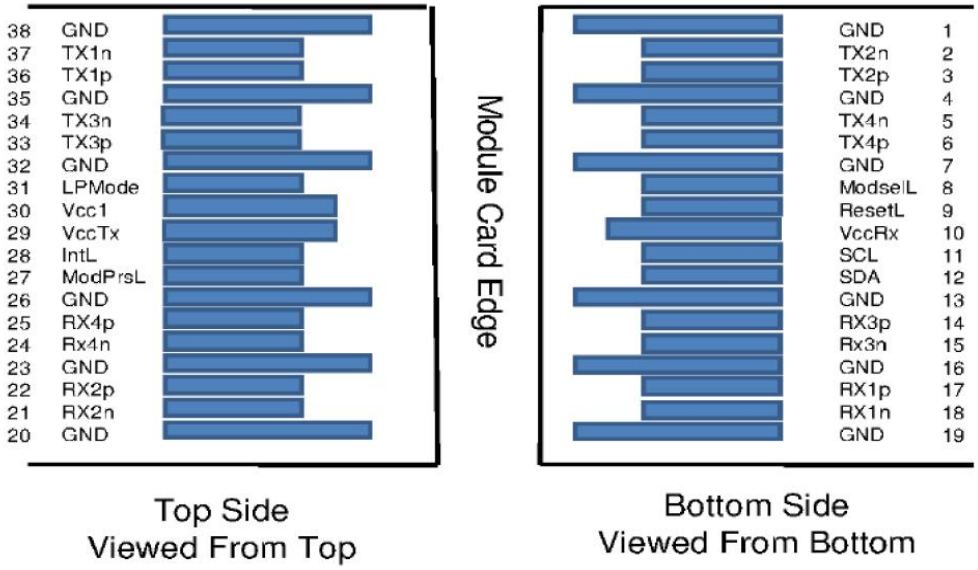
Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter (Module Input)						
Signaling Speed per Lane	25.78125 ± 100ppm				Gb/s	1
Center wavelength		840	-	860	nm	
RMS Spectral Width	SW	-	-	0.6	nm	
Average Launch Power per Lane	TXPx	-8.4	-	2.4	dBm	
Transmit OMA per Lane	TxOMA	-6.4	-	3	dBm	
Launch Power [OMA] minus TDEC per Lane	P-TDEC	-7.3	-		dBm	
TDEC per Lane	TDEC	-	-	4.3	dBm	
Optical Extinction Ratio	ER	2	-		dB	
Receiver (Module Output)						
Signaling Speed per Lane	25.78125 ± 100ppm				GBd	2
Center wavelength		840	-	860	nm	
Average Receive Power per Lane	RXPx	-10.3	-	2.4	dBm	3
Receiver Reflectance	Rfl	-	-	-12	dB	
Stressed Receiver Sensitivity (OMA) per Lane	SRS	-	-	-5.2	dBm	
Receiver (Module Output)						
LOS De-Assert	LOSD	-	-	-12	dBm	
LOS Assert	LOSA	-30	-	-	dBm	
LOS Hysteresis		0.5	2	-	dB	

Notes:

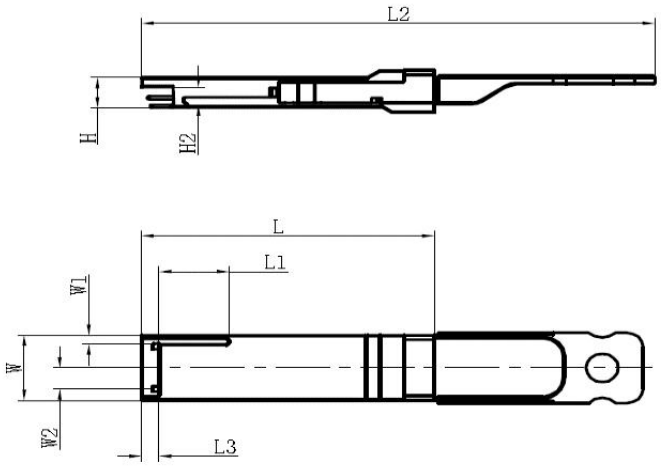
1. Transmitter consists of 4 lasers operating at a maximum speed of 25.78125Gb/s ±100ppm each.
2. Receiver consists of 4 photo detectors operating at a maximum speed of 25.78125Gb/s ±100ppm each.

3. Minimum value is informative only and not the principal indicator of signal strength.
4.Hit Ratio 5 x 10-5 hits/sample.

Pin Description



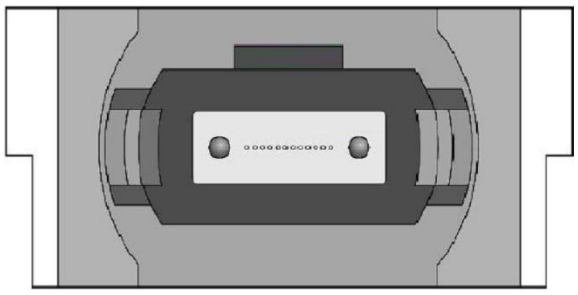
Mechanical Dimension

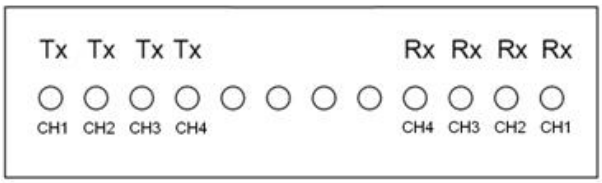


Unit: mm

	L	L1	L2	L3	W	W1	W2	H	H1	H2
MAX	72.2	—	122	4.35	18.45	—	6.2	8.6	12.0	5.35
Typical	72.0	—	—	4.20	18.35	—	—	8.5	11.8	5.2
MIN	68.8	16.5	118	4.05	18.25	2.2	5.8	8.4	11.6	5.05

Optical Interface





Ordering Information

Part Number	Product Description
QSFP28-100G-SR4	100G QSFP28 SR4 Transceiver,850nm, MTO/MPO, 100m, 0°C~+70°C, with DDM