

Transceiver QSFP28 100G 850nm SR 100m MPO

T28100G85SR100MPO

The 100G QSFP28 MPO transceiver modules are designed for use in 100 Gigabit Ethernet links over multimode fibre. 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.

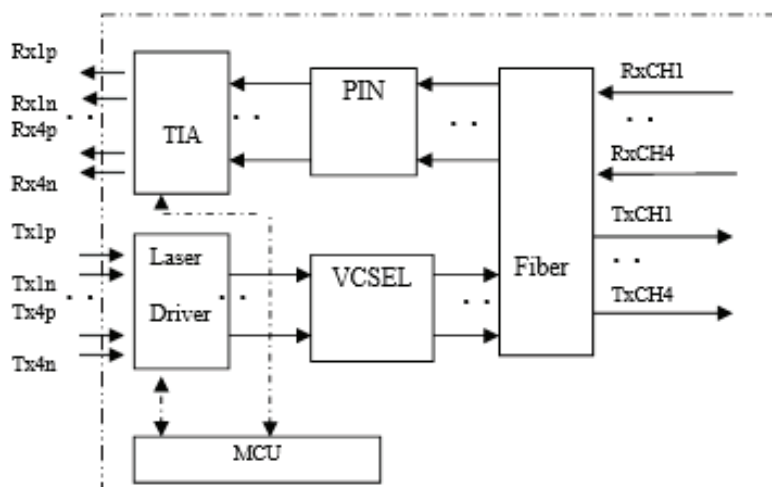


KEY FEATURES

- 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 Fibre (MMF)
- 4x25Gb/s 850nm VCSEL-based transmitter
- 4x25G electrical interface
- Single MPO12 receptacle
- I2C management interface
- Cisco Compatible

APPLICATIONS

- Data Centre and Enterprise networking
- 100 Gigabit Ethernet interconnects
- Datacom/Telecom switch & router connections
- Data aggregation and backplane applications
- InfiniBand QDR and DDR interconnects



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	%	
FIBRE 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 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 2. ± 100ppm

Optical Characteristics

(EOL, TOP = 0 to 70°C, VCC = 3.135 to 3.465 Volts)

Optical characteristics are dependent on data rate and protocol. Ethernet, are as follows:

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:

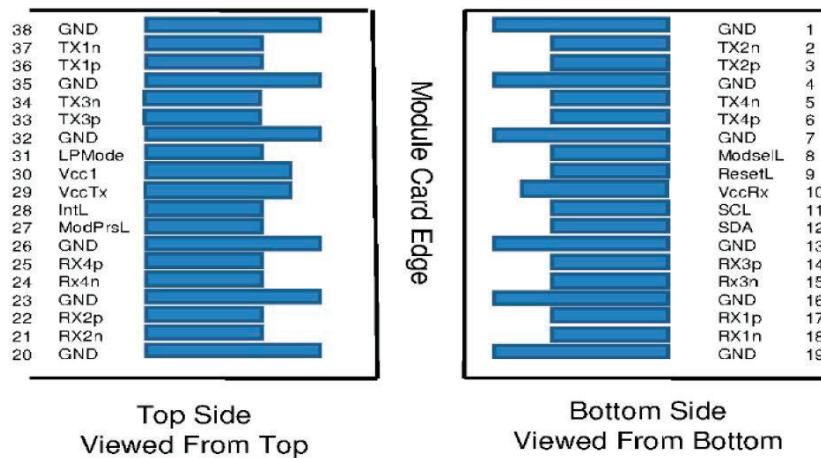
4. Transmitter consists of 4 lasers operating at a maximum speed of 25.78125Gb/s ±100ppm each.

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

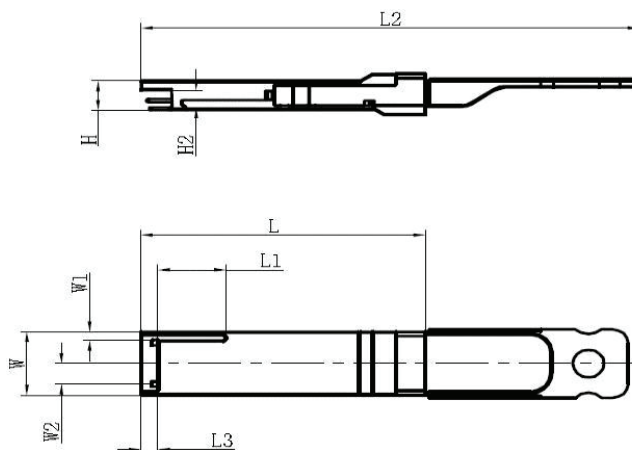
6. Minimum value is informative only and not the principal indicator of signal strength.

7. 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

