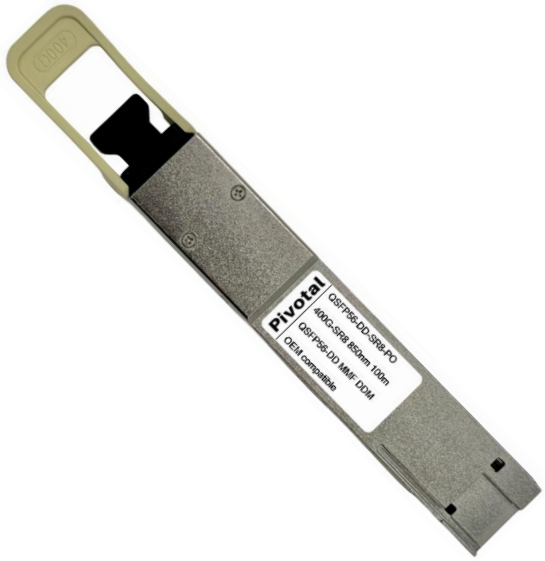
QSFP56-DD-SR8

400G, QSFP56-DD, SR8, MMF TRANSCEIVER

850nm, 100m REACH, MPO16 CONNECTOR

Product Features

- Compliance to QSFP DD MSA Rev 3.0 (for Memory Map) and 5.0 (for Mechanical QSFP-DD Housing)
- Supports 425Gbps aggregate bit rate
- Maximum link length of 70m OM3, 100m OM4
- Maximum Power Consumption: 10W
- Hot pluggable electrical interface
- Using standard 1 Row by 16 Channel MPO Connector
- RoHS-6 Compliant (lead-free)
- Case operating temperature:
  - Commercial: 0 ~ 70°C



Product Applications

- 400GBASE-SR8 400G Ethernet
- Data Center

I. Maximum Ratings

Exceeding the limits below may damage the transceiver module permanently.

Parameter	Symbol	Min.	Typ.	Max.	Units
Storage Temperature	Ts	-40		85	°C
3.3V Power Supply Voltage	Vcc	-0.5		+3.6	V
Data Input Voltage-Single Ended		-0.5		Vcc+0.5	V
Control Input Voltage		-0.5		3.6	V
Relative Humidity (non-condensing)	RH	5		85	%
Rx Optical Damage Threshold / Lane		5			dBm

II. Operating Specifications

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Case Operating Temperature	Tcase	0		70	°C	Commercial
Bit Error Ratio	BER			$2.4x10^{-4}$		1,2
Power Supply Voltage	Vcc	3.135	3.3	3.465	V	
Differential Data Input / Output Load			100		Ohms	±10%
Two Wire Serial (TWS) Interface Clock Rate				1	Mhz	
Data Rate per Channel				53.125	Gbps	
Control Input Voltage High		2		Vcc+0.3	V	
Control Input Voltage Low		-0.3		0.8	V	
Transmission Distance	TD			70	m	OM3
				100		OM4

Notes:

1. Bit-Error-Rate (BER) is tested with PRBS 31Q pattern.
2. 400G QSFP-DD SR8 requires an electrical connector compliant with QSFP-DD MSA which is used on the host board in order to guarantee its electrical interface specification.

III. Optical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Center Wavelength	λ	840		860	nm	
Spectral Width (RMS)	Δλ			0.6	dB	
Average Launch Power	LOP	-6		4	dBm	each lane
Optical modulation amplitude	OMA	-4		3		each lane
Launch power in OMA outer minus TDECQ		-5.9			dBm	
Transmitter and dispersion eye closure for PAM4 (TDECQ)	TDECQ			4.9	dB	each lane
Extinction Ratio	ER	3			dB	
Average launch Power OFF Tx	Poff			-30	dBm	each lane
Optical return loss tolerance				12	dB	
Encircled Flux		≥ 86% @ 19um,≤ 30% at 4.5um				

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Receiver						
Center Wavelength	λ	840		860	nm	
Damage threshold	Rdmg	5			dBm	
Average receiver power	RxP	-7.9		4	dBm	1
Receive Power, each lane (OMA)				3	dBm	
Receiver reflectance				-12	dB	
Receiver Sensitivity (OMA)	OMAouter	See Eq. 3				2,3
Stressed Receiver Sensitivity in OMA				-3		4
Conditions of stressed receiver sensitivity test:						
Stressed eye closure for PAM4 (SECQ)			4.9		dB	
OMA of each aggressor lane			3		dBm	

Notes:

1. Average receive power, each lane (min) is informative and not the principal indicator of signal strength. A received power below this value cannot be compliant; however, a value above this does not ensure compliance.
2. Receiver sensitivity is informative and is defined for a transmitter with a value of SECQ up to 4.9 dB.
3. Equation 3: RS= Max (-6, SECQ-7.9) (dBm), where RS is the receiver sensitivity SECQ is the SECQ of the transmitter used to measure the receiver sensitivity
4. Measured with conformance test signal at TP3 for the BER of 2.4 E-4

IV. Electrical Characteristics

Parameter	Min	Typical	Max	Unit	Notes
Trx Power Consumption			10	W	
Trx Power-on Initialization Time			2000	ms	
400GAUI-8 Module Electrical Input Characteristics (TP1)					
Single Ended Input Voltage Tolerance	-0.4		3.3	V	
Differential pk-pk input voltage			880	mV	
DC common mode voltage	0.3		2.8	V	
CAUI-4 Module Electrical Output Characteristics (TP4)					
AC Common-Mode Output Voltage (RMS)			17.5	mV	
Differential Output Voltage			900	mV	
Near-end ESMW (Eye symmetry mask width)	0.265			UI	
Far-end ESMW (Eye symmetry mask width)	0.2			UI	
Near-end Eye Height	70			mV	
Far-end Eye Height	30			mV	
Transition Time (20% to 80%)	9.5			ps	
DC Common Voltage	-350		2850	mV	

V. Ordering Information

Pivotal Part Number	Description
QSFP56-DD-SR8	QSFP-DD, 850nm, SR8 MMF 70/100m (with 8x50G/25G application), MPO16, 400G DDM, C-Temp

Notes:

1. Please contact sales for specific OEM Platform part numbers to fit your network.

Warranty
https://pivotaloptics.com/warranty/

Disclaimer
External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.