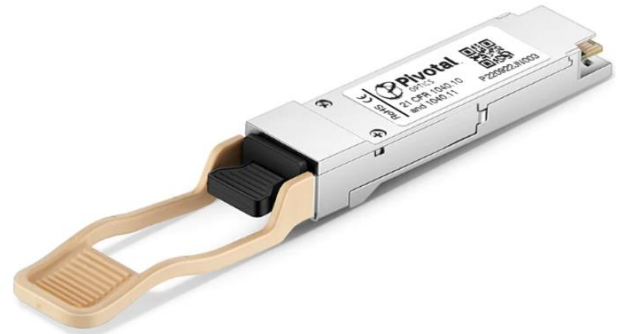


# QSFP-40G-CSR4

## 40GBase QSFP+ CSR4 850nm MMF 300m(OM3)/400m(OM4) Transceiver

### Product Features

- Support up to 40Gb/s bit rates
- Hot-pluggable QSFP+ Built-in digital diagnostic
- Maximum link length over MMF:
  - 300m (OM3) / 400m (OM4)
- QSFP+ MSA package with MPO connector
- 4-Channel 850nm VCSEL / PIN photo detector
- +3.3V power supply
- Low Power Consumption < 1.5W
- RoHS-6 Compliant
- Case operating temperature:
  - Commercial: 0 ~ 70°C



### Product Applications

- 40GBASE-CSR4
- 4-ChannelSDR, DDR, QDR

### 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
Supply Voltage	Vcc	-0.3		3.6	V
Relative Humidity (non-condensing)	RH	5		95	%
Input Voltage	Vin	-0.3		Vcc+0.3	V

### II. Operating Specifications

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Case Operating Temperature	TC	0		70	°C	Commercial
Fiber Bend Radius		3			cm	
Power Dissipation	PD			1.5	W	
Data Rate, each Lane	DR		10.3125		Gb/s	
Link Distance ( OM3 MMF )	D			300	M	OM3
Link Distance ( OM4 MMF )	D			400	M	OM4

### III. Optical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
<b>Transmitter</b>						
Center Wavelength	$\lambda_C$	840	850	860	nm	
RMS Spectral Width	$\Delta\lambda_{rms}$			0.65	nm	
Avg. Optical Launch Power (each lane)	$P_{avg}$	-7.6		2.4	dBm	
Difference in launch power between any two lanes (OMA)	$P_{tx,diff}$			4.0	dB	
Transmitter and Dispersion Penalty (each lane)	TDP			3.5	dB	
Extinction Ratio	ER	3			dB	
Peak Power				4	dBm	
Optical Return Loss Tolerance	TOL			12	dB	
Eye Mask coordinates: X1, X2, X3, Y1, Y2, Y3		{ 0.23, 0.34, 0.43, 0.27, 0.35, 0.4 }				Hit Ratio = 5x10-5
Average Launch Power OFF Transmitter (each lane)	$P_{off}$			-30	dBm	
<b>Receiver</b>						
Center Wavelength	$\lambda_C$	840		860	nm	
Average Receive Power (each lane)	$P_{avg}$	-9.9		2.4	dBm	
Receiver Reflectance	RR			-12	dB	
Receive Power (OMA), (each lane)				3.0	dBm	
Stressed Receiver Sensitivity (OMA), each Lane				-5.4	dBm	
Peak Power				4	dBm	
LOS Assert	LOSA	-30			dBm	
LOS De-assert	LOSD			-7.5	dBm	
LOS hysteresis	LOSH	0.5			dB	

Notes:

1. Measured with conformance test signal at TP3 for BER = 10e-12

## QSFP-40G-CSR4

40GBASE, QSFP+, CSR4, MMF TRANSCEIVER  
850nm, 300m/400m REACH, MTP/MPO CONNECTOR

### IV. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
<b>Transmitter</b>						
Differential Input Voltage Swing	V <sub>in,pp</sub>	300		1100	mV	
Differential Input Impedance	Z <sub>in</sub>	90	100	110	Ohm	
Skew				300	ps	
Input High Voltage (ResetL-LPMode)	V <sub>IH</sub>	+2.0		V <sub>cc</sub>		
Input LOW Voltage (ResetL-LPMode)	V <sub>IL</sub>	0		+0.8		
<b>Receiver</b>						
Differential Output Voltage Swing	V <sub>out,pp</sub>	500		800	mVpp	
Differential Output Impedance	Z <sub>out</sub>	90	100	110	Ohm	
Bit Error Rate	BER			E-12		
Output High Voltage (IntL)	V <sub>OH</sub>	V <sub>cc</sub> -0.5		V <sub>cc</sub>		
Output LOW Voltage (IntL)	V <sub>OL</sub>	0		+0.4		

Notes:

1. BER=10<sup>-12</sup>; PRBS 2<sup>31-1</sup>@10.3125Gbps
2. Differential input voltage amplitude is measured between TxnP and TxnN.
3. Differential output voltage amplitude is measured between RxnN and RxnN.

#### Warranty

All transceivers feature a limited lifetime 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.