

QSFP-IR4-P-40GD

**40GBASE, QSFP+ PSM IR4, SMF TRANSCEIVER 1310nm, 2km
REACH, MTP/MPO CONNECTOR**

Product Features

- 4 Parallel lanes design
- Compliant with QSFP+MSA
- Management interface specifications per SFF-8436
- 4 channels PIN photo detector
- Up to 11.2Gb/s per channel data links
- Single +3.3V power supply
- Class 1 laser safety certified
- Up to 2km on SMF
- RoHS Compliant
- Case operating temperature:
 - Commercial: 0 ~ 70°C



Product Applications

- 40GBASE-LR4 Ethernet
- InfiniBand: QDR, DDR, SDR
- Datacenters

I. Maximum Ratings

Exceeding the limits below may damage the transceiver module permanently.

Parameter	Symbol	Min.	Typ.	Max	Units	Notes
Storage Temperature	Ts	-40		85	°C	
Relative Humidity	RH	5		95	%	
Supply Voltage	Vcc	-0.5		4.0	V	

II. Operating Specifications

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Operating Case Temperature	Top	0		70	°C	Commercial
Supply Voltage	VCC	3.135	3.3	3.465	V	
Data Rate per channel			10.3125	11.2	Gb/s	
Transmission Distance	TD			2	km	

III. Optical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Center Wavelength Range	λ_C	1260	1310	1355	nm	
Launch Optical Power per lane	P	-6		+1.5	dBm	1
Side Mode Suppression Ratio	SMSR	30			dB	
Extinction Ratio	ER	3.5			dB	2
Optical Return Loss Tolerance	ORLT			12	dB	
Pout @TX-Disable Asserted	Poff			-30	dBm	1
Eye Diagram		IEEE Std 802.3ba compatible				
Receiver						
Center Wavelength	λ_C	1260		1355	nm	
Receiver Sensitivity (OMA)	sen			12.6	dBm	3
Damage Threshold	THd	2.3			dBm	3
LOS Assert	LOS A			-15	dBm	
LOS De-Assert	LOS D	-30			dBm	
LOS Hysteresis	LOS H	0.5			dB	

Notes:

1. The optical power is launched into SMF.
2. Measured with a PRBS $2^{31}-1$ test pattern, @10.325Gb/s
3. Measured with PRBS $2^{31}-1$ test pattern, 10.3125Gb/s, BER< 10^{-12} .

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IV. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Dissipation	P_D			3500	mW	
Supply Current	I_{cc}			1100	mA	
Transmitter						
Input differential impedance	Z_{in}		100		Ω	
Differential data input swing	$V_{in,pp}$	180		900	mV	
Receiver						
Output Differential Impedance			100		Ω	
Differential Data Output Swing	$V_{out,pp}$	300		850	mVp-p	1

Notes:

1. Internally AC coupled, but requires an external 100 Ω differential load termination.

V. Ordering Information

Pivotal Part Number	Description
QSFP-IR4-P-40GD	QSFP+, 1310nm, PSM IR4 SMF 2km, 40G 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.