

DSF-40G-SR

40Gbps 100M QSFP+

Transceiver



Product Features

- Supports 10.5Gb/s bit rates per Channel
 - Four-Channel, 1x12MPO receptacle
 - Hot pluggable QSFP+ form factor
 - VCSEL 850nm array Technology
 - Applicable for 100m & 300m on OM3 MMF
150m & 400m OM4 MMF
- Built-in diagnostic functions
 - Low power consumption, < 1.5W
 - Unretimed XLPPI electrical interface
 - Operating case temperature : -5 to 80°C

Applications

- 40GBase-SR 40G Ethernet
 - Datacom / Telecom switch & router connections
 - Data Aggregation and Density Applications
- Proprietary Protocol and Density Applications
 - Transmission at 4CH SDR, DDR, and QDR
 - Other optical links

General Operating Characteristics

Parameter	Value	Unit
Module Form Factor	QSFP+	
Number of Lanes	4 Tx and 4 Rx	
Maximum Aggregate Data Rate	42.0	Gb/s
Maximum Data Rata per Lane	10.5	Gb/s
Protocols Supported	Typical applications include 40G Ethernet, Infiniband, Fiber Channel, SATA/SAS3	
Electrical Interface and Pin-out	38-pin edge connector, Pin-out as defined by the QSFP+ MSA	
Management Interface	Serial, I2C-based, 400kHz maximum frequency	

General Operating Characteristics

Parameter	Symbol	Min.	Typ	Max.	Unit
Bit Rate per Lane	BR	1062		10500	Mb/sec
Bit Error Ratio	BER			10-12	
Distance on OM3 MMF(CDS1)	D ₁			100	Meters
Distance on OM4 MMF(CDS1)	D ₂			150	Meters

Optical Characteristics(Transmitter)

Parameter	Symbol	Min.	Typ	Max.	Unit
Operating Wavelength	λ	840	850	860	nm
Ave. output Power (Enabled)	P _{AVE}	-7.5		2.5	dBm
Extinction Ratio	E _R	3			dB
Peak power, each lane	P _P			4	dBm
Dispersion penalty, each lane	T _{DP}			3.5	dB
Average launch power of OFF transmitter, each lane	P _{OFF}			-30	dB
Eye Mask coordinates : X1, X2, X3, Y1, Y2, Y3	SPECIFICATION VALUES 0.23, 0.34, 0.43, 0.27, 0.35, 0.4				

Optical Characteristics(Receiver)

Parameter	Symbol	Min.	Typ	Max.	Unit
Operating Wavelength	λ	840	850	860	nm
Stress receiver sensitivity in OMA	P _{SEN1}			-5.4	dBm
Average Receive Power, each lane	P _{AVE}	-11		2.4	dBm
Receiver Reflectance	R _{rx}			-12	dB
LOS Assert	Pa	-30			dBm
LOS De-assert	Pd			-9	dBm
LOS Hysteresis	Pd-Pa	0.5			dB

Pin Definition And Functions

38	GND	
37	TX1n	
36	TX1p	
35	GND	
34	TX3n	
33	TX3p	
32	GND	
31	LPMode	
30	Vcc1	
29	VccTx	
28	IntL	
27	ModPrsL	
26	GND	
25	RX4p	
24	RX4n	
23	GND	
22	RX2p	
21	RX2n	
20	GND	

Top side

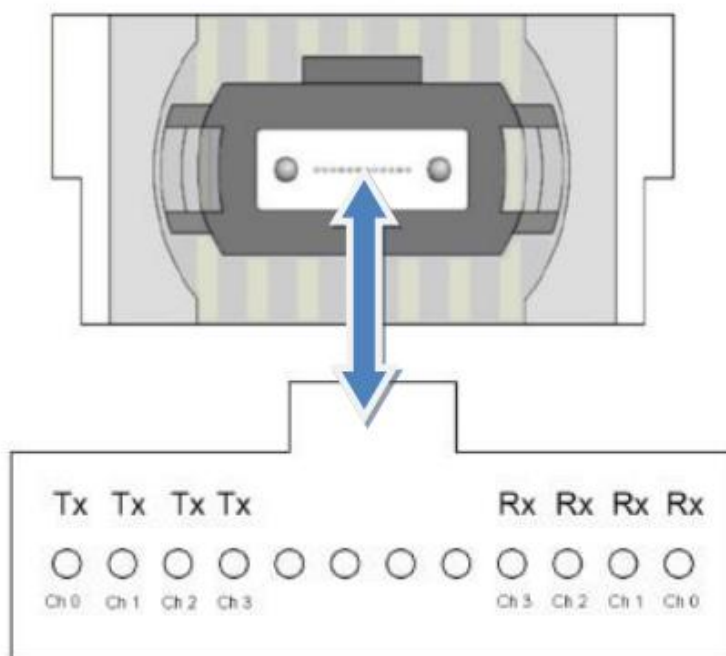
	GND	1
	TX2n	2
	TX2p	3
	GND	4
	TX4n	5
	TX4p	6
	GND	7
	ModSelL	8
	ResetL	9
	VccRx	10
	SCL	11
	SDA	12
	GND	13
	RX3p	14
	RX3n	15
	GND	16
	RX1p	17
	RX1n	18
	GND	19

Bottom side

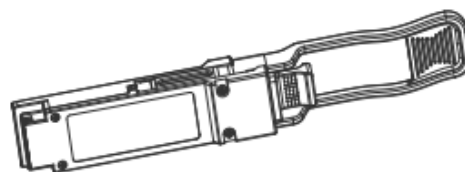
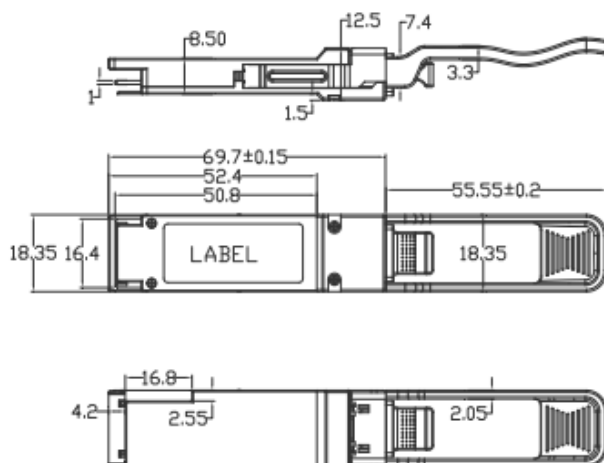
Pin	Symbol	Name / Description
1	GND	Ground
2	Tx2n	Transmitter Inverted Data Input
3	Tx2p	Transmitter Non-Inverted Data Input
4	GND	Ground
5	Tx4n	Transmitter Inverted Data Input
6	Tx4p	Transmitter Non-Inverted Data Input
7	GND	Ground
8	ModSelL	Module Select
9	ResetL	Module Reset
10	Vcc Rx	+3.3V Power supply receiver
11	SCL	2-wire serial interface clock
12	SDA	2-wire serial interface data
13	GND	Ground
14	Rx3p	Receiver Non-Inverted Data Output
15	Rx3n	Receiver Inverted Data Output
16	GND	Ground
17	Rx1n	Receiver Non-Inverted Data Output
18	Rx1n	Receiver Inverted Data Output
19/20	GND	Ground
21	Rx2n	Receiver Inverted Data Output
22	Rx2p	Receiver
23	GND	Ground
24	Rx4n	Receiver Inverted Data Output
25	Rx4p	Receiver Non-Inverted Data Output
26	GND	Ground
27	ModPrsL	Module Present
28	IntL	Interrupt
29	Vcc Tx	+3.3 V Power supply transmitter
30	Vcc1	+3.3 V Power Supply

Pin	Symbol	Name / Description
31	LPMODE	Low Power Mode
32	GND	Ground
33	Tx3p	Transmitter Non-Inverted Data Input
34	Tx3n	Transmitter Inverted Data Input
35	GND	Ground
36	Tx1p	Transmitter Non-Inverted Data Input
37	Tx1n	Transmitter Inverted Data Input
38	GND	Ground

Optical lane assignment(front view of MPO receptacle)



Package Dimensions



Dimensions are in Millimeter

Tolerance without indication is $\pm 0.1\text{mm}$