



Features

- Compliant with QSFP+ MSA
- Up to 10.3125Gbps data rate per channel
- 4 independent channels
- Operating Temperature range from 0°C to 70°C
- Single 3.3V power supply
- RoHS compliant

Applications

- 40G Ethernet
- Infiniband SDR/DDR/QDR
- Data center & Networking testing

Recommended Operating Conditions

Parameter	Symbol	Min.	Max.	Units	Note
Storage Temperature	Tstg	-20	85	°C	
Supply Voltage	V _{cc}		3.3	V	Vcc-ground

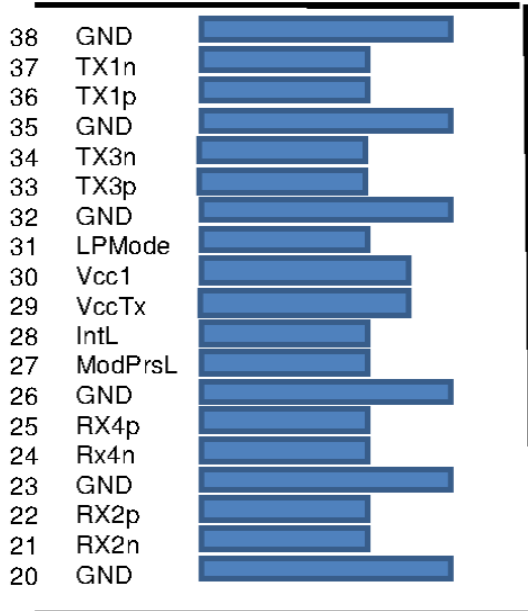
Module Specifications - Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Units	Note
Ambient Operating Temperature	T _a	0		70	°C	
Supply Voltage	V _{cc}	3.13	3.3	3.47	Vdc	
Number of Lanes	4 channels					
Date Rate(channel)			10.3125		Gbps	

High Speed Characteristics

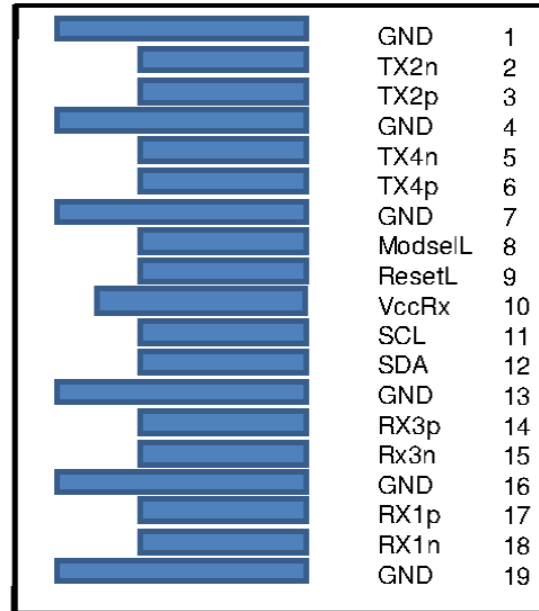
Parameter	Symbol	Min	Type	Max	Units	Notes
Differential Impedance	Zd	90	100	110	Ω	
Differential Input/ Output Return Loss	SDD11	$<12+2* \text{SQRT}(f)$ wit f in GHz			dB	0.01~4.1GHz
	SDD22	$<-6.3+13* \text{Log}_{10}(f/5.5)$ with f in GHz			dB	4.1~11.1GHz
Insertion Loss	SDD21			5	dB	5GHz
Intra pair Skew				10	ps	

Pin Assignment



**Top Side
Viewed From Top**

Module Card Edge



**Bottom Side
Viewed From Bottom**

Pin Descriptions

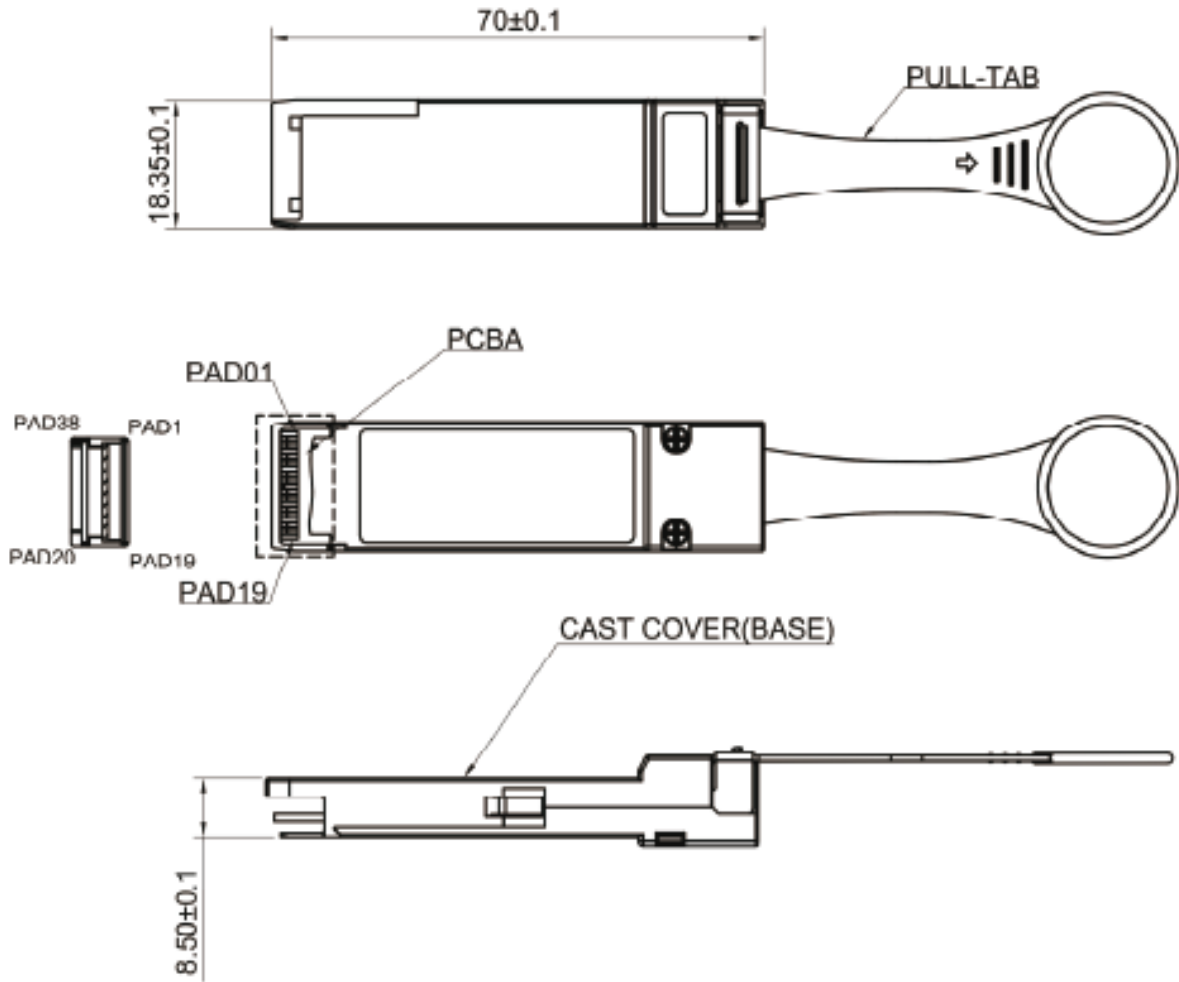
Pin	Logic	Symbol	Description	Plug Sequence	Note
1		GND	Ground	1	1
2	CML-I	Tx2n	Transmitter Inverted Data Input	3	
3	CML-I	Tx2p	Transmitter Non-inverted Data Input	3	
4		GND	Ground	1	1
5	CML-I	Tx4n	Transmitter Inverted Data Input	3	
6	CML-I	Tx4p	Transmitter Non-inverted Data Input	3	
7		GND	Ground	1	1
8	LVTTL-I	ModSelL	Module Select	3	
9	LVTTL-I	ResetL	Module Reset	3	
10		VccRx	+3.3V Power Supply Receiver	2	
11	LVC MOS-I/O	SCL	2-Wire Serial Interface Clock	3	2
12	LVC MOS-I/O	SDA	2-Wire Serial Interface Data	3	2
13		GND	Ground	1	1
14	CML-O	Rx3p	Receiver Non-Inverted Data Output	3	
15	CML-O	Rx3n	Receiver Inverted Data Output	3	
16		GND	Ground	1	1
17	CML-O	Rx1p	Receiver Non-Inverted Data Output	3	
18	CML-O	Rx1n	Receiver Inverted Data Output	3	
19		GND	Ground	1	1
20		GND	Ground	1	1
21	CML-O	Rx2n	Receiver Inverted Data Output	3	
22	CML-O	Rx2p	Receiver Non-Inverted Data Output	3	
23		GND	Ground	1	1
24	CML-O	Rx4n	Receiver Inverted Data Output	3	
25	CML-O	Rx4p	Receiver Non-Inverted Data Output	3	
26		GND	Ground	1	1
27	LVTTL-O	ModPrsL	Module Present	3	2
28	LVTTL-O	IntL	Interrupt	3	2
29		VccTx	+3.3V Power Supply Transmitter	2	
30		Vcc1	+3.3V Power Supply	2	

31	LVTTTL-1	LPMode	Low Power Mode	3	
32		GND	Ground	1	1
33	CML-I	Tx3p	Transmitter Non-Inverted Data Input	3	
34	CML-I	Tx3n	Transmitter Inverted Data Input	3	
35		GND	Ground	1	1
36	CML-I	Tx1p	Transmitter Non-Inverted Data Input	3	
37	CML-I	Tx1n	Transmitter Inverted Data Input	3	
38		GND	Ground	1	1

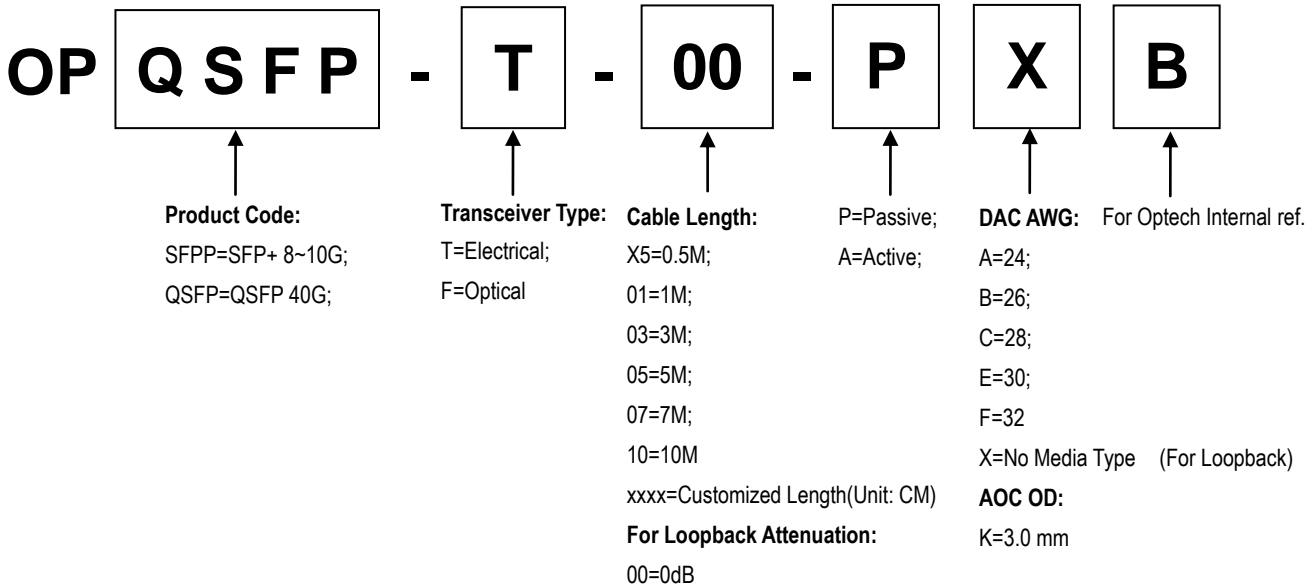
Notes:

1. GND is the symbol for signal and supply (power) common for QSFP modules. All are common within the QSFP module and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal common ground plane.
2. VccRx, Vcc1 and VccTx are the receiver and transmitter power suppliers and shall be applied concurrently. Recommended host board power supply filtering is shown below. Vcc Rx, Vcc1 and VccTx may be internally connected within the QSFP transceiver module in any combination. The connector pins are each rated for a maximum current of 500mA.

Dimensions



Ordering Information



Note: All information contained in this document is subject to change without notice.