



40G QSFP+ to QSFP+ Passive Direct Attach Cable (DAC) Hot Pluggable, Twinax Copper Cable, 1M~5M

Part number: FDAC-40G-QPQP-Pxx-yy



Overview:

FDAC-40G-QPQP-xxx-yy QSFP+ to QSFP+ Twinax copper Direct attach cables (DAC) are high performance, cost Effective I/O solutions for 40Gb Ethernet applications. The QSFP+ DAC are suitable for very short distances and offer a cost-effective way to connect within racks and across adjacent racks. It offers passive copper cables in lengths of 1 meter ~ 5 meters

Applications:

- 40GBase Ethernet Application
- Infiniband QDR Applications
- Data center cabling infrastructure
- High capacity I/O in Storage Area Networks, Network Attached Storage, and Storage Servers
- Switched fabric I/O such as ultra high bandwidth switches and routers

Features:

- Compliant with QSFP+ MSA SFF-8436
- Fully compatible with IEEE802.3ba and Infiniband QDR specification
- 4 independent duplex channels and operating data rate up to 10.5Gbps per channel
- Hot Pluggable
- I/O Connector designed for high speed differential signal applications
- Low Near-End crosstalk
- Precision process control for minimization of pair-to-pair skew
- 2-wire I2C interface for management
- Single +3.3V power supply
- All-metal housing for superior EMI performance
- RoHS Compliant

Recommended Operating Conditions :

Parameters	Symbol	Min.	Max.	Unit
Storage Temperature	T _{ST}	-40	+85	°C
Case Operating Temperature	T _{OP}	0	+70	°C
Supply Voltage	V _{CC}	3.13	3.47	V
Storage Relative Humidity	RH	5	95	%



Product Specifications :

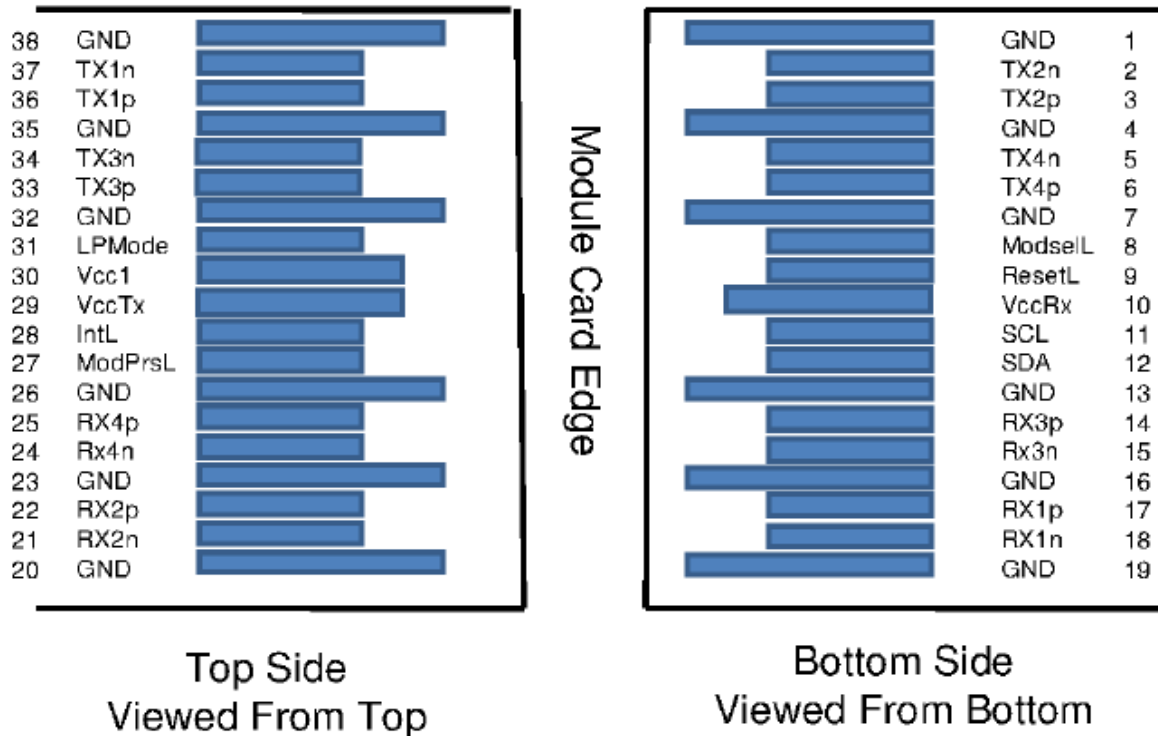
Parameters	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	V _{cc}	+3.13	+3.3	+3.47	V
Supply Current	I _{cc}			20	mA
Total Power Consumption	P _d			0.1	W
Data Rate (per lane)	DR1		10.3125	10.5	Gbps
Data Rate (Aggregated)	DR2		41.25	42.0	Gbps

Electrical Characteristics :

Parameters	Symbol	Min.	Typ.	Max.	Unit	Notes
Differential Impedance	Z _d	90	100	110	Ω	
Differential Input Return Loss	SDDXX	$< -12 + 2 * \text{SQRT}(f)$ with f in GHz			dB	0.01~4.1GHz
		$< -6.3 + 13 * \text{Log}10(f/5.5)$ with f in GHz				4.1~11.1GHz
Common mode Output Return Loss	SCCXX	$< -7 + 1.6 * f$ with f in GHz			dB	0.01~2.5GHz
				-3		2.5~11.1GHz
Difference Waveform Distortion Penalty	dWDPC			6.75	dB	
VMA Loss	L			4.4	dB	
VMA Loss to Crosstalk Ratio	VCR	32.5			dB	



40G QSFP+ Pin Assignment :



40G QSFP+ Pin Description :

Pin	Logic	Name	Function / Description
1		GND	Module Ground
2	CML-I	Tx2n	Transmitter Inverted Data Input
3	CML-I	Tx2p	Transmitter Non-Inverted Data Input
4		GND	Module Ground
5	CML-I	Tx4n	Transmitter Inverted Data Input
6	CML-I	Tx4p	Transmitter Non-Inverted Data Input
7		GND	Module Ground
8	LVTLL-I	ModSelL	Module Select
9	LVTLL-I	ResetL	Module Reset
10		VccRx	+3.3V Power Supply Receiver
11	LVTLL-I	SCL	2-Wire Serial Interface Clock

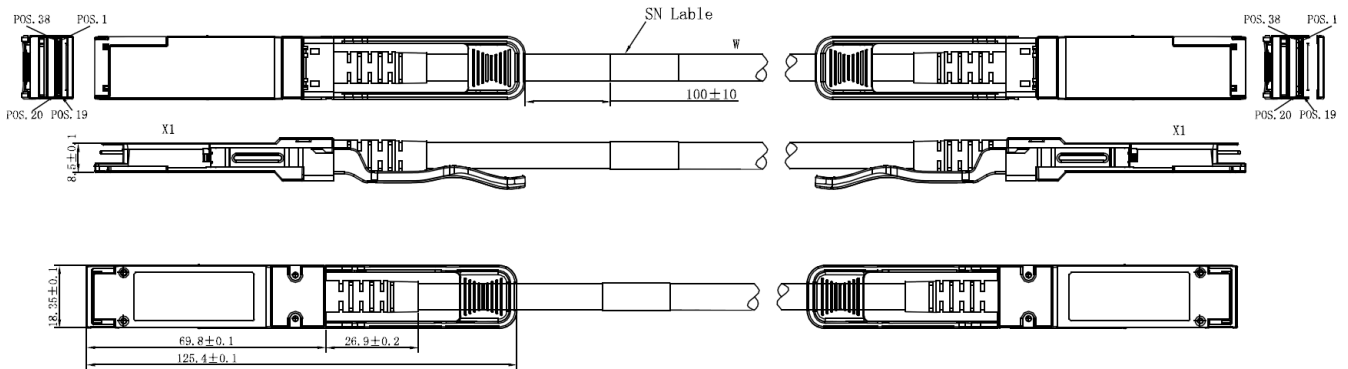


12	LVC MOS-I/O	SDA	2-Wire Serial Interface Data
13		GND	Module Ground
14	CML-O	Rx3p	Receiver Non-Inverted Data Output
15	CML-O	Rx3n	Receiver Inverted Data Output
16		GND	Module Ground
17	CML-O	Rx1p	Receiver Non-Inverted Data Output
18	CML-O	Rx1n	Receiver Inverted Data Output
19		GND	Module Ground
20		GND	Module Ground
21	CML-O	Rx2p	Receiver Non-Inverted Data Output
22	CML-O	Rx2n	Receiver Inverted Data Output
23		GND	Module Ground
24	CML-O	Rx4p	Receiver Non-Inverted Data Output
25	CML-O	Rx4n	Receiver Inverted Data Output
26		GND	Module Ground
27	LVTLL-O	ModPrsL	Module Present
28	LVTLL-O	IntL	Interrupt
29		VccTx	+3.3V Power Supply Transmitter
30		Vcc1	+3.3V Power Supply
31	LVTLL-I	LPMODE	Low Power Mode
32		GND	Module Ground
33	CML-I	Tx3n	Transmitter Inverted Data Input
34	CML-I	Tx3p	Transmitter Non-Inverted Data Input
35		GND	Module Ground
36	CML-I	Tx1n	Transmitter Inverted Data Input
37	CML-I	Tx1p	Transmitter Non-Inverted Data Input
38		GND	Module Ground

Note1: 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 lane.



Mechanical Dimensions :



(All Dimensions are $\pm 0.20\text{mm}$ Unless Otherwise Specified, Unit: mm)

Ordering Information :

Part No.	Product Description	Length Tolerance
FDAC-40G-QPQP-P01-30	40GBase-CR4 to 40GBase-CR4, Copper Cable, 30AWG, 1.0m, passive	± 25 mm
FDAC-40G-QPQP-P02-30	40GBase-CR4 to 40GBase-CR4, Copper Cable, 30AWG, 2.0m, passive	± 35 mm
FDAC-40G-QPQP-P03-30	40GBase-CR4 to 40GBase-CR4, Copper Cable, 30AWG, 3.0m, passive	± 45 mm
FDAC-40G-QPQP-P03-26	40GBase-CR4 to 40GBase-CR4, Copper Cable, 26AWG, 3.0m, passive	± 45 mm
FDAC-40G-QPQP-P04-26	40GBase-CR4 to 40GBase-CR4, Copper Cable, 26AWG, 4.0m, passive	± 50 mm
FDAC-40G-QPQP-P05-26	40GBase-CR4 to 40GBase-CR4, Copper Cable, 26AWG, 5.0m, passive	± 65 mm