Rev.02H2.70_20190708

100G QSFP28 to 4x25G SFP28 Direct Attach Cable (DAC)
Hot Pluggable, Twinax Copper Cable, 1~5M

Part number: FDAC-A0G-QPSP-xxx-yy

Overview:

FDAC-A0G-QPSP-xxx-yy QSFP28 to 4 x SFP28 Twinax Copper Direct Attach Cables (DAC) are high performance, cost Effective I/O solutions for 100Gb Ethernet applications. The QSFP28 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:

- Switches servers and routers
- Data Center Networking
- Network Storage Systems
- High performance computing
- Telecommunication and wireless infrastructure

Features:

- Compliant to SFF-8665 QSFP28
- Compliant to SFF8402 SFP28
- 100GBASE-CR4 Ethernet (IEEE 802.3bj)
- 25G Ethernet (IEEE 802.3by)
- InfiniBand EDR
- Maximum aggregate data rate 100G (4x25 Gb/s), and 25G
- Hot Pluggable
- Single 3.3V power supply
- RoHS compliant

Absolute Maximum Ratings :

Parameters	Symbol	Min.	Max.	Unit
Storage Temperature	T_{ST}	-40	+85	°C
Case Operating Temperature	T_{OP}	0	70	°C
Supply Voltage	V_{cc3}	3.13	3.47	V
Storage Relative Humidity	RH	5	95	%

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Product Specifications :

Parameters	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	V_{cc}	+3.13	+3.3	+3.47	V
Supply Current (QSFP28)	I_{cc}			20	mA
Supply Current (SFP28)	I_{cc}			10	mA
Total Power Consumption	Pd			0.1	W
Operating Date Rate (per channel)	DR1		25		Gb/s
Data Rate (Aggregated)	DR2		100		Gb/s

Electrical Characteristics :

Parameters	Symbol	Min.	Typ.	Max.	Unit	Notes
Differential Impedance	Zd	90	100	110	Ω	
Differential Input Return Loss	SDDXX	<16.5 - 2 × SQRT(f), with f in GHz			dB	0.01~4.1GHz
		<-10.66 - 14 × log10(f/5.5), with f in GHz				4.1~19GHz
Common mode Output Return Loss	SCCXX				dB	0.2~19GHz
		2				
Differential to common Mode Conversion Loss	SCD21-IL	6.3			dB	15.7 to 19 GHz
Channel Operating Margin	COM	3			dB	

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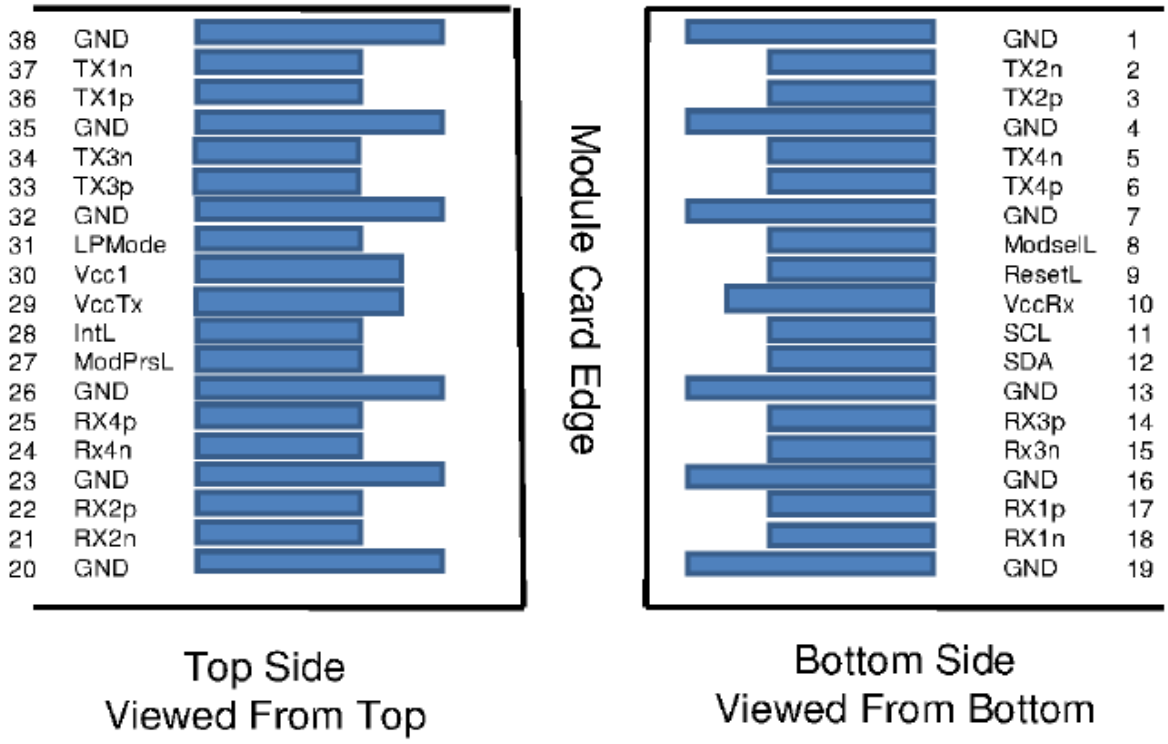
100G QSFP28 Pin Assignment :



100G QSFP28 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	LVCMOS-I/O	SCL	2-Wire Serial Interface Clock
12	LVCMOS-I/O	SDA	2-Wire Serial Interface Data

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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

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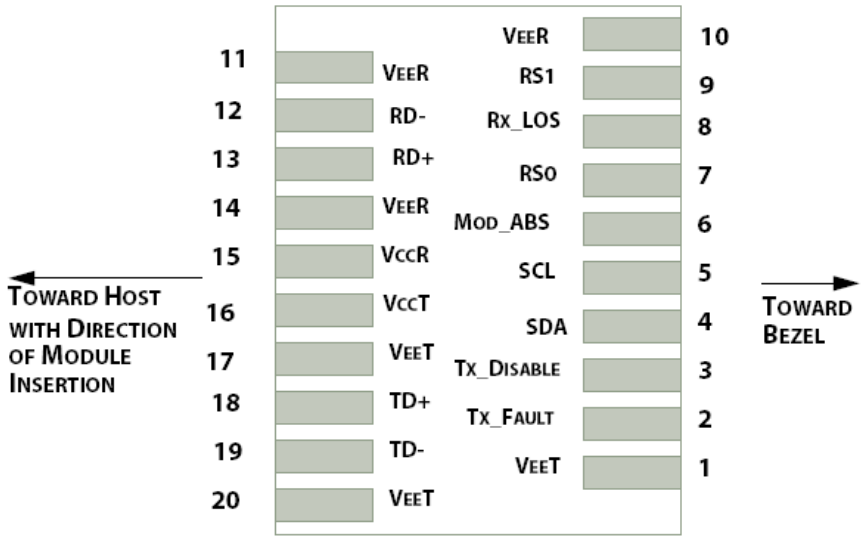
25G SFP28 Pin Assignment :



25G SFP28 Pin Description :

Pin	Name	Function / Description
1	VeeT	Transmitter Ground
2	TX_Fault	Transmitter Fault Indication, No function implemented (1)
3	TX_Disable	Transmitter Disable (2)
4	SDA	2-wire Serial Interface Data Line (SDA: Serial Data Signal)
5	SCL	2-wire Serial Interface Clock (SCL: Serial Clock Signal)
6	Mod_ABS	Module Absent, connected to VeeT or VeeR in the module
7	RS0	Rate Select 0, No connection required (3)
8	Rx_LOS	Receiver Loss of Signal Indication (2)
9	RS1	Rate Select 1, No connection required (3)
10	VeeR	Receiver Ground
11	VeeR	Receiver Ground
12	RD-	Receiver Inverted Data output, AC coupled
13	RD+	Receiver Non-Inverted Data output, AC coupled
14	VeeR	Receiver Ground
15	VccR	Receiver 3.3V Power Supply

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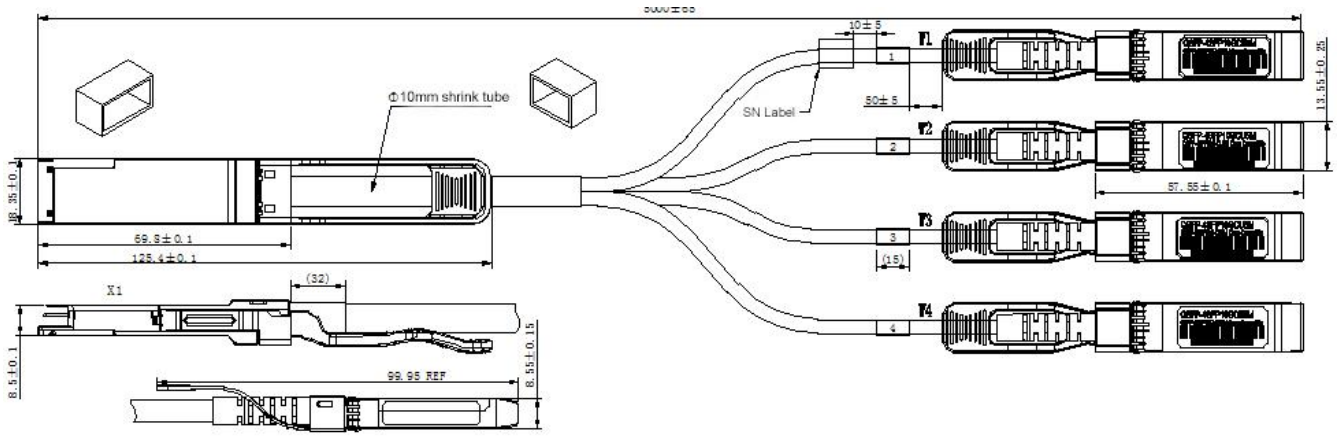
16	VccT	Transmitter 3.3V Power Supply
17	VeeT	Transmitter Ground
18	TD+	Transmitter Non-Inverted Data Input, AC coupled
19	TD-	Transmitter Inverted Data Input, AC coupled
20	VeeT	Transmitter Ground

Note1: Signal not supported in SFP+ DAC module, pulled-down to VeeT with 20K ohms resistor.
Note2: The passive DAC cable do not support Rx_LOS and TX_Disable functions.
Note3: No connect on this module.

Mechanical Dimensions :



(All Dimensions are ±0.20mm Unless Otherwise Specified, Unit: mm)

Ordering Information :

Part No.	Product Description	Length Tolerance
FDAC-A0G-QPSP-P01-30	100GBase-CR4 to 4x25GBase, Copper Cable, 30AWG, 1.0m, passive	± 25 mm
FDAC-A0G-QPSP-P02-30	100GBase-CR4 to 4x25GBase, Copper Cable, 30AWG, 2.0m, passive	± 35 mm
FDAC-A0G-QPSP-P03-30	100GBase-CR4 to 4x25GBase, Copper Cable, 30AWG, 3.0m, passive	± 45 mm
FDAC-A0G-QPSP-P03-26	100GBase-CR4 to 4x25GBase, Copper Cable, 26AWG, 3.0m, passive	± 45 mm
FDAC-A0G-QPSP-P04-26	100GBase-CR4 to 4x25GBase, Copper Cable, 26AWG, 4.0m, passive	± 50 mm
FDAC-A0G-QPSP-P05-26	100GBase-CR4 to 4x25GBase, Copper Cable, 26AWG, 5.0m, passive	± 65 mm

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