



25G SFP28 Direct Attach Cable (DAC) Hot Pluggable, Twinax Copper Cables, 1~5M

Part number: FDAC-25G-SPSP-xxx-yy



Overview:

FDAC-25G-SPSP-xxx-yy SFP+ Twinax Copper Direct Attach Cables (DAC) are high performance, cost effective I/O solutions for 25Gb Ethernet application. The SFP28 DAC are suitable for very short distances and offer a cost effective way to connect within racks and across adjacent racks. It also allow hardware manufactures to achieve high port density, configurability and utilization at a very low cost and reduced power budget. It offers passive copper cables in lengths of 1 meter~ 5 meters.

Applications:

- 25GBase Ethernet Application
- 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 to SFP28 MSA SFF-8402 standard
- Compliant to IPF (Improved Pluggable Form factor) SFF-8432 standard
- Hot Pluggable
- Support multi-gigabit data rates up to 25.8Gbps
- Support 10G (10.3125Gbps) and 25G (25.78125Gbps) Ethernet data rate
- Support 1x, 2x, 4x and 8x Fiber Channel data rates (1.0625Gbps to 8.5Gbps)
- I/O Connector designed for high speed differential signal applications
- 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
Power Dissipation	PD		0.1	W
Storage Relative Humidity	RH	5	95	%



Product Specifications :

Parameters	Symbol	Min.	Typ.	Max.	Unit	Note
Supply Voltage	V_{cc}	+3.13	+3.3	+3.47	V	
Supply Current	I_{cc}			20	mA	
Protocols Supported	1 GbE, 1/2/4/8G FC, 10GbE, 25GbE,					
Data Rate (per lane)	DR	1.0625		25.78125	Gbps	
Insertion Loss	SDD21	8		22.48	dB	@12.8906GHz
Differential Return Loss	SDD11	12.45		Note1	dB	@0.05~4.1GHz
	SDD22	3.12		Note2	dB	@4.1~19GHz
Common-mode to Common-mode Output Return Loss	SCC11	2			dB	@0.2~19GHz
	SCC22					
Differential to Common mode	SCD11	12		Note3	dB	@0.01~12.89GHz
Return Loss	SCD22	10.58		Note4	dB	@12.89~19GHz
Differential to Common mode Conversion Loss	SCD21-IL	10			dB	@0.01~12.89GHz
				Note5		@12.89~15.7GHz
		6.3				@15.7~19GHz
Channel Operating Margin	COM	3			dB	
Impedance	Z_{IN}	90	100	110	Ohm	

Note1: Reflection Coefficient given by equation $SDD11(dB) < 16.5 - 2 \times \text{SQRT}(f)$, with f in GHz

Note2: Reflection Coefficient given by equation $SDD11(dB) < 10.66 - 14 \times \log_{10}(f/5.5)$, with f in GHz

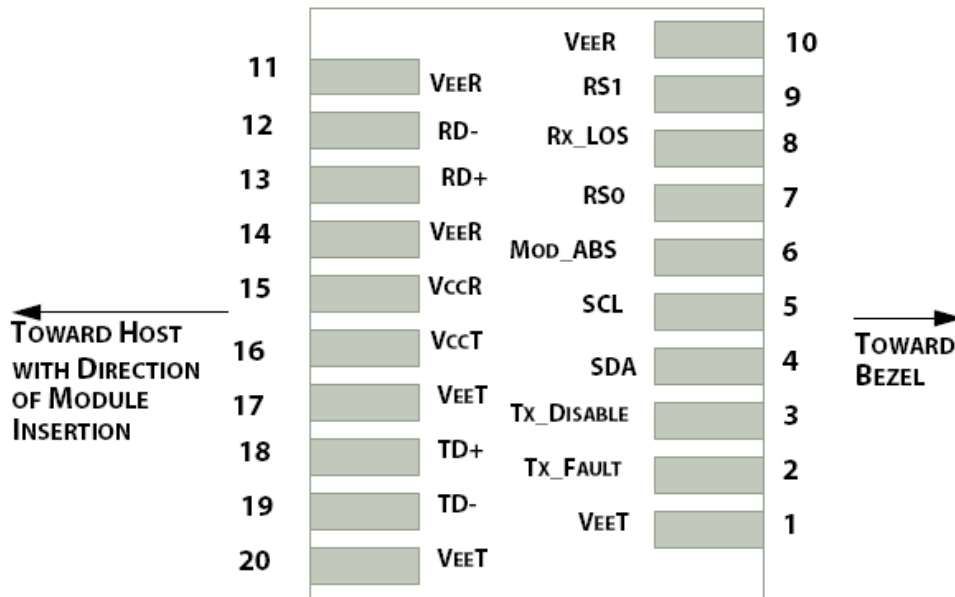
Note3: Reflection Coefficient given by equation $SCD11(dB) < 22 - (20/25.78)*f$, with f in GHz

Note4: Reflection Coefficient given by equation $SCD11(dB) < 15 - (6/25.78)*f$, with f in GHz

Note5: Reflection Coefficient given by equation $SCD21(dB) < 27 - (29/22)*f$, with f in GHz



Pin Assignment :



Host PCB SFP28 pad assignment top view

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



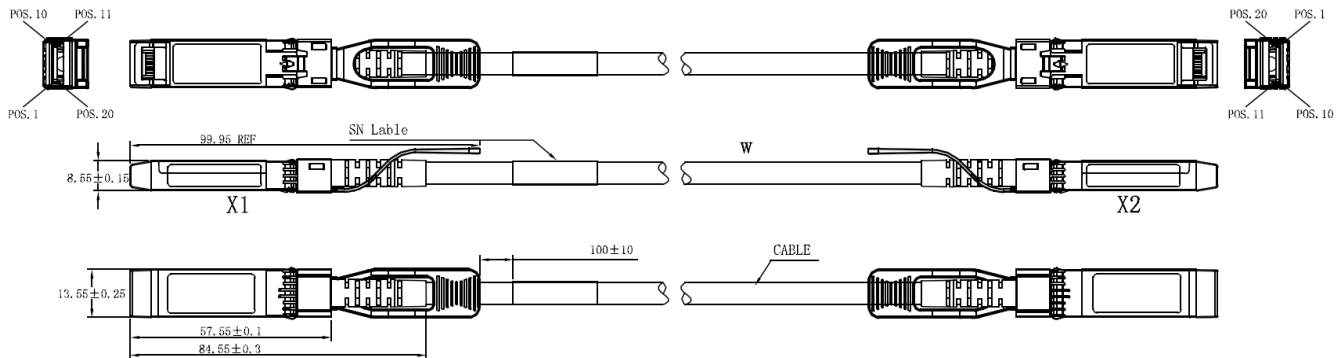
16	VccT	Transmitter 3.3V Power Supply
17	VeeT	Transmitter Ground
18	TD+	Transmitter Non-Inverted Data Input, AC coupled
19	TD-	Transmitter Inverted Data Input, AC coupled
20	VeeT	Transmitter Ground

Note1: Signal not supported in SFP28 DAC module, pulled-down to VeeT with 30K 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 ± 0.20 mm Unless Otherwise Specified, Unit: mm)

Ordering Information :

Part No.	Product Description	Length Tolerance
FDAC-25G-SPSP-P01-30	25GBase-CU, Twinax cable, 30AWG, 1.0m, passive	± 25 mm
FDAC-25G-SPSP-P02-30	25GBase-CU, Twinax cable, 30AWG, 2.0m, passive	± 35 mm
FDAC-25G-SPSP-P03-30	25GBase-CU, Twinax cable, 30AWG, 3.0m, passive	± 45 mm
FDAC-25G-SPSP-P03-26	25GBase-CU, Twinax cable, 26AWG, 3.0m, passive	± 45 mm
FDAC-25G-SPSP-P04-26	25GBase-CU, Twinax cable, 26AWG, 4.0m, passive	± 50 mm
FDAC-25G-SPSP-P05-26	25GBase-CU, Twinax cable, 26AWG, 5.0m, passive	± 65 mm