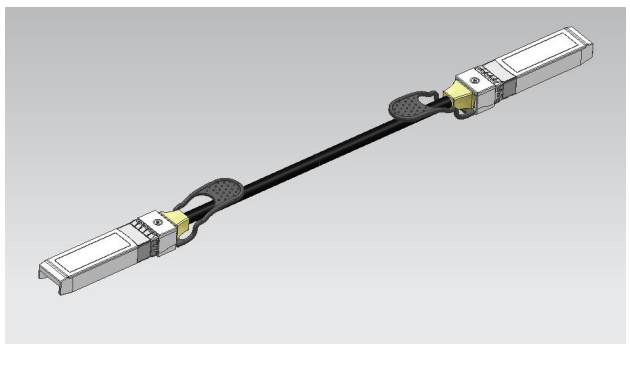
Immersion Liquid Cooling

25G SFP28 DAC

FSS-PC250-XXC

Features

- Up to 25.78125 Gbps data rate
- Up to 5 meter transmission
- Hot-pluggable SFP 20PIN footprint
- Improved Pluggable Form Factor(IPF) compliant for enhanced EMI/EMC performance
- Compatible to SFP28 MSA
- Compatible to SFF-8402 and SFF-8432
- Power consumption <0.1 W
- Temperature Range: 0~ 70 °C
- RoHS Compatible
- Special design for Liquid immersion



Applications

- 25GE Ethernet
- Liquid immersion environment

Product Description

SFP28 copper cables allow hardware manufactures to achieve high port density, configurability and utilization at a very low cost and reduced power budget.

The FIBERSTAMP Technologies FSS-PC250-XXC is a SFP28 DAC which specially reliable design to enable liquid immersion environment, it is filled with hot melt glue for a protective layer to prevent the liquid to contact the copper conductor, maintain the good signal integrity. Comparing with normal DAC, this product uses braided and shielding sleeve instead of traditional outer jacket, that can reduce the risk of cooling liquid dissolve the material of outer jacket to dirty the liquid cooling system.

Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Storage Ambient Temperature		-40		+85	°C
Operating Case Temperature	Tc	0		+70	°C
Power Supply Voltage	V_{CC3}	3.14	3.3	3.47	V
Power consumption				0.1	W
Data Rate Per Lane			25.78		Gb/s

High Speed Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Note
Differential Impedance(bulk cable)	Rin1,P-P	95	100	110	Ω	
Differential Impedance(cable termination)	Rin3,P-P	85	100	110	Ω	
Insertion loss	SDD21			22.48	dB	At 12.8906 GHz
Differential Return Loss	SDD11			See 1	dB	At 0.05 to 4.1 GHz
	SDD22			See 2	dB	At 4.1 to 19 GHz
Common-mode to common-mode output return loss	SCC11	2			dB	At 0.2 to 19 GHz
	SCC22					
Differential to common-mode return loss	SCD11			See 3	dB	At 0.01 to 12.89 GHz
	SCD22			See 4		At 12.89 to 19 GHz
Differential to common Mode Conversion Loss	SCD21			10	dB	At 0.01 to 12.89 GHz
				See 5		At 12.89 to 15.7 GHz
				6.3		At 15.7 to 19 GHz
Channel Operating Margin	COM	3			dB	

Notes:

1. Reflection Coefficient given by equation SDD11(dB) < 16.5 - 2 × SQRT(f), with f in GHz
2. Reflection Coefficient given by equation SDD11(dB) < 10.66 - 14 × log10(f/5.5), with f in GHz
3. Reflection Coefficient given by equation SCD11(dB) < 22 - (20/25.78)*f, with f in GHz
4. Reflection Coefficient given by equation SCD11(dB) < 15 - (6/25.78)*f, with f in GHz
5. Reflection Coefficient given by equation SCD21(dB) < 27 - (29/22)*f, with f in GHz
6. These parameter are guaranteed under normal environment ,different liquid have own loss factor and dielectric constant to contribute the variance.

Pin Descriptions

Pin	Logic	Symbol	Name/Description	Notes
1		VeeT	Transmitter Ground	
2	LV-TTL-O	TX_Fault	N/A	1
3	LV-TTL-I	TX_DIS	Transmitter Disable	2
4	LV-TTL-I/O	SDA	Tow Wire Serial Data	
5	LV-TTL-I	SCL	Tow Wire Serial Clock	
6		MOD_DEF0	Module present, connect to VeeT	
7	LV-TTL-I	RS0	N/A	1
8	LV-TTL-O	LOS	LOS of Signal	2
9	LV-TTL-I	RS1	N/A	1

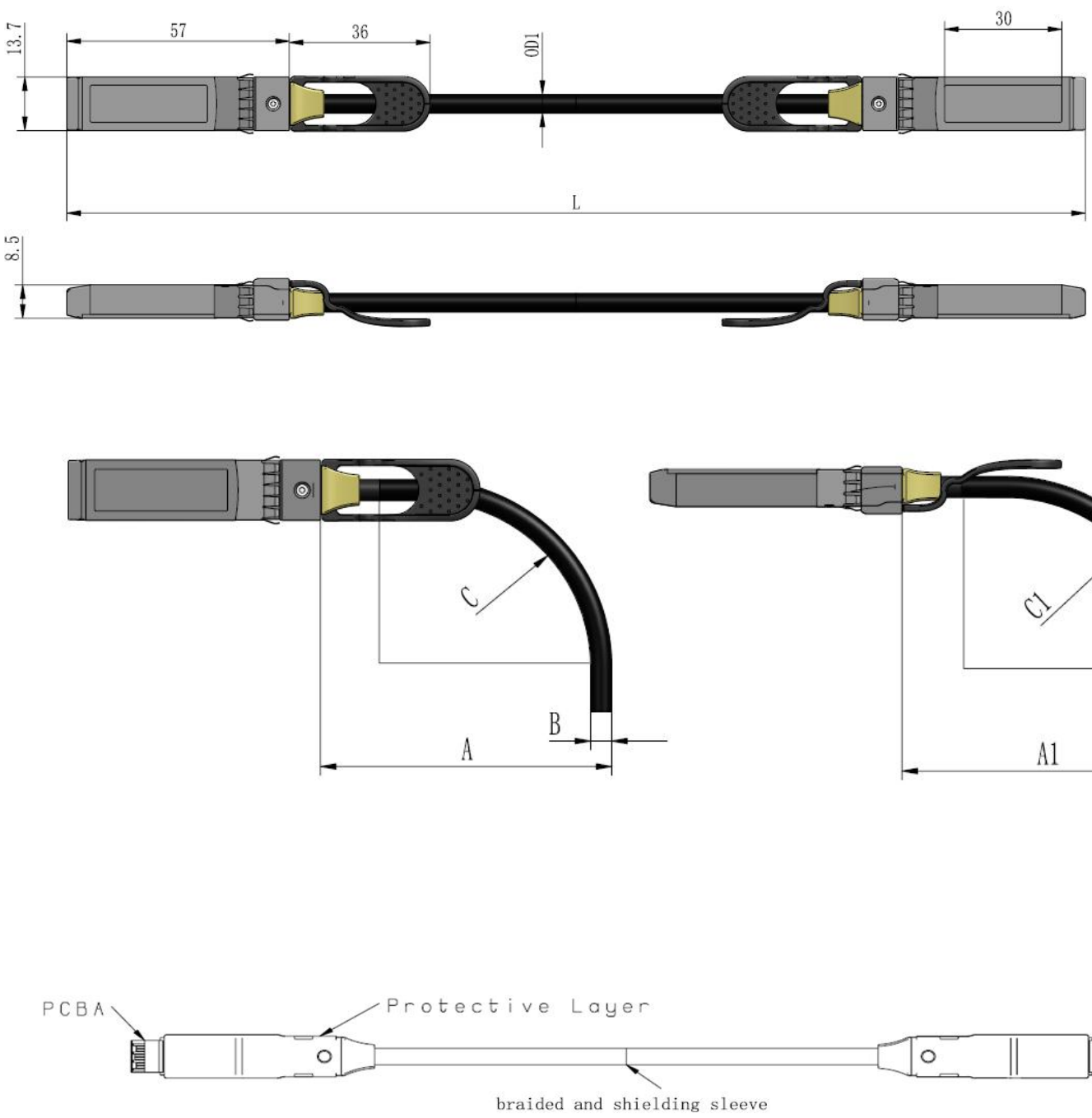
Pin	Logic	Symbol	Name/Description	Notes
10		VeeR	Reciever Ground	
11		VeeR	Reciever Ground	
12	CML-O	RD-	Reciever Data Inverted	
13	CML-O	RD+	Reciever Data Non-Inverted	
14		VeeR	Reciever Ground	
15		VccR	Reciever Supply 3.3V	
16		VccT	Transmitter Supply 3.3V	
17		VeeT	Transmitter Ground	
18	CML-I	TD+	Transmitter Data Non-Inverted	
19	CML_I	TD-	Transmitter Data Inverted	
20		VeeT	Transmitter Ground	

Note:

1. Signals not supported in SFP+ Copper pulled-down to VeeT with 30K ohms resistor

2. Passive cable assemblies do not support LOS and TX_DIS

Mechanical Dimensions



SFP Horizontal Direction			
CABLE GUAGE	DIAMETER"B"	MIN BEND RADIUS"C"	MIN BEND RADIUS"A"
26AWG	5.6MM	28MM	38MM

SFP Horizontal Direction			
CABLE GUAGE	DIAMETER"B1"	MIN BEND RADIUS"C1"	MIN BEND RADIUS"A1"
26AWG	5.6MM	28MM	38MM

Ordering information

Note: Diameter and distance can be customized.

Part Number	FSS-PC250-XXC				
Length (meter)	1	2	3	4	5
Wire gauge（AWG）	30	30	30/26	26	26

Example:

FSS-PC250-01C

FSS-PC250-03C

FSS-PC250-05C

Important Notice

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