25G SFP28 Direct Attach Passive Copper Cables

Product Description

The SFP28 direct attach passive copper cable assemblies are a high-performance and cost-effective I/O solution for 25G Ethernet applications. The SFP28 copper cables allow hardware manufactures to achieve high port density, configurability and utilization at a very low cost and reduced power budget. The high speed cable assemblies meet and exceed 25G Ethernet industry standard requirements for performance and reliability.

25G SFP28 DAC

Features

- Data rate up to 25.78125Gbps
- Length up to 5m
- 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
- Operating case temperature range 0°C to +70°C
- RoHS-6 compliant (lead free)

Application

- 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
- Data center cabling infrastructure
- High density connections between networking equipment

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	Vcc3	3.14	3.3	3.47	V
Power consumption				0.1	W
Data Rate Per Lane		1		25.78	Gb/s

High Speed Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Note
Differential Impedance	RIN,P-P	90		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		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
	SCD22			See		At 12.89 to 19 GHz
Differential to common Mode Conversion Loss	SCD21			10	dB	At 0.01 to 12.89
				See 5		At 12.89 to 15.7
				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

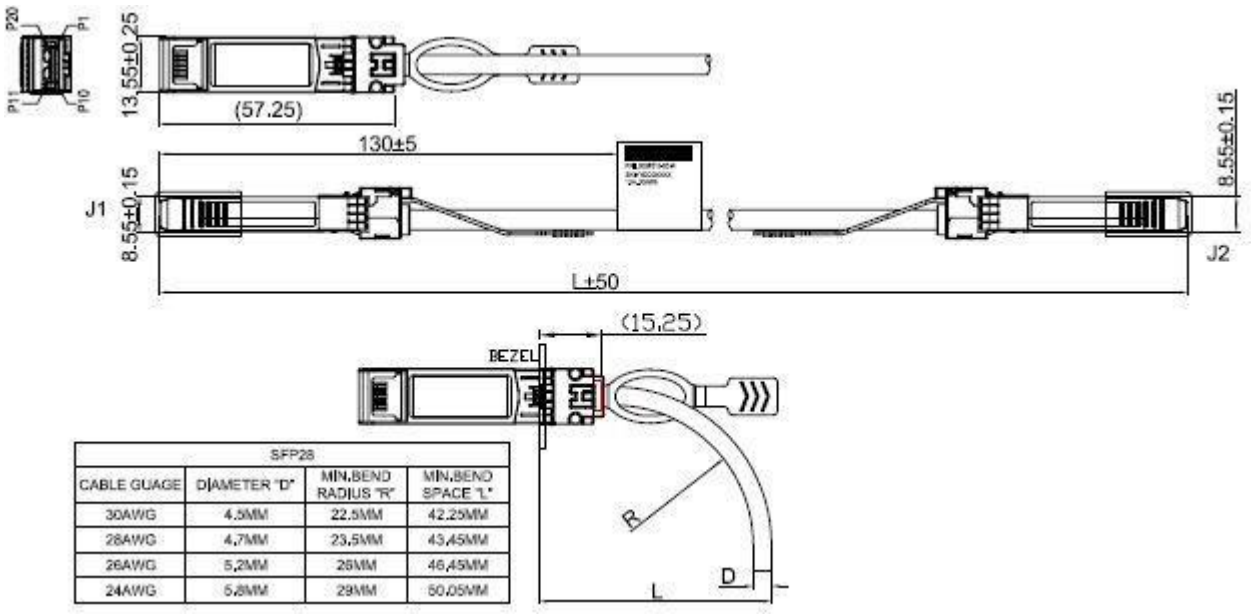
Pin Descriptions

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
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	

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



SFP28			
CABLE GUAGE	DIAMETER "D"	MIN.BEND RADIUS "R"	MIN.BEND SPACE "L"
30AWG	4.5MM	22.5MM	42.25MM
28AWG	4.7MM	23.5MM	43.45MM
26AWG	5.2MM	26MM	46.45MM
24AWG	5.8MM	29MM	50.05MM

Ordering information

Part Number	TK-PC250-xxxxC				
Length (meter)	1	2	3	4	5
American Wire Gauge (AWG)	30	30	26	26	26