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25G SFP28 Direct Attach Passive Copper Cable

Features

- Up to 25Gb/s data rate

- Single 3.3V supply voltage

- BER better than 10-15

- Hot pluggable

- Power consumption less than 0.1W

- Operating case temperature: 0~+70°C

Applications

- 25G Ethernet

- Data Center

Compliance

- Supports IEEE 802.3by

- RoHS compliance

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Description

The 25G SFP28 passive copper cable is a high speed, cost-effective 25Gbp/s Ethernet connectivity solution designed to meet the growing needs for higher bandwidth in data centers.

The 25G SFP28 passive copper cable contains a single high-speed copper pair, operating at data rates of up to 25Gb/s.The cables are compliant with IEEE 802.3by Ethernet standard and SFF-8402 SFP28 standard. Each SFP28 connector comprises an EEPROM providing product information which can be read by the host system.

Product Specifications

Table1- Product Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit
Storage	TS	-40		+85	℃
Operating Case	Tc	0		70	℃
Power Supply	VCC3	3.14	3.3	3.47	V

Product Specifications

Table2- Product Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Characteristic Impedance		90	100	110	Ω	
Time Delay				4.5	ns/m	
Differential Return Loss	SDD11	12.45		See 1	dB	At 0.05 to 4.1 GHz
	SDD22	3.12		See 2	dB	At 4.1 to 19 GHz
Differential to	SCD11	12		See 3	dB	At 0.01 to 12.89 GHz
return loss	SCD22	10.58		See 4	dB	At 12.89 to 19 GHz

High Speed Characteristics

Table3-High Speed Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Differential Impedance	RIN,P-P	90	100	110	Ω	
Insertion loss	SDD21	8		22.48	dB	At 12.8906 GHz

Differential Input Return Loss	SDD11	12.45		See1	dB	At 0.05 to 4.1 GHz
	SDD22	3.12		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	12		See3	dB	At 0.01 to 12.89 GHz
	SCD22	10.58		See4		At 12.89 to 19 GHz
Differential to common Mode Conversion Loss	SCD21-IL	10		See5	dB	At 0.01 to 12.89 GHz
						At 12.89 to 15.7 GHz
		6.3				At 15.7 to 19 GHz
Channel Operating Margin	COM	3			dB	

Notes:

Reflection Coefficient given by equation SDD11(dB) ← 16.5 - 2 × SQRT(f), with f in GHz

Reflection Coefficient given by equation SDD11(dB) ← 10.66 - 14 × log10(f/5.5), with f in GHz

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

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

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

Pin Descriptions

Pin	Logic	Symbol	Description	Notes
Table4-SFP28 Pin Function Definition				
1		VeeT	Transmitter Ground	
2	LVTTL-O	Tx_Fault	N/A	1
3	LVTTL-I	Tx_Disable	Transmitter Disable	2
4	LVTTL-I/O	SDA	Tow Wire Serial Data	
5	LVTTL-I/O	SCL	Tow Wire Serial Clock	
6		Mod_ABS	Module present, connect to VeeT	
7	LVTTL-I	RS0	N/A	1
8	LVTTL-O	Rx_LOS	LOS of Signal	2
9	LVTTL-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		VeeT	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	
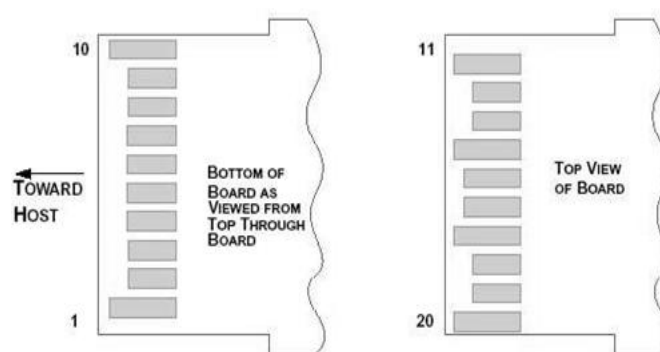
Mechanical Specifications
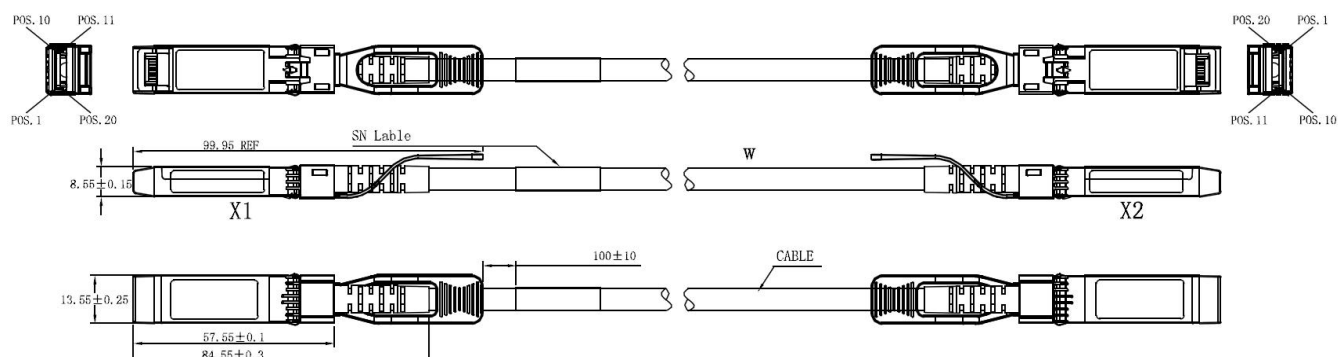
Length (m)	Cable AWG
1	30
2	30
3	30/26
4	26
5	26

Regulatory Compliance

Feature	Test Method	Performance
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883C Method 3015.7	Class 1(→2000 Volts)
Electromagnetic Interference(EMI)	FCC Class B	Compliant with Standards
	CENELEC EN55022 Class B	
	CISPR22 ITE Class B	
RF Immunity(RFI)	IEC61000-4-3	Typically Show no Measurable Effect from a 10V/m Field Swept from 80 to 1000MHz
RoHS Compliance	RoHS Directive 2011/65/EU and it's Amendment Directives 6/6	RoHS 6/6 compliant