25G SFP28 Direct Attach Cable (DAC)

Datasheet

General Description

SFP28 Direct Attach Cables are compliant with SFF-8432 and SFF-8402 specifications. Various choices of wire gauge are available from 30 to 26 AWG with various choices of cable length (up to 5m).

Features

- Up to 25.88243 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
- Temperature Range: 0~ 70 °C
- RoHS Compatible

Benefits

ÅCost-effective copper solution
ÅLowest total system power solution
ÅLowest total system EMI solution
ÅOptimized design for Signal Integrity

Applications

Å25G Ethernet

Product Description

ÅThe SFP28 passive cable assemblies are high performance, cost effective I/O solutions for 25G Ethernet. SFP28 copper cables allow hardware manufactures to achieve high port density, configurability and utilization at a very low cast and reduced power budget

High Speed Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Note
Differential Impedance	$R_{IN,P-P}$	90	100	110	Ω	
Insertion loss	*SDD21*	8		22.48	dB	At 12.8906 GHz
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
Common-mode to common-mode output return loss	*SCC11* *SCC22*	2			dB	At 0.2 to 19 GHz
Differential to common-mode return loss	*SCD11*	12		See 3	dB	At 0.01 to 12.89 GHz
	SCD22	10.58		See 4		At 12.89 to 19 GHz
Differential to common Mode Conversion Loss	*SCD21-IL*	10		See 5	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	

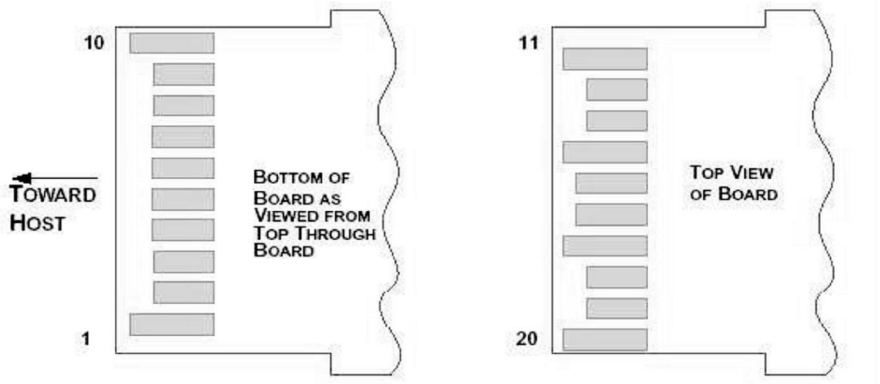
Notes:
1. Reflection Coefficient given by equation SDD11(dB) < 16.5 - 2 × SQRT(f), with f in GHz
2. Reflection Coefficient given by equation SDD11(dB) < 10.66 - 14 × log10(f/5.5), with f in GHz
3. Reflection Coefficient given by equation SCD11(dB) < 22 - (20/25.78)*f, with f in GHz
4. Reflection Coefficient 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

SFP28 Pin Function Definition

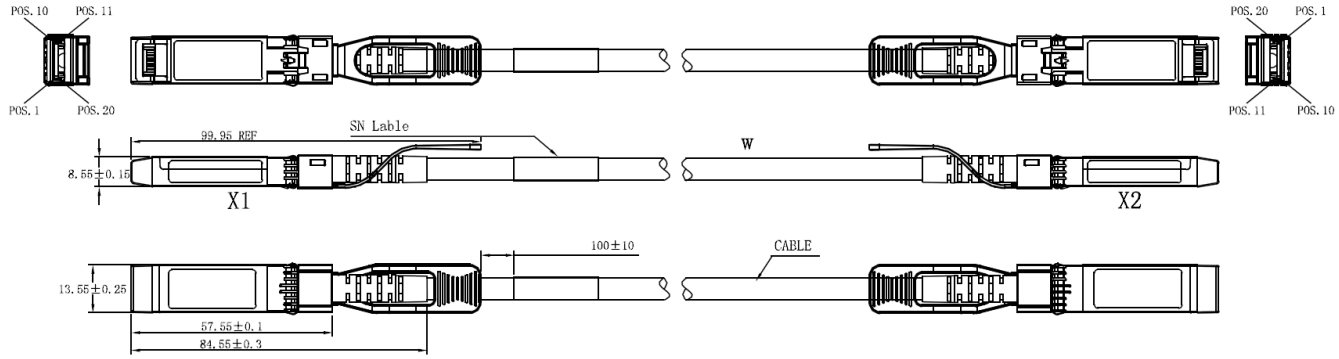
Pin	Logic	Symbol	Name/Description	Notes
1		VeeT	Transmitter Ground	
2	LV-TTL-O	TX_Fault	N/A	1
3	LV-TTL-I	TX_DIS	Transmitter Disable	2
4	LV-TTL-I/O	SDA	Tow Wire Serial Data	
5	LV-TTL-I	SCL	Tow Wire Serial Clock	
6		MOD_DEF0	Module present, connect to VeeT	
7	LV-TTL-I	RS0	N/A	1
8	LV-TTL-O	LOS	LOS of Signal	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-downto VeeT with 30K ohms resistor
2. Passive cable assemblies do not support LOS and TX_DIS



Mechanical Specifications

The connector is compatible with the SFF-8432 specification.



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