ProLabs

SFP-28G-PDAC2M-C

MSA and TAA Compliant 25GBase-CU SFP28 Direct Attach Cable (Passive Twinax, 2m)

Features

- Up to 25Gb/s data rate SFF-8402 Compliant
- Operating case temperature of 0-70 °C
- Single 3.3V supply voltage
- BER better than 10-15
- Hot pluggable
- Compliant with SFF-8432
- Compliant with IEEE 802.3by
- Compliant with RoHS

Application

- 25GE Ethernet

Product Description

This is an MSA compliant 25GBase-CU SFP28 to SFP28 direct attach cable that operates over passive copper with a maximum reach of 2.0m (6.6ft). It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. This direct attach cable is TAA (Trade Agreements Act) compliant and is built to comply with MSA (Multi-Source Agreement) standards. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

ProLabs' SFP28 direct attach cables are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products."

Recommended Operating Conditions

Parameter	Symbol	Min.	Max.	Unit
Operating Case Temperature	Topc	0	70	degC
Storage Temperature	Tst	-40	125	degC
Relative Humidity (non-condensation)	RS	-	85	%
Supply Voltage	VCC3	3.135	3.465	V
Voltage on LVTTL Input	Vilvttl	-0.3	VCC3 +0.2	V
Power Supply Current	ICC3	0.001	-	mA
Total Power Consumption	Pd	-	0.003	W

Notes:

Stress or conditions exceed the above range may cause permanent damage to the device.

This is a stress rating only and functional operation of the device at these or any other conditions above those listed in the operational sections of this specification is not applied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Frequency Domain

| Item	Test Parameter	IEEE802.3 by Specification
1	Differential Insertion Loss (SDD21)	Maximum insertion loss at 12.8906Ghz -22.48dB Minimum insertion loss at 12.8906Ghz -8dB
2	Differential Insertion Loss (SDD21)	Maximum insertion loss at 12.8906Ghz -22.48dB Minimum insertion loss at 12.8906Ghz -8dB
3	Differential Return Loss (SDD22)	$-16.5+2 \times SQRT(f)$ @ 0.01 to 4.1GHz $-10.66+14 \times Log10(f/5.5)$ @4.1 to 19GHz
4	Differential Return Loss (SDD11)	$-16.5+2 \times SQRT(f)$ @ 0.01 to 4.1GHz $-10.66+14 \times Log10(f/5.5)$ @4.1 to 19GHz
5	Common Mode Reflection (SCC22)	-2dB @ 0.01 to 19GHz
6	Common Mode Reflection (SCC11)	-2dB @ 0.01 to 19GHz
7	Common Mode Conversion (SCD22)	$-22+(20/25.78) \times (f)$ @ 0.01 to 12.89GHz $-15+(6/25.78) \times (f)$ @ 12.9 to 19GHz
8	Common Mode Conversion (SCD11)	$-22+(20/25.78) \times (f)$ @ 0.01 to 12.89GHz $-15+(6/25.78) \times (f)$ @ 12.9 to 19GHz
9	Differential to Common Mode Conversion Loss (SCD12)	-10dB @ 0.01 to 12.89GHz $-27+(29/22) \times (f)$ @ 12.9 to 15.7GHz -6.3dB @ 15.71 to 19GHz
10	Differential to Common Mode Conversion Loss (SCD21)	-10dB @ 0.01 to 12.89GHz $-27+(29/22) \times (f)$ @ 12.9 to 15.7GHz -6.3dB @ 15.71 to 19GHz

Pin Descriptions

Pin	Logic	Symbol	Name/Descriptions	Ref.
1		VeeT	Module Transmitter Ground	1
2	LVTTL-O	Tx_Fault	Transmitter Fault	2
3	LVTTL-I	Tx_Disable	Transmitter Disable	3
4	LVTTL-I/O	SDA	MOD-DEF2 2-wire serial interface data line	4
5	LVTTL-I/O	SCL	MOD-DEF1 2-wire serial interface clock line	4
6		Mod_Abs	Module Absent	5
7	LVTTL-I	RS0	Rate Select Zero	
8	LVTTL- O	Rx_LOS	Module Receiver Loss of Signal	2
9	LVTTL-I	RS1	Rate Select One	
10		VeeR	Module Receiver Ground	1
11		VeeR	Module Receiver Ground	1
12	CML-O	RD-	Receiver Inverted Data Output	
13	CML-O	RD+	Receiver Non-Inverted Data Output	
14		VeeR	Module Receiver Ground	1
15		VccR	Module Receiver 3.3V Supply	
16		VccT	Module Transmitter 3.3V Supply	
17		VeeT	Module Transmitter Ground	1
18	CML-I	TD+	Transmitter Non-Inverted Data Input	
19	CML-I	TD-	Transmitter Inverted Data Input	
20		VeeT	Module Transmitter Ground	1

Notes:

1. The module signal grounds, VeeR and VeeT, shall be isolated from the module case.
2. This is an open collector/drain output and shall be pulled up with 4.7-10k to Vcc_Host on the host board. Pull ups can be connected to multiple power supplies, however the host board design shall ensure that no module has voltage exceeding module VccT/R + 0.5 V.
3. This is an open collector/drain input and shall be pulled up with 4.7-10k to VccT in the module.
4. See 2-wire electrical specification.
5. This shall be pulled up with 4.7-10k to Vcc_Host on the host board.

Host Board Connector Pinout for SFP28
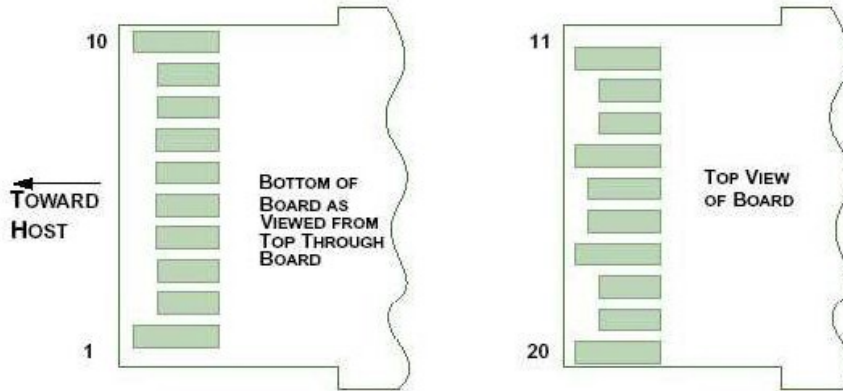
Mechanical Specifications

Parameter	Minimum	Typical	Maximum	Unit
Cable Diameter (26 AWG)		0.220		Inches
Bend Radius (26 AWG)	1.102			Inches
Cable Diameter (30 AWG)		0.181		Inches
Bend Radius (30 AWG)	0.905			Inches
Within Pair Skew			60	ps/5m
Cable Insertion Loss		24.06	28.90	dB/5m
Bulk Cable Time Delay			5.2	ns/m
Bulk Cable Impedance	95	100	105	Ohms
Insertion Force	/		20	N
Withdrawal Force	/		12.5	N
Retention Force	90		/	N
Durability	50 cycles		/	/

Mechanical Dimensions