

### SFPDD-50GB-PDAC3M-PRO

MSA and TAA 50GBase-CU SFP-DD to SFP-DD Direct Attach Cable (Passive Twinax, 3m, 27AWG)

#### Features

- SFP-DD module compliant to SFP-DD MSA Rev. 2.1
- SFP-DD-MIS Rev. 2.0
- Compliant to IEEE802.3cd & IEEE802.3bj high-frequency test standards
- 27AWG
- Passive twinax
- 50Gbps transmission
- Operating Temperature 0 to 70 Celsius
- Built-in EEPROM functions
- RoHS compliant and lead-free



#### Applications:

- 50GBase Ethernet

#### Product Description

This is a MSA Compliant 50GBase-CU SFP-DD to SFP-DD direct attach cable that operates over passive copper with a maximum reach of 3m. It has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. We stand behind the quality of our products and proudly offer a limited lifetime warranty. This cable is TAA (Trade Agreements Act) compliant and is built to comply with MSA (Multi-Source Agreement) standards.

Proline's transceivers 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.



### Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	Vcc	3.13	3.3	3.47	V
Storage Temperature	Tstg	-40		85	°C
Operating Case Temperature	Tc	0		70	°C
Humidity	RH	5		85	%
Data Rate (FDR10)			50		Gbps

### Physical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Length	L			3	m
AWG				27	AWG
Jacket Material	Black PVC				
Flame Rating	VW-1				

### Electrical Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit
Resistance	Rcon			3	Ω
Insulation Resistance	Rins			10	MΩ
Raw Cable Impedance	Zca	95		110	Ω
Mated Connector Impedance	Zmated	85		110	Ω
Maximum Insertion Loss at 13.28GHz	SDD21	8		17.16	dB
Differential to Common-Mode Return Loss	SCD11/22	$\text{Return\_loss}(f) \geq \begin{cases} 22 - \left(\frac{20}{25.78}\right)f, & 0.01 \leq f < 12.89 \\ 15 - \left(\frac{6}{25.78}\right)f, & 12.89 \leq f \leq 19 \end{cases}$			dB
Differential to Common-Mode Conversion Loss	SCD21-SDD21	$\text{Conversion\_loss}(f) - \text{IL}(f) \geq \begin{cases} 10, & 0.01 \leq f < 12.89 \\ 27 - \left(\frac{29}{22}\right)f, & 12.89 \leq f < 15.7 \\ 6.3, & 15.7 \leq f \leq 19 \end{cases}$			dB
Minimum COM	COM	3			dB
Rise Time (20-80%)				25	ps

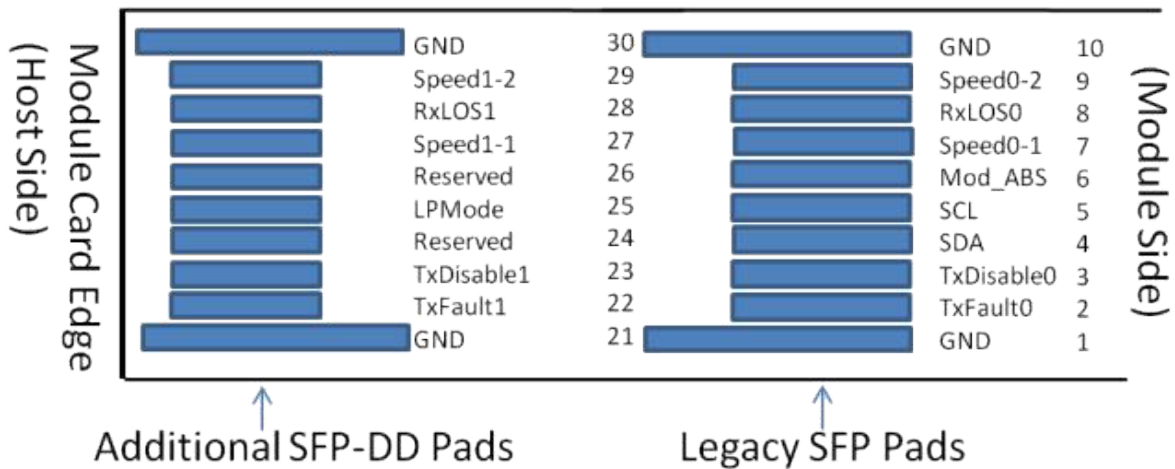
## Pin Descriptions

Pin	Logic	Symbol	Name/Description	Plug Sequence	Notes
1		GND	Module Ground.	1A	1
2	LVTTTL-O	Tx_Fault0	Transmitter Fault Indication for Channel 0.	3A	
3	LVTTTL-I	Tx_Disable0	Transmitter Disable for Channel 0.	3A	
4	LVC MOS-I/O	SDA	Management I/F Data.	3A	
5	LVC MOS-I/O	SCL	Management I/F Clock.	3A	
6	LVTTTL-O	MOD_ABS	Module Absent.	3A	
7	LVTTTL-I	Speed0-1	Rx Rate Select for Channel 0.	3A	
8	LVTTTL-O	RxLOS0	Rx Loss of Signal for Channel 0.	3A	
9	LVTTTL-I	Speed0-2	Tx Rate Select for Channel 0.	3A	
10		GND	Module Ground.	1A	1
11		GND	Module Ground.	1A	1
12	CML-O	RD0-	Inverse Received Data Out for Channel 0.	3A	
13	CML-O	RD0+	Received Data Out for Channel 0.	3A	
14		GND	Module Ground.	1A	1
15		VccR0	Receiver Power.	2A	2
16		VccT0	Transmitter Power.	2A	2
17		GND	Module Ground.	1A	1
18	CML-I	TD0+	Transmit Data In for Channel 0.	3A	
19	CML-I	TD0-	Inverse Transmit Data In for Channel 0.	3A	
20		GND	Module Ground.	1A	1
21		GND	Module Ground.	1B	1
22	LVTTTL-O	Tx_Fault1	Transmitter Fault Indication/Interrupt for Channel 1.	3B	
23	LVTTTL-I	Tx_Disable1	Transmitter Disable for Channel 1.	3B	
24		Reserved	Reserved for Future Use.	3B	
25	LVTTTL-I	LPMMode	Low-Power Mode Control.	3B	
26		Reserved	Reserved for Future Use.	3B	
27	LVTTTL-I	Speed1-1	Rx Rate Select for Channel 1.	3B	
28	LVTTTL-O	RxLOS1	Loss of Signal for Channel 1.	3B	
29	LVTTTL-I	Speed1-2	Tx Rate Select for Channel 1.	3B	
30		GND	Module Ground.	1B	1
31		GND	Module Ground.	1B	1
32	CML-O	RD1-	Inverse Received Data Out for Channel 1.	3B	
33	CML-O	RD1+	Received Data Out for Channel 1.	3B	
34		GND	Module Ground.	1B	1
35		VccR1	Receiver Power for Channel 1.	2B	2
36		VccT1	Transmitter Power for Channel 1.	2B	2
37		GND	Module Ground.	1B	1
38	CML-I	TD1+	Transmit Data In for Channel 1.	3B	
39	CML-I	TD1-	Inverse Transmit Data In for Channel 1.	3B	
40		GND	Module Ground.	1B	1

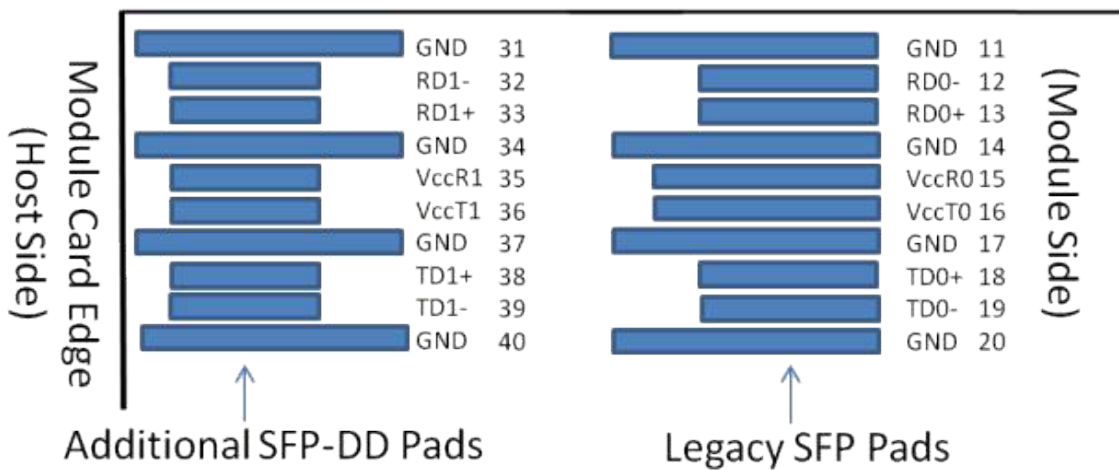
**Notes:**

1. GND is the symbol for signal and supply (power) common for the module. All are common within the module, and all module voltages are referenced to this potential unless otherwise noted. Connect these directly to the host board signal-common ground plane.
2. VccT0, VccT1, VccR0, and VccR1 are applied concurrently and may be internally connected within the module in any combination.

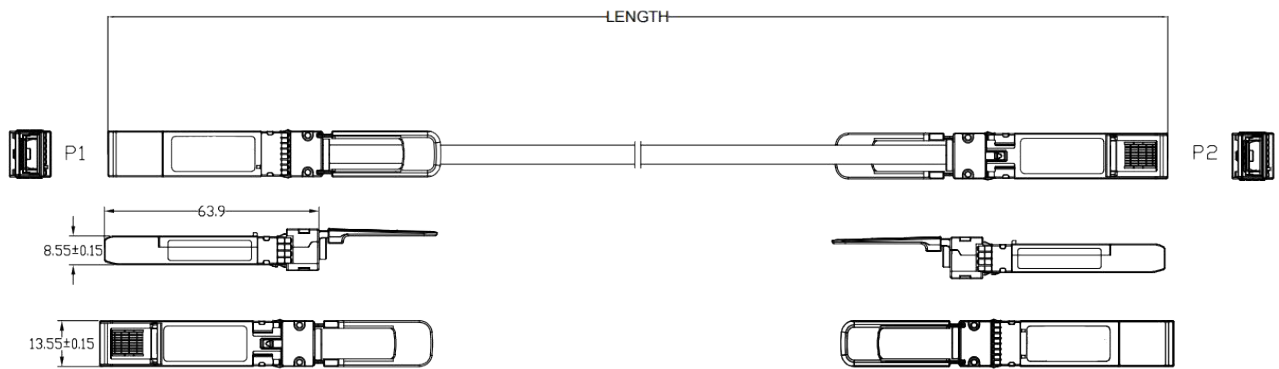
**Electrical Pin-Out Details**



Bottom side as viewed from top thru board



## Mechanical Specifications



### Notes:

1. 4 pairs, black PVC jacket, and RoHS 2.0 compliant.
2. 100% conductor test conditions: voltage of 5V, insulation resistance of  $10M\Omega$ , and a conduction resistance of maximum  $3\Omega$ .
3. High-frequency test according to IEEE802.3bj & IEEE802.3cd standards.

**About Us:**

Proline Options is one of North America's leading providers of transceivers and high speed cabling. With a reputation for quality, tested products that cover the connectivity spectrum, Proline Options has a solution for you regardless of the specification.

At Proline Options, every product is tested in its intended application - never batch or spec tested only. We run bandwidth, distance and IOS network tests. We have documented an impressive 0.03% failure rate over the last 10 years. To continue this rate of success we invest millions annually in our own on-site testing lab.



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