

SFP-AC11T5-xxMC

25Gbps SFP28 AOC, Multi Mode

DESCRIPTION

The SFP-AC11T5-xxMC SFP28 Active Optical Cables are direct-attach fiber assemblies with SFP28 connectors, compliant with 25G Ethernet IEEE 802.3by 25GBASE-SR standard. They are suitable for short distances and offer a cost-effective solution to connect within racks and across adjacent racks. The length is up to 100 meters

FEATURES

- Electrical interface compliant to SFF-8431
- 850nm VCSEL laser and PIN photo-detector
- Digital diagnostics functions are available via the I2C interface
- RoHS compliant
- Hot Pluggable

APPLICATION

- 25-Gigabit Ethernet
- 25G Fibre Channel
- InfiniBand QDR/DDR/SDR
- High-Performance Computing (HPC)
- Servers, switches, storage and host card adapters

ABSOLUTE MAXIMUM RATINGS (TC=25°C, UNLESS OTHERWISE NOTED)

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings will cause permanent damage and/or adversely affect device reliability.

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Storage Temperature	T _s	0	-	+70	°C	
Supply Voltage	V _{cc}	-0.3		3.6	V	
Operating Relative Humidity	RH	0	-	+85	%	
Input Voltage	V _{in}	-0.3	-	V _{cc} +0.3	V	

RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Data Rate	DR	-	25.78	-	Gbps	
Operating Case temperature	T _c	0	-	+70	°C	
Supply Voltage	V _{CC}	3.13	3.3	3.47	V	
Power Consumption (per end)		-	-	1	W	

Optical and Electrical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Data rate	BR		25.78		Gbps	
Centre Wavelength	λ_c	840	850	860	nm	
Spectral Width (RMS)	σ			0.6	nm	
Average Output Power	P_{avg}	-8.4		2.4	dBm	
Optical Power OMA	P_{OMA}	-6.4		3	dBm	
Extinction Ratio	ER	2			dB	
Differential data input swing	V_{IN}	40		1000	mV	
Input Differential Impedance	Z_{IN}	90	100	110	Ω	
TX Disable	Disable		2.0	V_{cc}	V	
	Enable		0	0.8	V	
TX Fault	Fault		2.0	V_{cc}	V	
	Normal		0	0.8	V	
Receiver						
Centre Wavelength	λ_c	840	850	860	nm	
Receiver Sensitivity (OMA)	P_{sens}	-	-	-10	dBm	1
Stressed Sensitivity (OMA)		-	-	-5.2	dBm	1
Receiver Power (OMA)				3	dBm	
LOS De-Assert	LOS_D			-13	dBm	
LOS Assert	LOS_A	-30			dBm	
LOS Hysteresis		0.5			dB	
Differential data output swing	V_{out}	300		850	mV	
LOS	High	2.0		V_{cc}	V	
	Low			0.8	V	

Notes:

1. Receive Sensitivity measured with a prbs31 pattern @25.78125Gb/s, BER 1E-5;

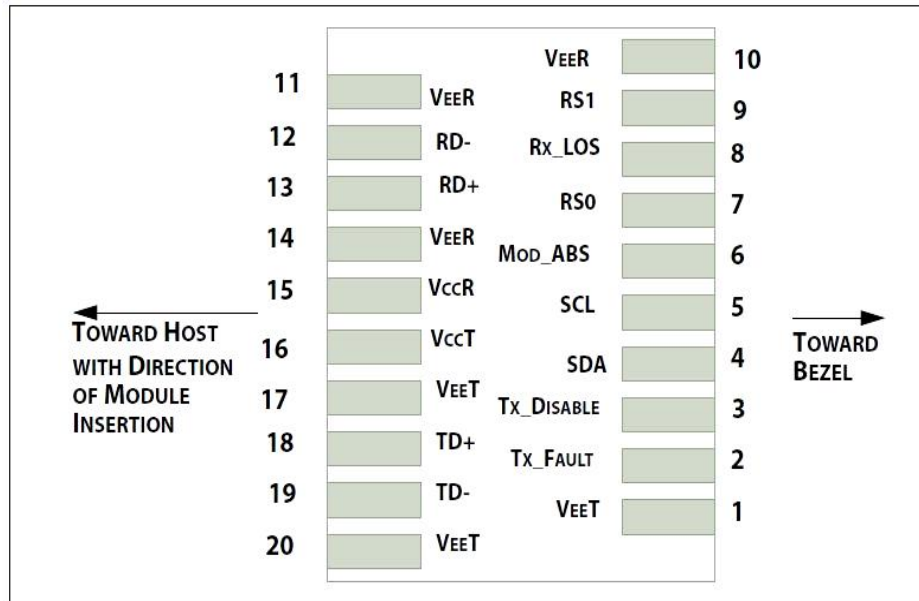
DIGITAL DIAGNOSTIC SPECIFICATIONS

Parameter	Rangel	Unit	Accuracy	Calibration
Temperature	0to +70	°C	±3°C	Internal / External
Voltage	3.0 to 3.6	V	±3%	Internal / External
Bias Current	0 to 20	mA	±10%	Internal / External
TX Power	-8 to 3	dBm	±3dB	Internal / External
RX Power	-14 to 0	dBm	±3dB	Internal / External

PIN DESCRIPTIONS

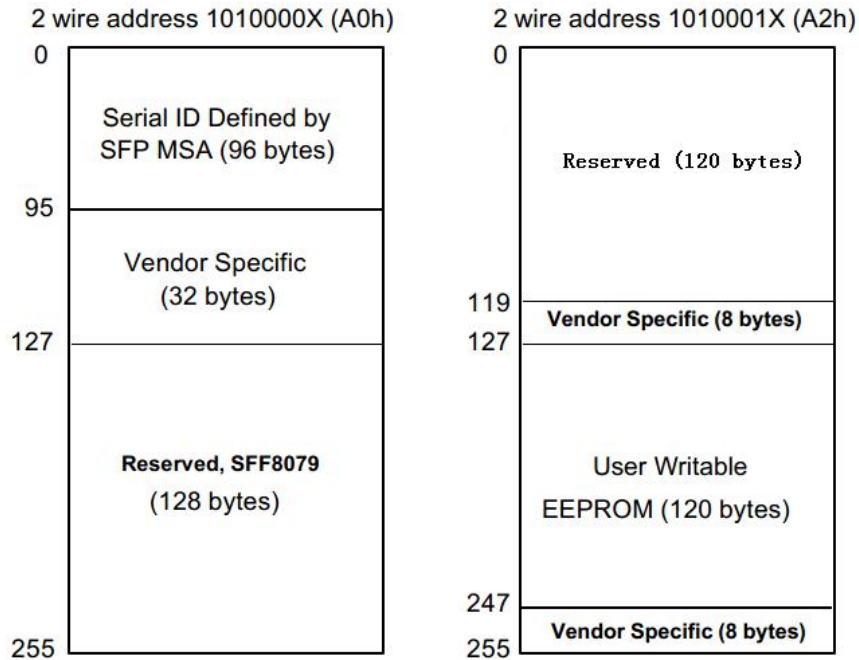
Pin	Symbol	Name/Description	Note
1	VeeT	Transmitter Ground, Common with Receiver Ground in Module	
2	TX Fault	Transmitter fault, pulled to VeeT in Module	
3	TX Disable	Transmitter disable, pulled to VccT with 4.7k to 10k ohm in Module	
4	SDA	2-Wire Serial Interface Data Line (Same as MOD-DEF2 in INF-8074i). LVTTTL-I/O	
5	SCL	2-Wire Serial Interface Data Line (Same as MOD-DEF2 in INF-8074i). LVTTTL-I	
6	Mod_ABS	Module Absent, Connect to VeeT or VeeR in Module.	
7	RS0	N/A	
8	LOS	Receiver loss of signal, pulled to VeeR in Module	
9	RS1	N/A	
10	VeeR	Receiver Ground	
11	VeeR	Receiver Ground	
12	RD-	Receiver Inverted DATA out, AC Coupled, CML-I	
13	RD+	Receiver Non-inverted DATA out, AC Coupled, CML-I	
14	VeeR	Receiver Ground	
15	VccR	Receiver Power Supply	
16	VccT	Transmitter Power Supply	
17	VeeT	Transmitter Ground	
18	TD+	Transmitter Non-Inverted DATA in. DC Coupled, CML-O	
19	TD-	Transmitter Inverted DATA in. DC Coupled, CML-O	
20	VeeT	Transmitter Ground	

PIN DIAGRAM



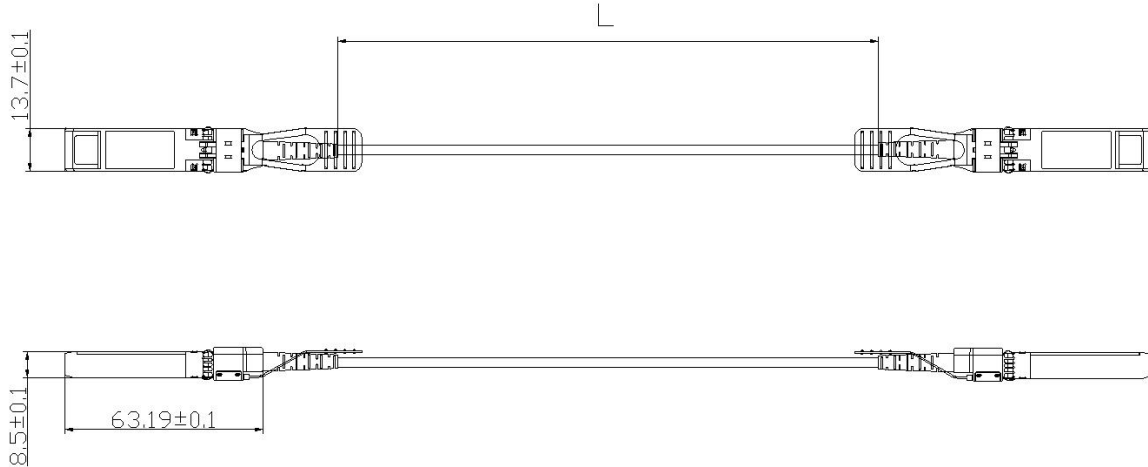
EEPROM INFORMATION

EEPROM memory map specific data field description is as below:



MECHANICAL SPECIFICATIONS

Unit: mm



Ordering information

Part Number	Product Description
SFP-AC11T5-xxMC	850nm, 25Gbps, 1m~100m, 0°C~+70°C, with DDM

Reach

1M = 1m
3M = 3m
5M = 5m
10M = 10m
A0M=100m

For More Information

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