### Соединитель, SFP28-SFP28, 25G, DAC, Xm

Соединители моделей SFP28-DAC-XM являются сборками двух модулей SFP28 без оптических фотоприемников и передатчиков, соединенных электрическим кабелем витая пара.



#### Особенности:

- до 25Gb/s
- одно питание 3.3В
- поддержка горячей замены
- соответствие спецификации SFP28 MSA SFF-8402

#### Области применения:

- 10GB / 25GB Ethernet

P/N	Length	Data Rate	AWG	Length Tolerance
SFP28-DAC-0.5M	0.5M	25G	30	+20/-20mm
SFP28-DAC-1M	1M	25G	30	+30/-30mm
SFP28-DAC-1.5M	1.5M	25G	30	+30/-30mm
SFP28-DAC-2M	2M	25G	30	+30/-30mm
SFP28-DAC-2.5M	2.5M	25G	30	+30/-30mm
SFP28-DAC-3M	ЗM	25G	30	+30/-30mm
SFP28-DAC-4M	4M	25G	26	+60/-60mm
SFP28-DAC-5M	5M	25G	26	+60/-60mm

### **Recommended Operation Condition**

ParaM	Symbol	Min	Max	Unit
Operating Case Temperature	Торс	0	70	deg C
Storage Temperature	Tst	-40	85	deg C
Relative Humidity (non-condensation)	RS	35	60	%
Supply Voltage	VCC3	3.13 5	3.465	V
Voltage on LVTTL Input	Vilvttl	-0.3	VCC3 +0.2	V

# Optiset

Power Supply Current	ICC3		200	mA
Total Power Consumption	Pd	-	0.7	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.

### **Pin Function Definitions**

Pin Num.	Name	Function	Plug Seq.	Notes
1	VeeT	Transmitter Ground	1	
2	TX Fault	Transmitter Fault Indication	3	Note 1
3	TX Disable	Transmitter Disable	3	Note 2, Module disables on high or open
4	SDA	Module Definition 2	3	Data line for Serial ID.
5	SCL	Module Definition 1	3	Clock line for Serial ID.
6	MOD-ABS	Module Definition 0	3	Note 3
7	RS0	RX Rate Select (LVTTL).	3	Rate Select 0, optionally controls SFP28 module receiver. This pin is pulled low to VeeT with a >30K resistor
8	LOS	Loss of Signal	3	Note 4
9	RS1	TX Rate Select (LVTTL).	1	Rate Select 1, optionally controls SFP28 module transmitter. This pin is pulled low to VeeT with a >30K resistor.
10	VeeR	Receiver Ground	1	Note 5
11	VeeR	Receiver Ground	1	Note 5
12	RD-	Inv. Received Data Out	3	Note 6
13	RD+	Received Data Out	3	Note 6
14	VeeR	Receiver Ground	1	Note 5
15	VccR	Receiver Power	2	3.3V ± 5%, Note 7

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16	VccT	Transmitter Power	2	3.3V ± 5%, Note 7
17	VeeT	Transmitter Ground	1	Note 5
18	TD+	Transmit Data In	3	Note 8
19	TD-	Inv. Transmit Data In	3	Note 8
20	VeeT	Transmitter Ground	1	Note 5

#### Notes:

1) TX Fault is an open collector/drain output, which should be pulled up with a  $4.7K - 10K\Omega$  resistor on the host board. Pull up voltage between 2.0V and VccT/R+0.3V. When high, output indicates a laser fault of some kind. Low indicates normal operation. In the low state, the output will be pulled to < 0.8V.

2) TX disable is an input that is used to shut down the transmitter optical output. It is pulled up within the module with a  $4.7K \sim 10 \text{ K} \Omega$  resistor. Its states are:

Low (0 - 0.8V): Transmitter on (>0.8, < 2.0V): Undefined

High (2.0 – 3.465V): Transmitter Disabled Open: Transmitter Disabled

3) Module Absent, connected to VeeT or VeeR in the module.

4) LOS (Loss of Signal) is an open collector/drain output, which should be pulled up with a  $4.7K - 10K\Omega$  resistor. Pull up voltage between 2.0V and Vcc\_Host. When high, this output indicates the received optical power is below the worst-case receiver sensitivity (as defined by the standard in use). Low indicates normal operation. In the low state, the output will be pulled to < 0.8V.

5) VeeR and VeeT may be internally connected within the SFP28 module.

6) RD-/+: These are the differential receiver outputs. They are AC coupled  $100\Omega$  differential lines which should be terminated with  $100\Omega$  (differential) at the user SERDES. The AC coupling is done inside the module and is thus not required on the host board. The voltage swing on these lines will be between 185 and 425 mV differential (92.5 –212.5 mV single ended) when properly terminated.

7) VccR and VccT are the receiver and transmitter power supplies. They are defined as 3.3V ±5% at the SFP+ connector pin. Maximum supply current is 340mA. Inductors with DC resistance of less than 1 ohm should be used in order to maintain the required voltage at the SFP28 input pin with 3.3V supply voltage. When the recommended supply-filtering network is used, hot plugging of the SFP28 transceiver module will result in an inrush current of no more than 30mA greater than the steady state value. VccR and VccT may be internally connected within the SFP28 transceiver module.

8) TD-/+: These are the differential transmitter inputs. They are AC-coupled, differential lines with  $100\Omega$  differential termination inside the module. The AC coupling is done inside the module and is thus not required on the host board. The inputs will accept differential swings of 90 – 800 mV (45 – 400 mV single-ended), though it is recommended that values between 90 and 800 mV differential (45 – 400 mV single-ended) be used for best EMI performance.

# **Mechanical Specifications**

Mechanical							
ParaM	Minimum	Typical	Maximum	Unit			
Cable DiaM (26 AWG)		0.220		Inches			
Bend Radius (26 AWG)	1.102			Inches			
Cable DiaM (28 AWG)		0.19		Inches			
Bend Radius (28 AWG)	0.95			Inches			
Cable DiaM (30 AWG)		0.181		Inches			
Bend Radius (30 AWG)	0.905			Inches			
Within Pair Skew			60	ps/5m			
Cable Insertion Loss		15.34		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**

