

## DATA SHEET

### **MODULETEK – DAC-SFP28-P-x-xxAWG-aa.aaM-C0C0C**

SFP28 25Gbps Direct Attach Copper Cable Assembly

#### **DAC-SFP28-P-x-xxAWG-aa.aaM-C0C0C Overview**

ModuleTek's DAC-SFP28-P-x-xxAWG-aa.aaM-C0C0C SFP28 Direct Attach Copper Cable Assembly are based on 25G Ethernet IEEE 802.3by standard, SFF-8402 SFP28 standard, and the passive SFP28 Cable is a low cost alternative for short reach applications. The passive design has no signal amplification in the cable assembly. Electronic Dispersion Compensation (EDC) is typically used on the host board designs when passive copper cable assemblies are utilized.

#### **Product Features**

- Up to 25Gb/s bi-directional data links
- Compliant with SFF-8402
- Hot-pluggable
- AC coupled inputs and outputs
- 100 Ohm differential impedance
- Enhanced EMI design
- Single power supply 3.3V
- RoHS Compliant
- Operating temperature range: 0°C to 70°C

#### **Applications**

- 25GBASE Ethernet

## Ordering Information

Part Number	Description	Gauge	Length
DAC-SFP28-P-E-30AWG-aa.aaM-C0C0C	SFP28 Passive Direct Attach Copper Cable Assembly, without MCU, aa.aa $\leq$ 2	30AWG	$\leq$ 2m
DAC-SFP28-P-E-28AWG-aa.aaM-C0C0C	SFP28 Passive Direct Attach Copper Cable Assembly, without MCU, 2<aa.aa $\leq$ 3	28AWG	2m<length $\leq$ 3m
DAC-SFP28-P-E-26AWG-aa.aaM-C0C0C	SFP28 Passive Direct Attach Copper Cable Assembly, without MCU, 3<aa.aa $\leq$ 5	26AWG	3m<length $\leq$ 5m
DAC-SFP28-P-M-30AWG-aa.aaM-C0C0C	SFP28 Passive Direct Attach Copper Cable Assembly, with MCU, aa.aa $\leq$ 2	30AWG	$\leq$ 2m
DAC-SFP28-P-M-28AWG-aa.aaM-C0C0C	SFP28 Passive Direct Attach Copper Cable Assembly, with MCU, 2<aa.aa $\leq$ 3	28AWG	2m<length $\leq$ 3m
DAC-SFP28-P-M-26AWG-aa.aaM-C0C0C	SFP28 Passive Direct Attach Copper Cable Assembly, with MUC, 3<aa.aa $\leq$ 5	26AWG	3m<length $\leq$ 5m
<p><b>Note:</b></p> <ol style="list-style-type: none"> <li>1. "aa.aa" indicates the cable length in meters.</li> <li>2. The wire diameter of the products in the above list is the default value under different lengths. We can also provide other wire products to customers with special requirements.</li> </ol>			
<p><b>For More Information:</b>            ModuleTek Limited            Unit 4A, B Building, Shenfubao S&amp;T Industrial Park, No. 3 Huang Huai Road, Futian Free Trade Zone, Shenzhen, China. 518038.            Email: sales@moduletek.com</p>			

## General Specifications

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Data Rate	DR		25		Gb/s	1
Bit Error Rate	BER			$10^{-12}$		
Operating Temperature	T <sub>OP</sub>	0		70	°C	2
Storage Temperature	T <sub>STO</sub>	-40		85	°C	3
Supply Current	I <sub>S</sub>			4	mA	4
Input Voltage	V <sub>CC</sub>	3.14	3.3	3.46	V	4
Maximum Voltage	V <sub>MAX</sub>	-0.5		4	V	4

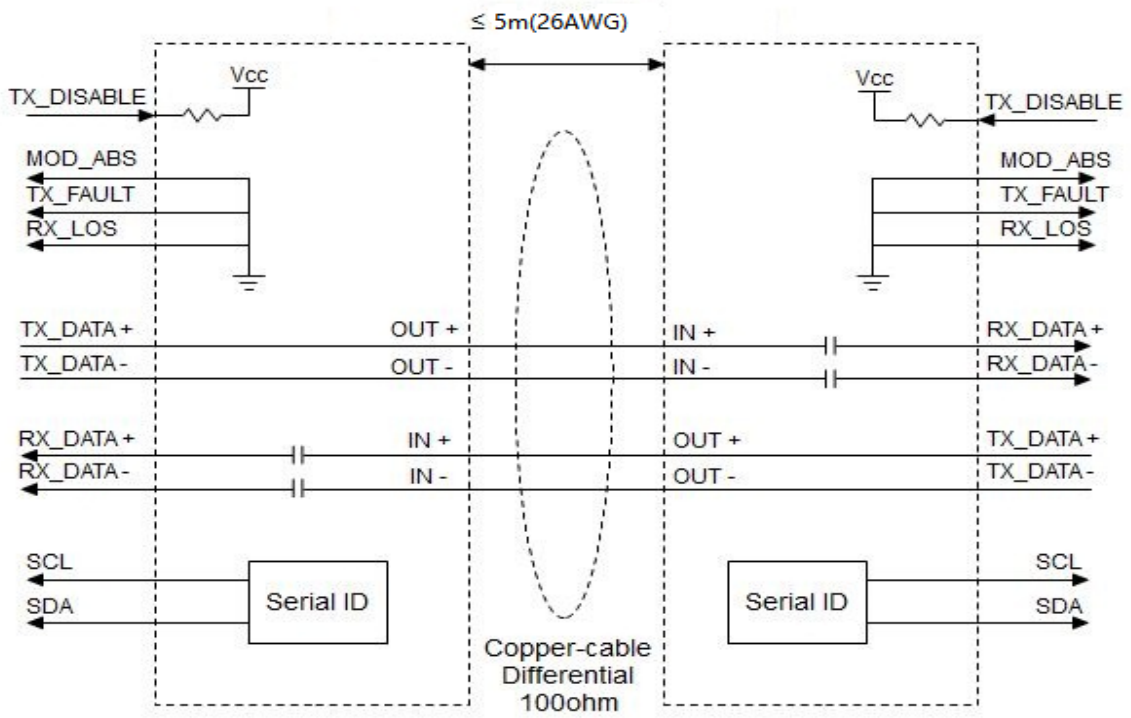
**Notes:**

- 1.IEEE 802.3by
- 2.Case temperature
- 3.Ambient temperature
- 4.For electrical power interface

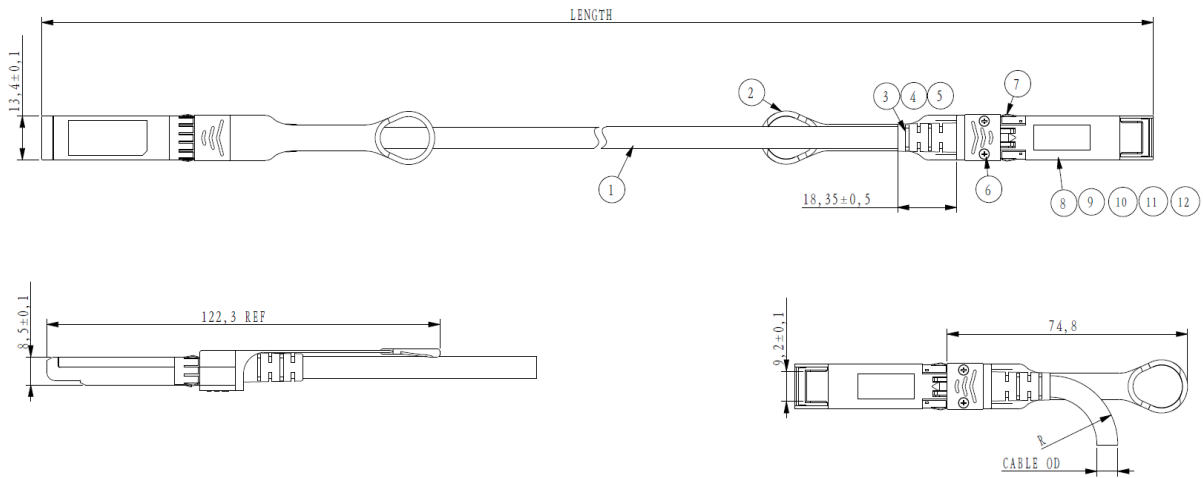
## Cable Mechanical Specifications

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Wire Gauge		30AWG		26AWG	AWG	
Cable Impedance	Z	95	100	105	Ohm	

## Block Diagram of Transceiver



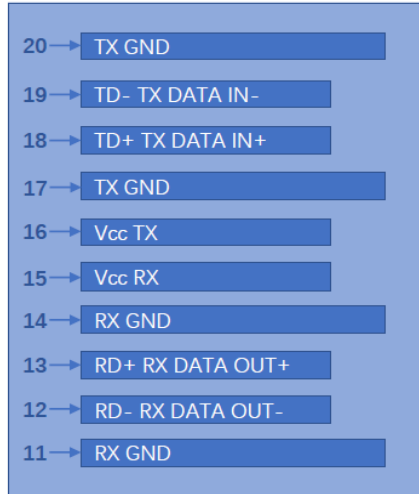
## Dimensions



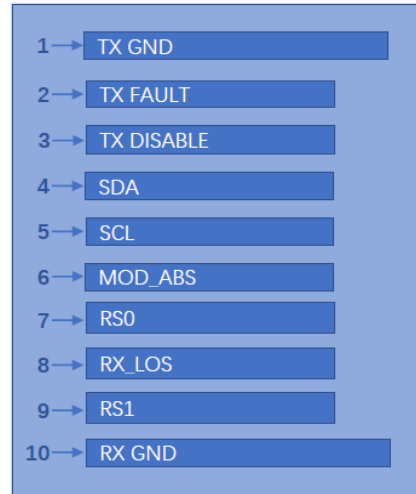
ITEM	NAME	DESCRIPTION	Q'TY
1	RAW CABLE	2PAIRS BLACK,ROTHS2.0	A/R
2	PULL TAB	PA66, BLUE 300C	2
3	PLASTIC BOOT	PVC, BLACK	2
4	COPPER RING	COPPER	2
5	ALUMINUM RING	ALUMINIUM ALLOY	2
6	SCREW	MILD STEEL	4
7	GROUNDING SPRINGS	SUS303	2
8	BOTTOM SHELL	Zn ALLOY,PLATED Ni OVER Cu	2
9	TOP SHELL	Zn ALLOY,PLATED Ni OVER Cu	2
10	PCB ASSEMBLY	SFP PCB,20P,Au 30u"Min	2
11	SPRING	HANDED ROTATION,SWPB	4
12	PULL ROD	SUS316	4

ALL DIMENSIONS ARE  $\pm 0.2$ mm UNLESS OTHERWISE SPECIFIED  
UNIT: mm

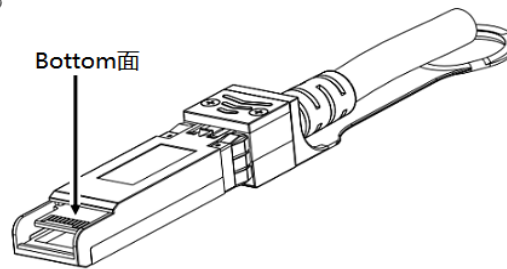
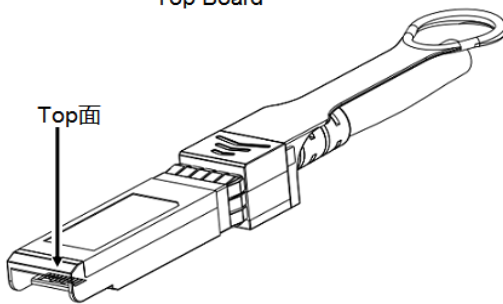
## Electrical Pad Layout



Top Board



Bottom Board



## Pin Assignment

PIN #	Symbol	Description	Remarks
1	V <sub>EET</sub>	Transmitter ground (common with receiver ground)	
2	T <sub>FAULT</sub>	Transmitter Fault.	
3	T <sub>DIS</sub>	Transmitter Disable. Laser output disabled on high or open	
4	SDA	Data line for serial ID	
5	SCL	Clock line for serial ID	
6	MOD_ABS	Module Absent. Grounded within the module	
7	RS0	No connection required	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation	
9	RS1	No connection required	
10	V <sub>EER</sub>	Receiver ground (common with transmitter ground)	
11	V <sub>EER</sub>	Receiver ground (common with transmitter ground)	
12	RD-	Receiver Inverted DATA out. AC coupled	
13	RD+	Receiver Non-inverted DATA out. AC coupled	
14	V <sub>EER</sub>	Receiver ground (common with transmitter ground)	
15	V <sub>CCR</sub>	Receiver power supply	
16	V <sub>CCT</sub>	Transmitter power supply	
17	V <sub>EET</sub>	Transmitter ground (common with receiver ground)	
18	TD+	Transmitter Non-Inverted DATA in. AC coupled	
19	TD-	Transmitter Inverted DATA in. AC coupled	
20	V <sub>EET</sub>	Transmitter ground (common with receiver ground)	

## References

1. IEEE standard 802.3by. IEEE Standard Department.