DATA SHEET

DAC-SFP28-A-M-xxAWG-aa.aaM

SFP28 25Gbps Active Copper Cable Assembly

DAC-SFP28-A-M-xxAWG-aa.aaM Overview

SFP28 active cable uses shielded high-speed differential cables.Internal high-speed elec- tric signal compensation functions such as pre-emphasis and equalization can increase the data trans- mission distance between switches without compensation function.The product complies with the 25G Ethernet IEEE802.3by standard and the SFF-8402 standard, supports 25G transmission rate, and is backward compatible with low-rate applications.Its biggest feature is the use of thinner cables, longer transmission distance, low power consumption, low cost and high reliability. It is the preferred solution for 25G speed short-distance applications, and is widely used in data centers with cabinets or adjacent cabinets data transfer between.

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-A-M-30AWG-aa.aaM	SFP28 Active Copper Cable,with MCU,aa.aa≤5	30AWG	≤5m
DAC-SFP28-A-M-28AWG-aa.aaM	SFP28 Active Copper Cable,with MCU，5<aa.aa≤7	28AWG	5m<length≤7m
DAC-SFP28-A-M-26AWG-aa.aaM	SFP28 Active Copper Cable,with MCU,7<aa.aa≤10	26AWG	7m<length≤10m

Note:
1. "A" indicates active cable
2. "M" indicates built-in MCU
3."aa.aa" represents the meter size
4. 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.
5. The cable used in this product is produced by Belden Hessmann Industrial (Suzhou) Co., Ltd. (brand: BELDEN).

For More Information:
SONGXIN TAIPEI TECH SOLUTIONS CO., LTD.
Web: www.songxin.com.tw
Email: oversea@songxin.com.tw

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_C	0		70	$^\circ$C	2
Storage Temperature	T_{STO}	-40		85	$^\circ$C	3
Input Voltage	V_{CC}	3.14	3.3	3.46	V	4

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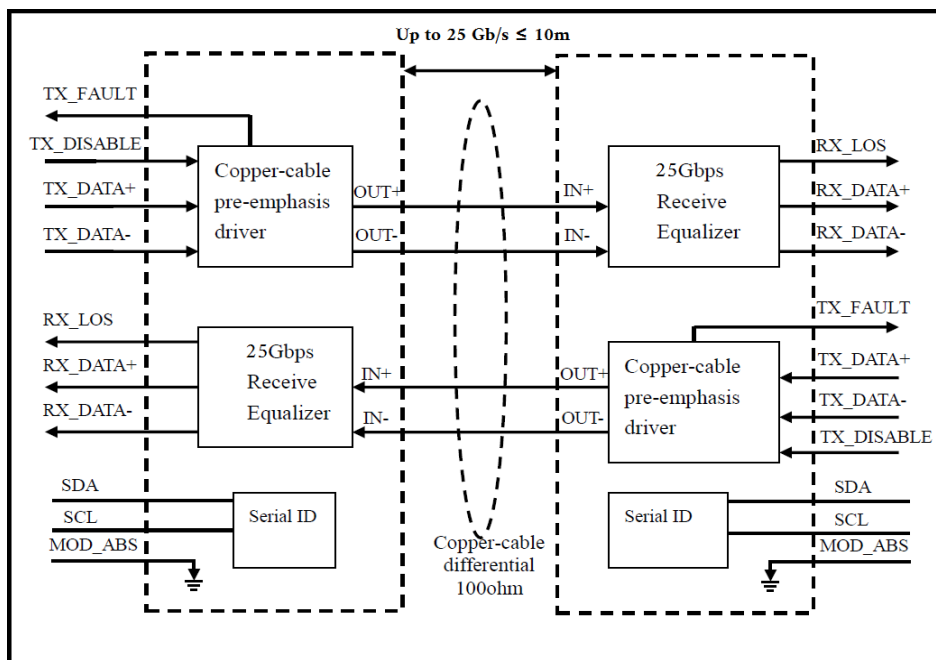3. Ambient temperature
4. For electrical power interface

Cable Specifications

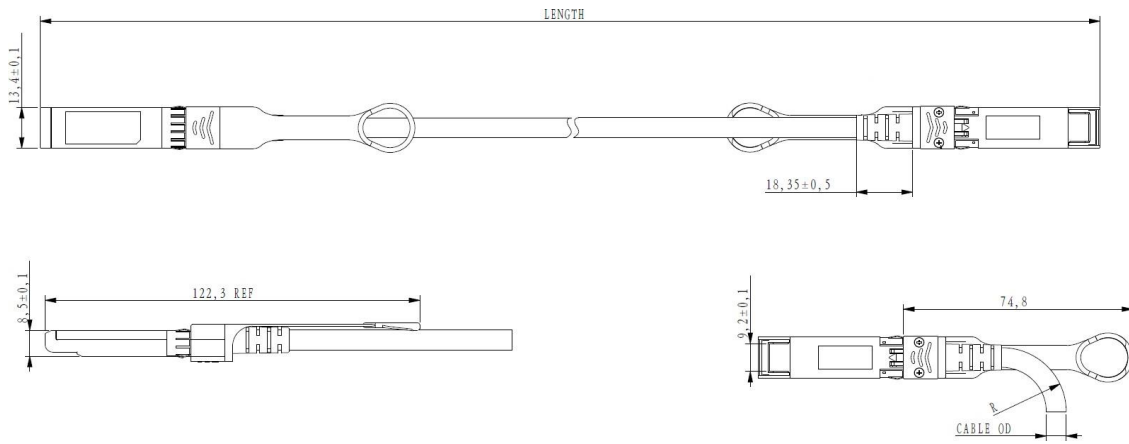| Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Wire Gauge		30AWG		26AWG	AWG	
Cable Impedance	Z	90	100	110	Ohm	1

Notes
1. Includes both PCB and intermediate cable impedance
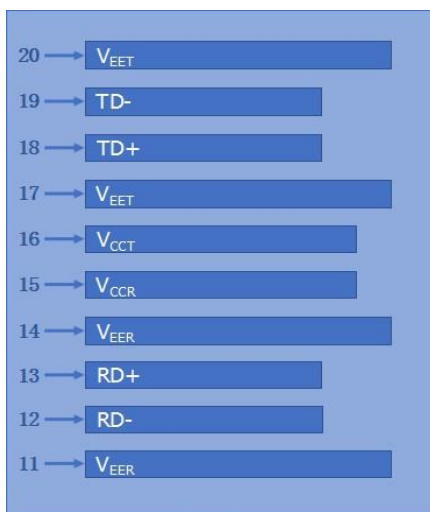
Block Diagram of Transceiver

Dimensions

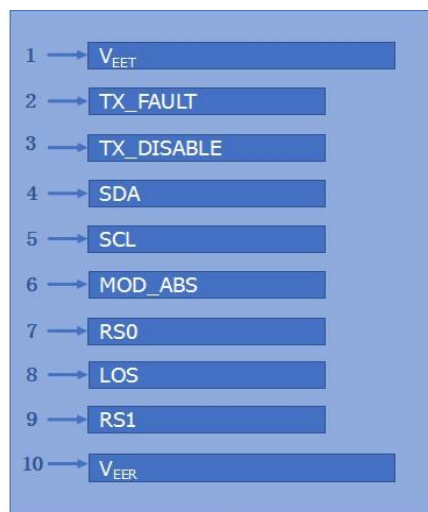ALL DIMENSIONS ARE ±0.2mm UNLESS OTHERWISE SPECIFIED
UNIT: mm

Cable dimension

serial number	Standard Wire Gauge AWG	Cable diameter OD (mm)	Minimum bending radius R (mm)
1	30	4.6	26
2	28	5.0	28
3	26	5.6	30

Electrical Pad Layout

20	V_{EET}	
19	TD-	
18	TD+	
17	V_{EET}	
16	V_{CCT}	
15	V_{CCR}	
14	V_{EER}	
13	RD+	
12	RD-	
11	V_{EER}	

Top of Board

1	V_{EET}	
2	TX_FAULT	
3	TX_DISABLE	
4	SDA	
5	SCL	
6	MOD_ABS	
7	RS0	
8	LOS	
9	RS1	
10	V_{EER}	

Bottom of Board

Top

Bottom
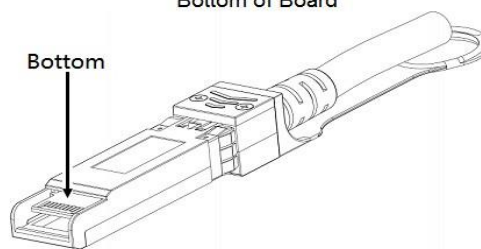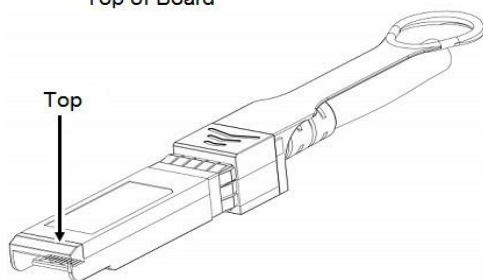
Pin Assignment

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

Notes:
1. Circuit ground is isolated from chassis ground
2. Disabled: $T_{DIS} > 2V$ or open,Enabled: $T_{DIS} < 0.8V$
3. Should Be pulled up with 4.7k‑10k ohm on host board to a voltage between 2V and 3.6V
4. LOS is open collector output

References

1. IEEE standard 802.3by. IEEE Standard Department.