

SFP28 25G AOC 850nm

AS85123-CN-XXX

FEATURES

- Operating data rate 25Gb/s
- On OM3/OM4 MMF length up to 70m/100m
- Active optical cable
- Hot pluggable SFP28 form factor
- Compliant with IEEE 802.3ae
- Operating case temperature 0°C ~70°C
- 3.3V single power supply
- Low power consumption <0.35W per end
- Compliant with RoHS 2.0
- Electrical interface compliant to SFF-8431
- 850nm VCSEL transmitter, PIN photo-detector receiver

APPLICATIONS

- Data center 25GbE

ORDERING INFORMATION

Part Number	Form Factor	Data Rate	Media	Distance (m)	Wavelength (nm)	Temperature (°C)
AS85123-CN-XXX	SFP28	25G	-	-	850	0~70

1 ABSOLUTE MAXIMUM PARAMETERS

Exceeding the limits below may damage the active optical cable permanently.

Parameter	Symbol	Min.	Max.	Unit.
Storage Temperature	Ts	-40	+85	°C
Relative Humidity	RH	0	95	%
Power Supply Voltage	VCC	-0.5	+4	V

2 . RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min.	Typ.	Max.	Unit.
Case Operating Temperature	T _A	0		70	°C
Power Supply Voltage	V _{CC}	3.13	3.3	3.47	V
Power Consumption(per end)		-		0.35	W
Data Rate	DR		25.78		Gbps
Data Speed Tolerance	ΔDR	-100		100	ppm

3 . ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Tx Disable Input-High	VDISH	2		V _{CC} +0.3	V	
Tx Disable Input-High	VDISH	2		V _{CC} +0.3	V	
Tx Disable Input-Low	VDISL	0		0.8	V	
Tx Fault Input-High	VTxFH	2		V _{CC} +0.3	V	
Tx Fault Input-Low	VTxFL	0		0.8	V	
Receiver						
LOSS -High	VLOSH	2		V _{CC} +0.3	V	
LOSS -Low	VLOSL	0		0.8	V	

4 . OPTICAL CHARACTERISTICS

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Center Wavelength	λ _c	840	850	860	nm	

Extinction Ratio	ER	2			dB	
Average optical Power	PAVG	-8.4		2.4	dBm	
Rise/Fall Time	Tr/Tf			50	ps	
Relative Intensity Noise	Rin			-128	dB/Hz	
Optical Return Loss	TOL			12	dB	
Transmitter Reflectance	RT			-12	dB	
Receiver						
Center Wavelength	λ_c	840	850	860	nm	
Overload, each lane	OVL	-1			dBm	
Receiver Sensitivity in OMA, each Lane	SEN			-10	dBm	
LOS De-Assert	LOS _D			-13	dBm	
LOS Assert	LOS _A	-30			dBm	
LOS Hysteresis		0.5			dB	

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

5 . PIN DESCRIPTIONS

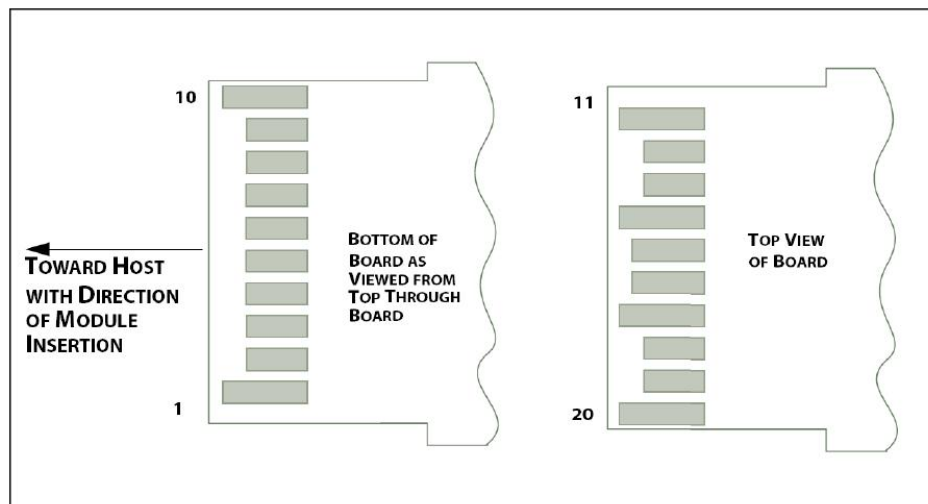
Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground	1
2	Tx Fault	Transmitter Fault Indication	2
3	Tx Disable	Transmitter Disable	3
4	SDA	Module Definition 2	4
5	SCL	Module Definition 1	4
6	MOD-ABS	Module Definition 0	4
7	RS0	RX Rate Select (LVTTTL).	5
8	LOS	Loss of Signal	6
9	RS1	TX Rate Select (LVTTTL).	5
10	VeeR	Receiver Ground	1
11	VeeR	Receiver Ground	1
12	RD-	Inv. Received Data Out	
13	RD+	Received Data Out	
14	VeeR	Receiver Ground	1
15	VeeR	Receiver Ground	
16	VccT	Transmitter Power	

17	VeeT	Transmitter Ground	1
18	TD+	Transmit Data In	
19	TD-	Inv. Transmit Data In	
20	VeeT	Transmitter Ground	1

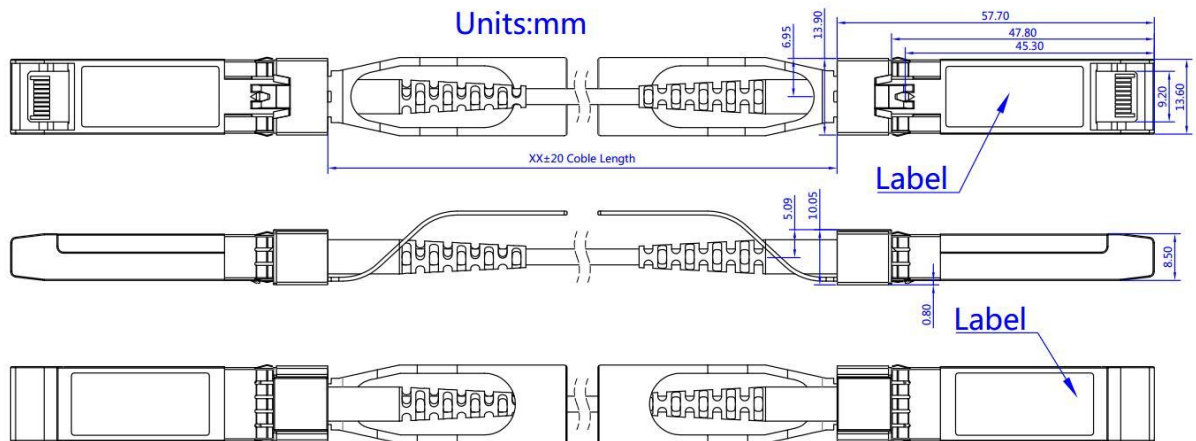
Notes:

1. Circuit ground is internally isolated from chassis ground
2. TFAULT is an open collector/drain output, which should be pulled up with a 4.7k – 10k Ohms resistor on the host board if intended for use. Pull up voltage should be between 2.0V to Vcc + 0.3V. A high output indicates a transmitter fault caused by either the TX bias current or the TX output power exceeding the preset alarm thresholds. A low output indicates normal operation. In the low state, the output is pulled to <0.8 V
3. Laser output disabled on TDIS >2.0V or open, enabled on TDIS <0.8V
4. Should be pulled up with 4.7k – 10kohms on host board to a voltage between 2.0V and 3.6V. MOD_ABS pulls line low to indicate module is plugged in
5. Rate select can also be set through the 2-wire bus in accordance with SFF-8472 v. 12.1C. Rx Rate Select is set at Bit 3, Byte 110, Address A2h. Tx Rate Select is set at Bit 3, Byte 118, Address A2h. Note: writing a “1” selects maximum bandwidth operation. Rate select is the logic OR of the input state of Rate Select Pin and 2-wire bus
6. LOS is open collector output. Should be pulled up with 4.7k – 10kohms on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal

6 . PIN DIAGRAM



7 . Mechanical Design Diagram



8 . LABEL DIAGRAM



AS85123-CN-XXX

SFP28 25G AOC 850nm

Class 1 Laser
MADE IN CHINA

S/N: ??????????



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