

The GigaTech Products **AOC-S-S-25G-xM-GT** is programmed to be fully compatible and functional with all intended Arista switching devices. These active optical cables are designed to meet the SFP28 25Gbs SFF-8431 specification. These cables use multimode fiber carrying an 850nm nominal wavelength. The active optical SFP+ cable is a light weight small diameter option for distances up to 70 meters.



Features

- Up to 25.78 GBd bi-directional data links
- Hot-pluggable SFP+ footprint
- Up to 70 meters
- Built in CDR with shut off control
- Built in digital diagnostic functions
- Less than 1W power consumption
- Operating temperature range: 0°C to 70°C

Compliance

- MSA SFF-8431
- RoHS Compliant

Applications

- 25GBASE Ethernet



Warranty:

GigaTech Branded Cables- Lifetime Warranty

Part Numbers

Part Number	Distance	Description
AOC-S-S-25G-1M-GT	1M	25GbE SFP to SFP Active Optical Cable Arista Compatible- 1M
AOC-S-S-25G-2M-GT	2M	25GbE SFP to SFP Active Optical Cable Arista Compatible- 2M
AOC-S-S-25G-3M-GT	3M	25GbE SFP to SFP Active Optical Cable Arista Compatible- 3M
AOC-S-S-25G-5M-GT	5M	25GbE SFP to SFP Active Optical Cable Arista Compatible- 5M
AOC-S-S-25G-7M-GT	7M	25GbE SFP to SFP Active Optical Cable Arista Compatible- 7M
AOC-S-S-25G-10M-GT	10M	25GbE SFP to SFP Active Optical Cable Arista Compatible- 10M
AOC-S-S-25G-15M-GT	15M	25GbE SFP to SFP Active Optical Cable Arista Compatible- 15M
AOC-S-S-25G-20M-GT	20M	25GbE SFP to SFP Active Optical Cable Arista Compatible- 20M
AOC-S-S-25G-25M-GT	25M	25GbE SFP to SFP Active Optical Cable Arista Compatible- 25M
AOC-S-S-25G-30M-GT	30M	25GbE SFP to SFP Active Optical Cable Arista Compatible- 30M
AOC-S-S-25G-50M-GT	50M	25GbE SFP to SFP Active Optical Cable Arista Compatible- 50M
AOC-S-S-25G-70M-GT	70M	25GbE SFP to SFP Active Optical Cable Arista Compatible- 70M

General Specifications

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Operating Temperature	T_{OP}	0		70	°C	Case Temperature
Supply Voltage	V_{CC}	-0.3		3.6	V	
Power Consumption				1	W	
Data Rate	DR		25.78		Gbps	
Data Speed Tolerance	ΔDR	-100		+100	ppm	

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Input Voltage	V_{IN}	-0.3		$V_{CC}+0.3$	V	
Supply Voltage	V_{CC}	-0.3		3.6	V	
Relative Humidity	RH	0		85	%	Non-Condensing
Operating Temperature	T_{OP}	0		70	°C	Case Temperature
Storage Temperature	T_{STO}	-20		85	°C	Ambient Temperature

Electrical Specifications

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Differential Input Impedance	Z_{IN}	90	100	110	ohm	
Differential Output Impedance	Z_{OUT}	90	100	110	ohm	
Differential Input Voltage Amplitude	ΔV_{IN}	100		1800	mVp-p	
Differential Output Voltage Amplitude	ΔV_{OUT}	400		800	mVp-p	
Input Logic Level High	V_{IH}	2.0		V_{CC}	V	
Input Logic Level Low	V_{IL}	0		0.8	V	

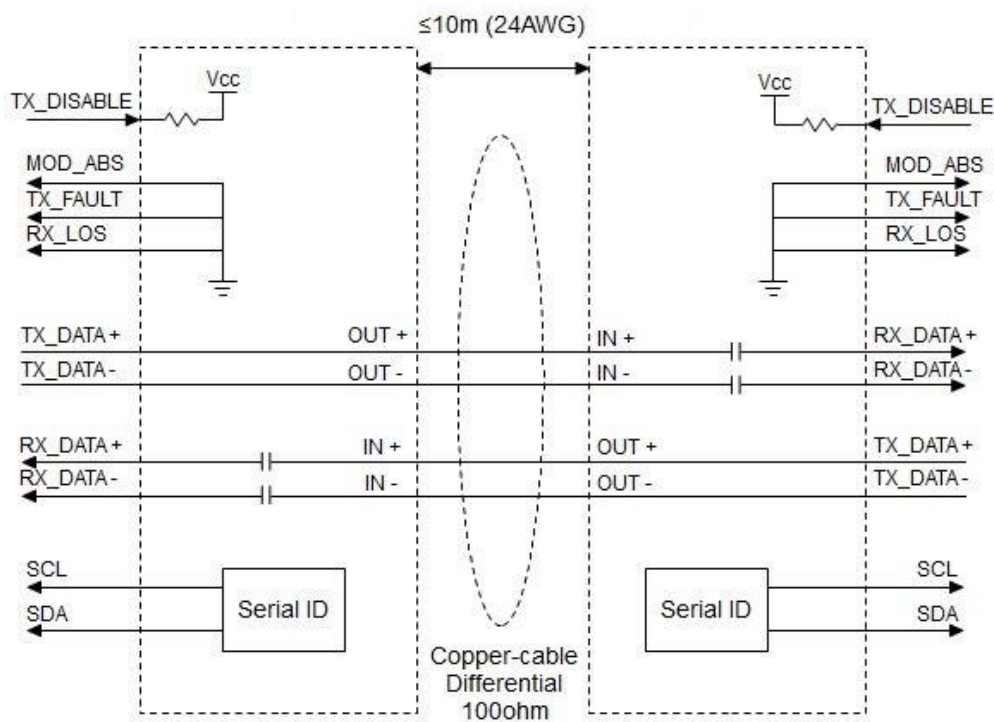
Optical Characteristics- Transmitter

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Optical Center Wavelength	λ_c	840	850	860	nm	
Average Optical Power	P	-6			dBm	
Rise / Fall Time	T_R / T_F			20	Ps	
Extinction Ratio	ER	3.5			dB	
Relative Intensity Noise	RIN			-128	dB/Hz	
Optical Return Loss Tolerance	TOL			12	dB	
Transmitter Reflectance	RT			-12	dB	

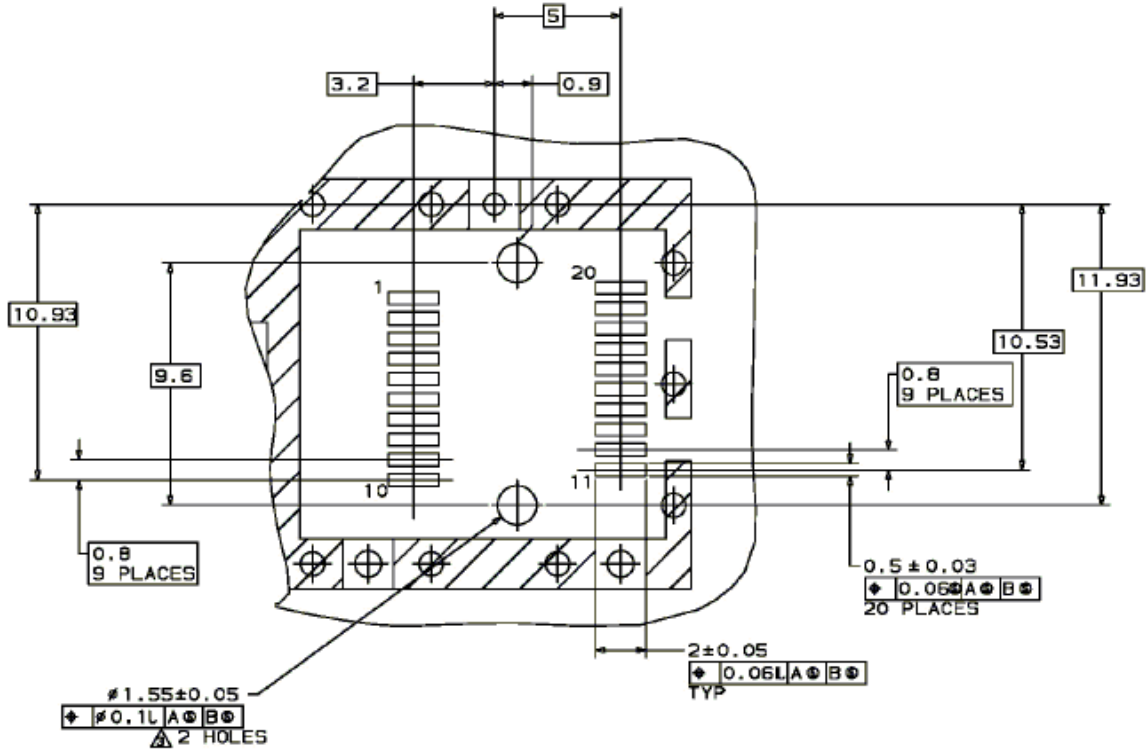
Optical Characteristics- Receiver

Parameter	Symbol	Min	Typ	Max	Unit	Remarks
Optical Center Wavelength	λ_c	840	850	860	nm	
Overload	OVL	2			dBm	Each Lane
Receiver Sensitivity in OMA	SEN			-8	dBm	Each Lane

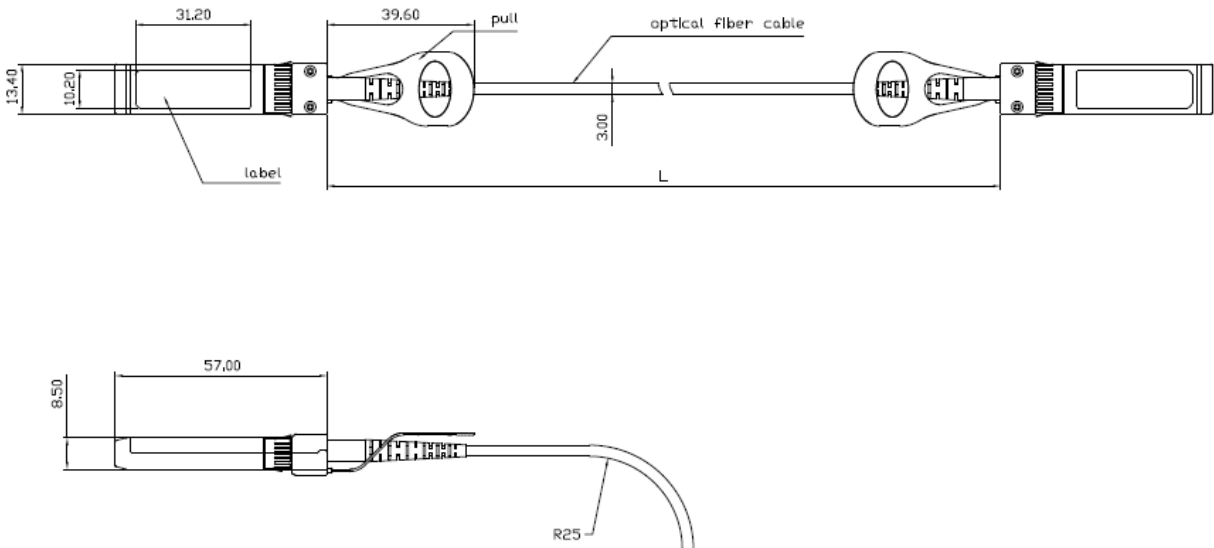
Block Diagram of Transceiver



PCB Layout Recommendation

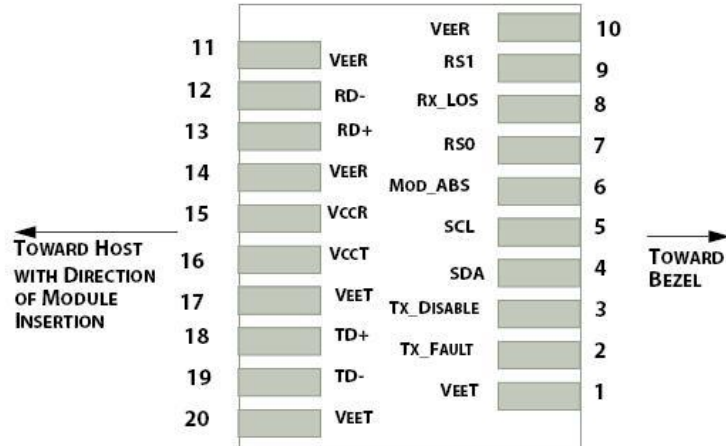


Dimensions



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

Electrical Pad Layout



Pin Assignment

PIN #	Symbol	Description	Remarks
1	VEET	Transmitter ground (common with receiver ground)	Circuit ground is isolated from chassis ground
2	TFAULT	Transmitter Fault	
3	TDIS	Transmitter Disable. Laser output disable on high or open	Disabled: TDIS>2V or open Enabled: TDIS<0.8V
4	SDA	Data line for serial ID	Should Be pulled up with 4.7k – 10k ohm on host board to a voltage between 2V and 3.6V
5	SCL	Clock line for serial ID	
6	MOD_ABS	Module Absent. Ground within the module	
7	RS0	No Connection required	
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation	LOS is open collector output
9	RS1	+3.3V Power Supply	Circuit ground is isolated from chassis ground
10	VEER	Receiver ground (common with transmitter ground)	
11	VEER	Receiver ground (common with transmitter ground)	
12	RD-	Receiver Inverted DATA out. AC coupled	
13	RD+	Receiver Non-inverted DATA out. AC coupled	
14	VEER	Receiver ground (common with transmitter ground)	Circuit ground is isolated from chassis ground
15	VCCR	Receiver power supply	
16	VCCT	Transmitter power supply	Same as Pin# 1
17	VEET	Transmitter ground (common with receiver ground)	Circuit ground is connected to chassis ground
18	TD+	Transmitter Non-inverted DATA out. AC coupled	
19	TD-	Transmitter Inverted DATA out. AC coupled	
20	VEET	Transmitter ground (common with receiver ground)	Circuit ground is connected to chassis ground