

25G SFP28 Active Optical Cables

SFP28 AOCs (Active Optical Cables) are two SFP28 optical transceivers with a fibre optic cable permanently embedded into each end. SFP28 is a speed enhanced variation of SFP+ which is targeted at enabling 25Gb/s to 28Gb/s applications, such as 25Gb/s Ethernet as well as high-speed servers and an ideal cable for Inter Rack Connection in data centres. This AOC is compliant with the SFF-8432 SFP28 MSA standards.



Features & Benefits

- 25Gbps & 10Gbps serial optical interface
- Rate adaptation
- Hot-pluggable SFP28 form factor
- 850nm VCSEL laser
- Wide operating temperature(0°C~70°C)
- 25G electrical interface
- Internal CDR on both transmitter and receiver channels
- RoHS-6 compliant

Application

- Inter Rack Connection
- High-speed servers
- Custom high-speed data pipes
- High-performance computing clusters
- SAN, Routers, Hubs, Load Balancer

Product Specifications

Absolute Maximum Ratings

Parameter	Symbol	Conditions	Min.	Max.	Unit
Storage temperature	Ts	-	-40	+85	°C
Relative humidity	RH	-	5	+85	%
Supply voltage	Vcc	-	0	3.6	V

Recommended Operating Conditions

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Case temperature	Tc	-	0	-	70	°C
Power supply voltage	Vcc	-	3.13	3.3	3.47	V
Signaling rate each channel	-	-	-	10.3125/25.78125	-	Gbps

Product Specifications

Electrical Characteristics (T=25 °C, unless noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Power consumption	Pc	-	-	-	1	W
Supply current	Icc	-	-	-	300	mA

Optical Characteristics

Transmitter Characteristics (T=25 °C, unless noted)

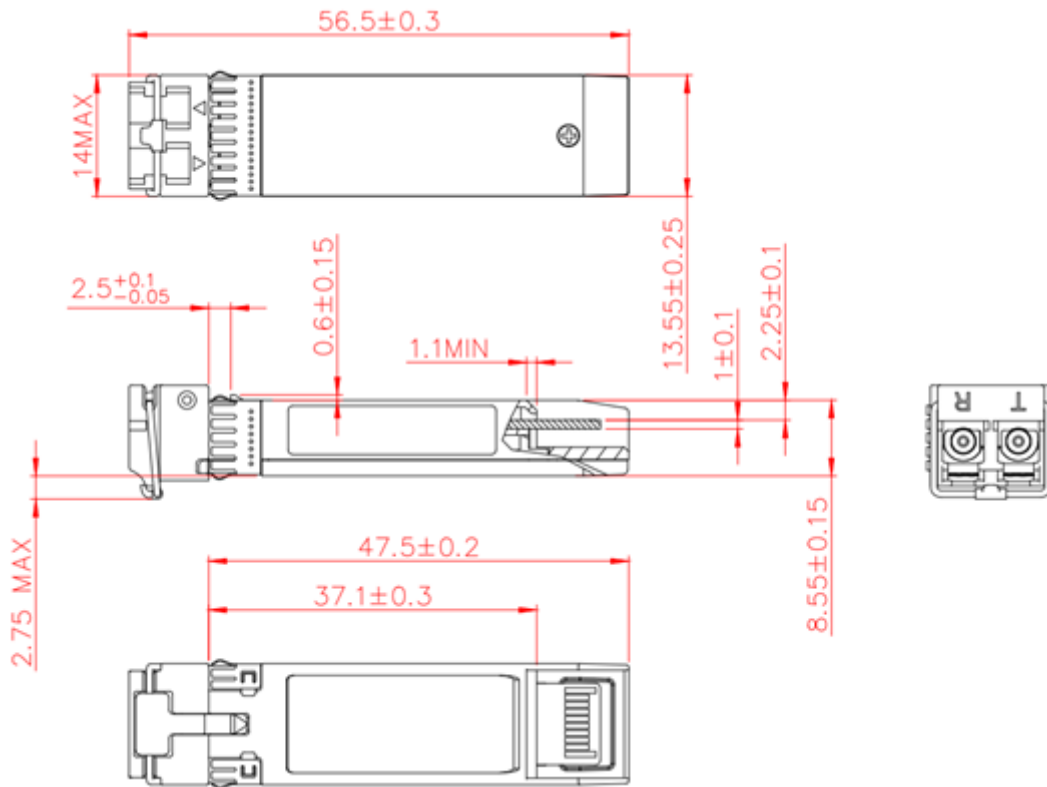
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Centre wavelength	λ_c	-	840	-	860	nm
RMS spectral width	Pm	-	-	-	0.6	nm
Average optical power	Pavg	-	-8.4	-	2.4	dBm
Optical modulation amplitude	OMA	-	-6.4	-	3	dBm
Average launch power of OFF transmitter	Poff	-	-	-	-30	dBm
Extinction ratio	ER	-	2	-	-	dB
Optical return loss tolerance	-	-	-	-	12	dB

Receiver Characteristics

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Centre wavelength	λ_c	-	840	850	860	nm
Damage threshold	-	-	3.4	-	-	dBm
Receive power overload	-	-	2.4	-	-	dBm
Receiver reflectance	-	-	-	-	-12	dB
Receiver sensitivity	SENS	-	-	-	-10	dBm
LOS Assert	LOSA	-	-30	-	-	dBm
LOS De-Assert	LOS ₀	-	-	-	-13	dBm
LOS Hysteresis	LOSH	-	0.5	-	-	dB

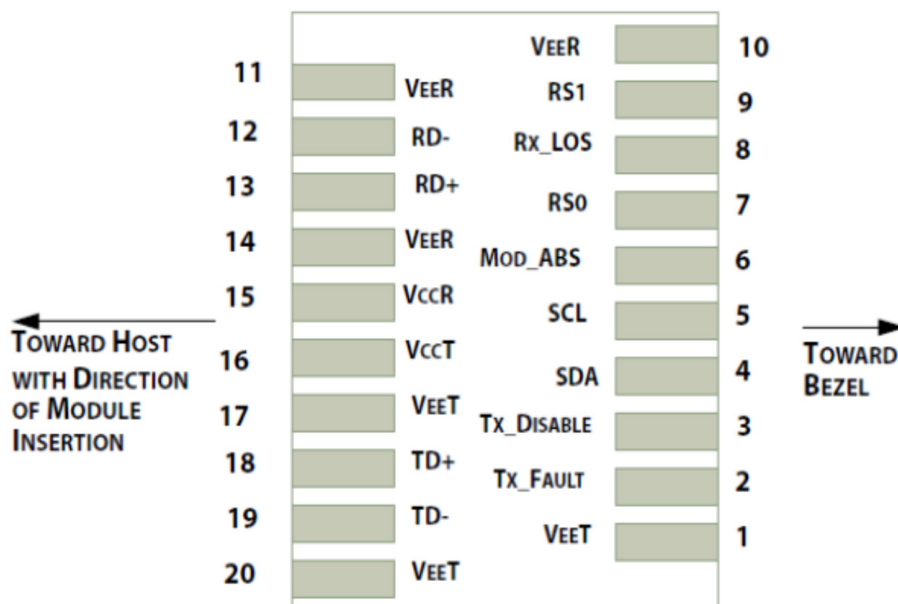
Mechanical Drawing

Fig 1: Package Outline



Pin Assignment

Fig 2: Electrical Pin-Out Details



Pin Definition Receiver Specifications

Pin	Logic	Symbol	Name/Description
1	-	VeeT	Module Transmitter Ground
2	CML-I	TX_Fault	Module Transmitter Fault
3	CML-I	TX_Dis	Transmitter Disable; Turn off transmitter laser output
4	-	SDA	2-wire Serial Interface Data Line
5	CML-I	SCL	2-Wire Serial Interface Clock
6	CML-I	MOD_DEF0	Module Definition, Grounded in the module
7	-	RSO	Receiver Rate Select
8	LVTTTL-I	RS_LOS	Receiver Loss of Signal Indication Active LOW
9	LVTTTL-I	RS1	Transmitter Rate Select (not used)
10	-	VeeR	Module Receiver Ground
11	LVCOMS-I/O	VeeR	Module Receiver Ground
12	VCOMS-I/O	RD-	Receiver Inverted Data Output
13	-	RD+	Receiver Data Output
14	CML-0	VeeR	Module Receiver Ground
15	CML-0	VccR	Module Receiver 3.3V Supply
16	-	VccT	Module Receiver 3.3V Supply
17	CML-0	Veet	Module Transmitter Ground
18	CML-0	TD+	Transmitter Non-Inverted Data Input
19	-	TD-	Transmitter Inverted Data Input
20	-	VeeT	Module Transmitter Ground