


---

## 10G SFP+ Active Optical Cables GSS-MDO100-XXXX

### Features

- ◆ Electrical interface compliant to SFF-8431
- ◆ Hot Pluggable
- ◆ 850nm VCSEL transmitter, PIN photo-detector receiver
- ◆ Up to 300m on OM3 MMF
- ◆ Operating case temperature: 0 to 70°C
- ◆ All-metal housing for superior EMI performance
- ◆ RoHS compliant (lead free) 

### Applications

- ◆ 10 Gigabit Ethernet
- ◆ 4G and 8G Fibre Channel Applications
- ◆ 1x InfiniBand QDR, DDR, SDR
- ◆ High-performance computing clusters
- ◆ Servers, switches, storage and host card adapters

### Description

SFP+ Active Optical Cables are direct-attach fiber assemblies with SFP+ connectors. They are suitable for very short distances and offer a cost-effective way to connect within racks and across adjacent racks. SFP+ Active Optical Cables's length is up to 300 meters on OM3 MMF.

### SFP+ AOC Specifications

Parameter	Description
Module Form Factor	SFP+ (Supports SFF8431/SFF8432/SFF8472)
Protocols Supported	InfiniBand, Ethernet, Fiber Channel
Channel Data Rate	Rate 1 to 10.3125Gbps
BER	$<10^{-12}$
Operating Case Temperature	0 to + 70°C
Storage Temperature	-20 to + 85°C
Supply Voltage	3.3V
Supply current	230mA per end typical

### Optical characteristics

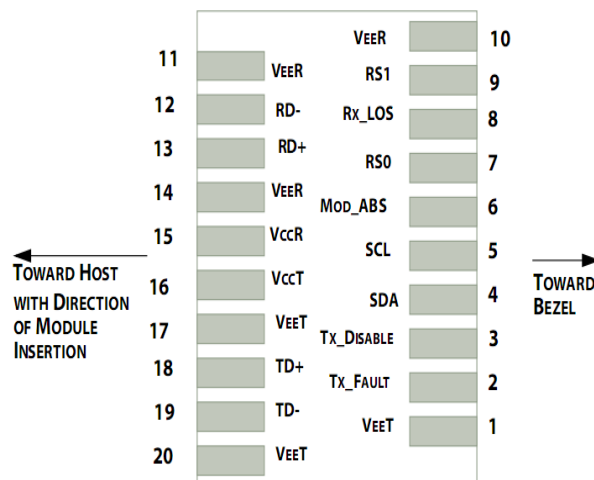
The following optical characteristics are defined over the Recommended Operating Environment unless otherwise specified.

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
<b>Transmitter</b>						
Center Wavelength	$\lambda_t$	840	850	860	nm	
RMS spectral width	$P_m$	-	-	Note 1	nm	
Average Optical Power	$P_{avg}$	-6.5	-	-1	dBm	2
Extinction Ratio	ER	3.5	-	-	dB	3
Transmitter Dispersion Penalty	TDP	-	-	3.9	dB	
Relative Intensity Noise	$R_{in}$	-	-	-128	dB/Hz	12dB reflection
Optical Return Loss Tolerance		-	-	12	dB	
<b>Receiver</b>						
Center Wavelength	$\lambda_r$	840	850	860	nm	
Receiver Sensitivity	$P_{sens}$	-	-	-11.1	dBm	4
Stressed Sensitivity in OMA		-	-	-7.5	dBm	4
Los function	Los	-30	-	-12	dBm	
Overload	$P_{in}$	-	-	-1.0	dBm	4
Receiver Reflectance		-	-	-12	dB	

**Note:**

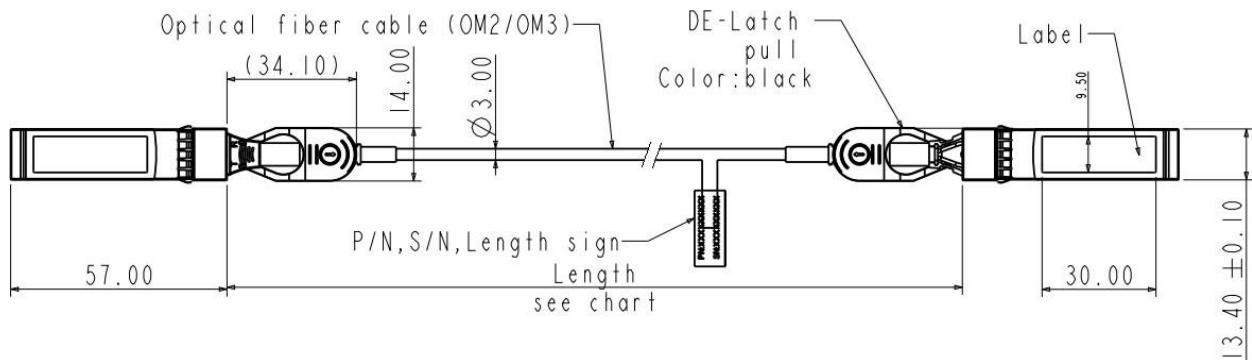
1. Trade-offs are available between spectral width, center wavelength and minimum OMA, as shown in table 6.
2. The optical power is launched into MMF
3. Measured with a PRBS 2<sup>31</sup>-1 test pattern @10.3125Gbps
4. Measured with a PRBS 2<sup>31</sup>-1 test pattern @10.3125Gbps, BER ≤ 10<sup>-12</sup>.

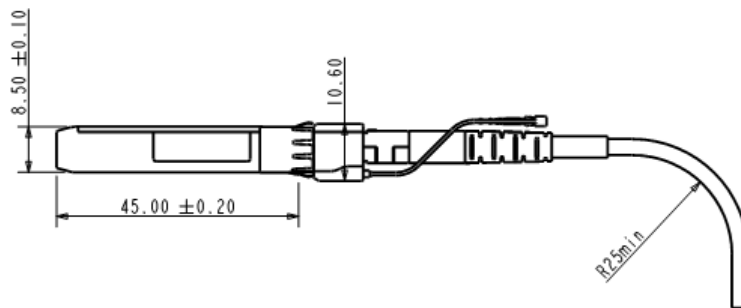
### Pin Descriptions



Pin out of Connector Block on Host Board

Pin	Symbol	Name/Description	NOTE
1	VEET	Transmitter Ground (Common with Receiver Ground)	1
2	TFAULT	Transmitter Fault.	2
3	TDIS	Transmitter Disable. Laser output disabled on high or open.	3
4	SDA	2-wire Serial Interface Data Line	4
5	SCL	2-wire Serial Interface Clock Line	4
6	MOD_ABS	Module Absent. Grounded within the module	4
7	RS0	Rate Select 0	5
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	6
9	RS1	No connection required	1
10	VEER	Receiver Ground (Common with Transmitter Ground)	1
11	VEER	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	VEER	Receiver Ground (Common with Transmitter Ground)	1
15	VCCR	Receiver Power Supply	
16	VCCT	Transmitter Power Supply	
17	VEET	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	VEET	Transmitter Ground (Common with Receiver Ground)	1





**Figure1. Mechanical Specifications**

**Important Notice**

Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by before they become applicable to any particular order or contract. In accordance with the policy of continuous improvement specifications may change without notice. The publication of information in this data sheet does not imply freedom from patent or other protective rights of others. Further details are available from any sales representative.

**Ordering information**

Part Number	Product Description
GSS-MDO100-001C	1 meter SFP+ Active Optical Cable
GSS-MDO100-002C	2 meter SFP+ Active Optical Cable
GSS-MDO100-003C	3 meter SFP+ Active Optical Cable
GSS-MDO100-005C	5 meter SFP+ Active Optical Cable
GSS-MDO100-007C	7 meter SFP+ Active Optical Cable
GSS-MDO100-010C	10 meter SFP+ Active Optical Cable
GSS-MDO100-0XXC	10G SFP+ Active Optical Cable up to 300m on OM3 MMF
xxx :001~100,1~300 Length in meters (OM3 fiber is available)	