



Features

- SFF-8432 Mechanical MSA
- 25G 850nm VCSEL transmitter
- 25G PIN photo-detector
- 2-wire interface for management specifications compliant with SFF 8472 digital diagnostic monitoring interface for optical transceivers
- Pre-terminated fiber cable
- Up to 70m/100m by active optical cable with OM3/OM4 fiber
- Operating environment temperature: 0 to 70°C
- SFP28 housing with enhanced EMI shielding
- 25G electrical interface (OIF CEI-28G-VSR)
- Maximum power consumption 1.0W each terminal
- Single 3.3V power supply
- RoHS compliant

Applications

- 25G Ethernet
- High capacity IO with SFP28 interface
- Data center and in-rack connection

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Units	Note
Power Supply Voltage	V _{CC}	0	3.6	V	
Storage Temperature	T _s	-40	85	°C	
Operating Case Temperature	T _c	0	70	°C	
Relative Humidity	RH	5	95	%	

Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Units	Note
Power Supply Voltage	V_{cc}	3.135	3.3	3.465	V	
Operating Case Temperature	T_C	0	25	70	°C	
Data Rate, each Lane			25.78125		Gb/s	
Data Rate Accuracy		-100		100	ppm	
Control Input Voltage High		2		V_{cc}	V	
Control Input Voltage Low		0		0.8	V	
Fiber Bend Radius	R_{bend}	3			cm	

Electrical Characteristics – Transmitter

Parameter	Test point	Min.	Typical	Max.	Units	Note
Power Consumption				1.0	W	1
Supply Current	I_{cc}			300	mA	1
Overload Differential Voltage pk-pk	$TP1a$	900			mV	
Common Mode Voltage (V_{cm})	$TP1$	-350		2850	mV	2
Differential Termination Resistance Mismatch	$TP1$			10	%	At 1MHz
Differential Return Loss (SDD11)	$TP1$			See CEI-28G-VSR Equation 13-19	dB	
Common Mode to Differential conversion and Differential to Common Mode conversion (SDC11, SCD11)	$TP1$			See CEI-28G-VSR Equation 13-20	dB	
Stressed Input Test	$TP1a$		See CEI-28G-VSR Section 13.3.11.2.1			

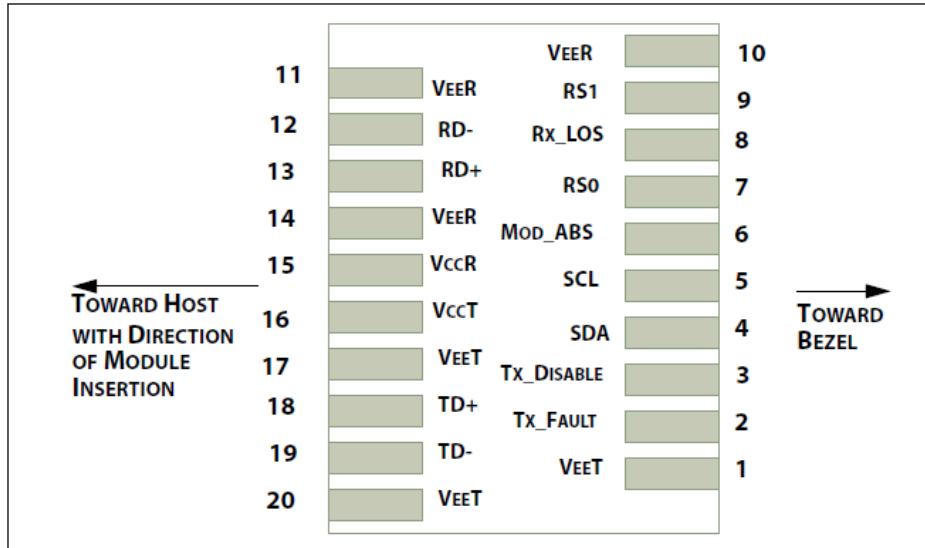
Electrical Characteristics – Receiver

Parameter	Symbol	Min.	Typical	Max.	Units	Note
Differential Voltage, pk-pk	TP4			900	mV	
Common Mode Voltage (Vcm)	TP4	-350		2850	mV	2
Common Mode Noise, RMS	TP4			17.5	mV	
Differential Termination Resistance Mismatch	TP4			10	%	At 1MHz
Differential Return Loss (SDD22)	TP4			See CEI-28G-VSR Equation 13-19	dB	
Common Mode to Differential conversion and Differential to Common Mode conversion (SDC22, SCD22)	TP4			See CEI-28G-VSR Equation 13-21	dB	
Common Mode Return Loss (SCC22)	TP4			-2	dB	3
Transition Time, 20 to 80%	TP4	9.5			Ps	
Vertical Eye Closure (VEC)	TP4			5.5	dB	
Eye Width at 10 ⁻¹⁵ probability (EW15)	TP4	0.57			UI	
Eye Height at 10 ⁻¹⁵ probability (EH15)	TP4	228		mV		

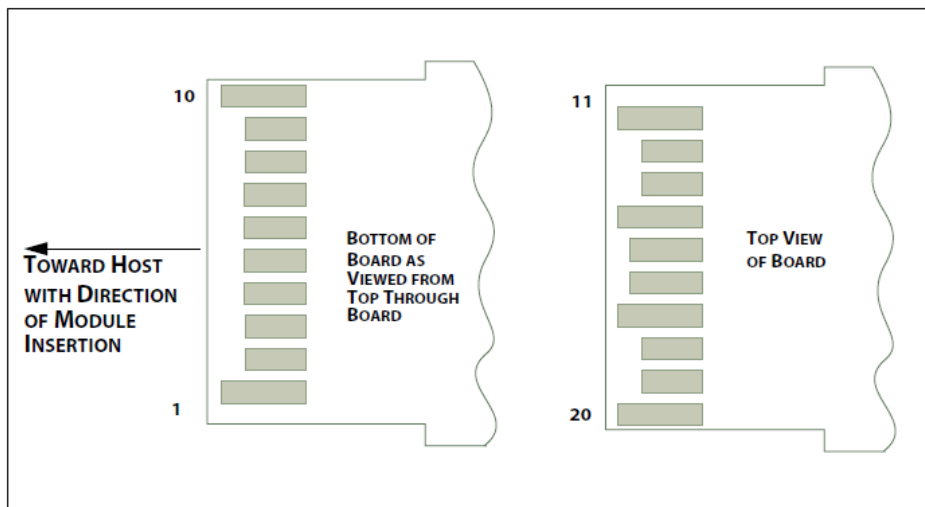
Notes:

1. Per terminal.
2. Vcm is generated by the host. Specification includes effects of ground offset voltage.
3. From 250MHz to 30GHz.

Pin Assignment



Interface to Host



Contact Assignment

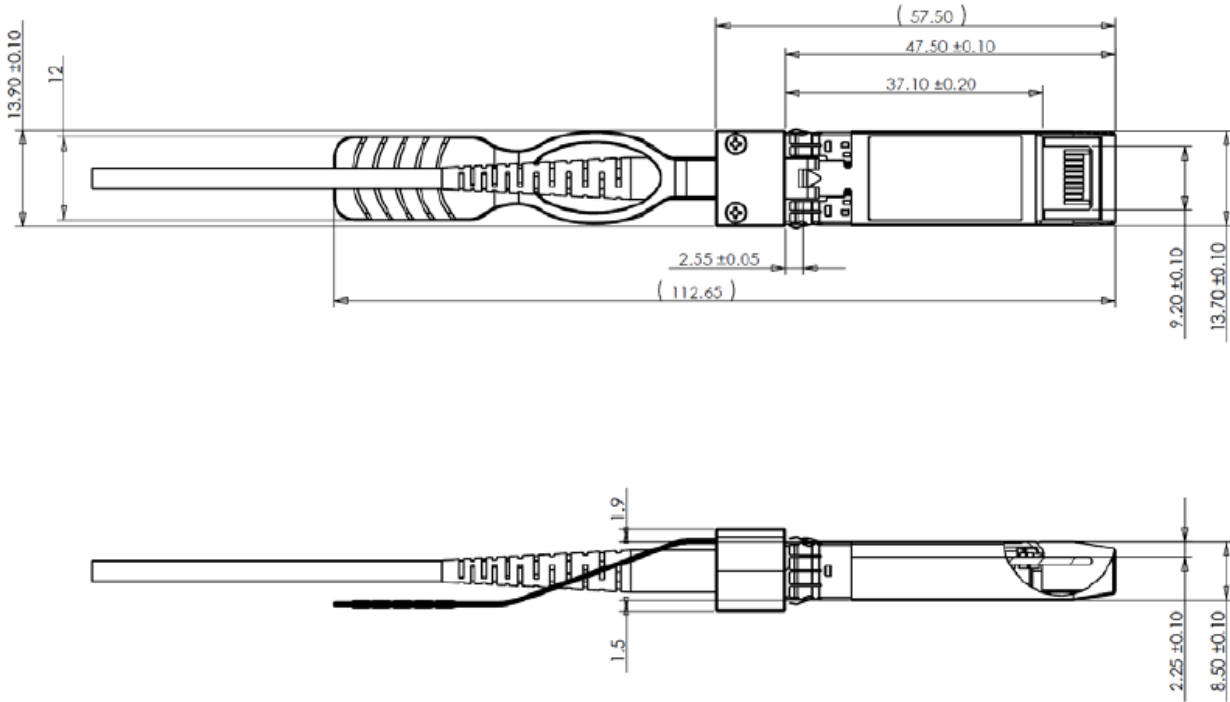
Pin Description

Pin	Logic	Symbol	Description	Note
1		VeeT	Module Transmitter Ground	1
2	LVTTL-O	TX_Fault	Module Transmitter Fault	
3	LVTTL-I	TX_Dis	Transmitter Disable; Turns off transmitter laser output	
4	LVTTL-I/O	SDA	2-Wire Serial Interface Data Line	2
5	LVTTL-I	SCL	2-Wire Serial Interface Clock	2
6		MOD-DEF0	Module Definition, Grounded in the module	
7	LVTTL-I	RS0	No connection required	
8	LVTTL-O	RX-LOS	Receiver Loss of Signal Indication. Logic 0 indicates normal operation	
9	LVTTL-I	RS1	No connection required	
10		VeeR	Module Receiver Ground	1
11		VeeR	Module Receiver Ground	1
12	CML-O	RD-	Receiver Inverted Data Output	
13	CML-O	RD+	Receiver Data Output	
14		VeeR	Module Receiver Ground	1
15		VccR	Module Receiver 3.3 V Supply	
16		VccT	Module Receiver 3.3 V Supply	
17		VeeT	Module Transmitter Ground	1
18	CML-I	TD+	Transmitter Non-Inverted Data Input	
19	CML-I	TD-	Transmitter Inverted Data Input	
20		VeeT	Module Transmitter Ground	1

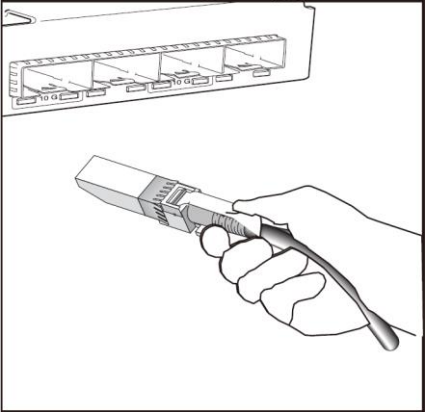
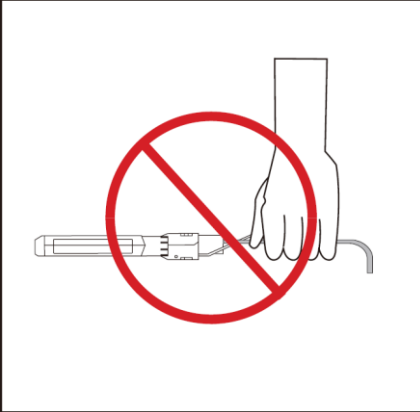
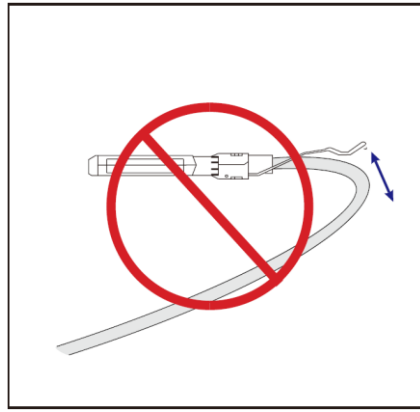
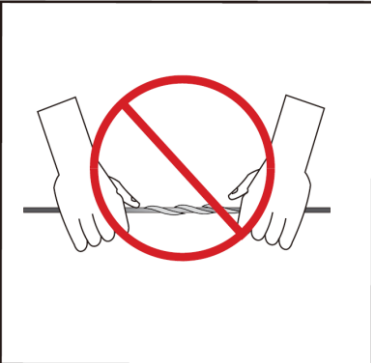

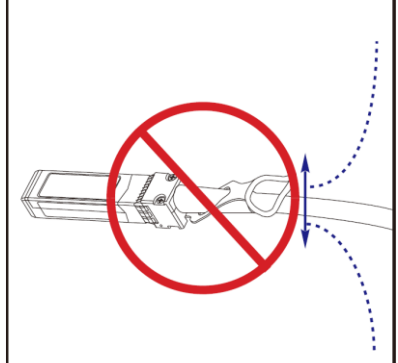
Notes:

1. Module ground pins GND are isolated from the module case.
2. Shall be pulled up with 4.7K-10Kohms to a voltage between 3.15V and 3.45V on the host board.

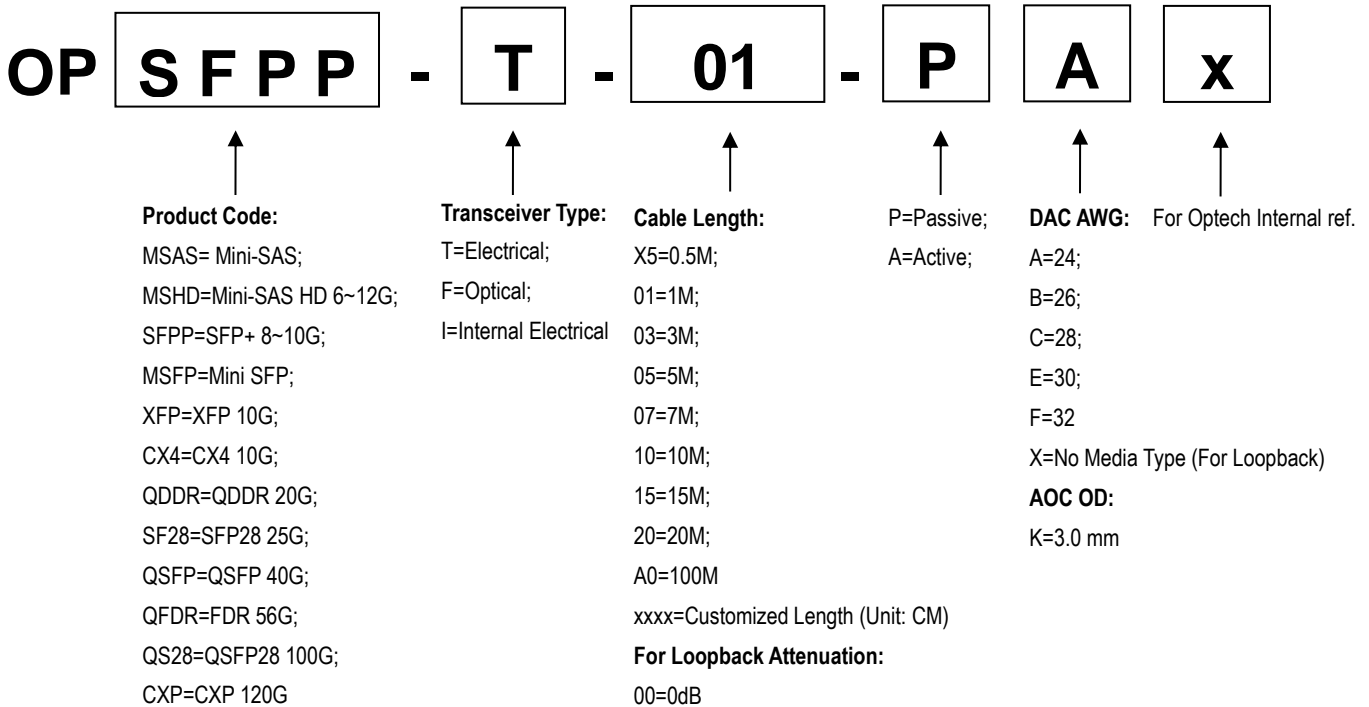
Dimensions



Important Notice

		
<p>Holding the SFP+ connector by its sides, insert the connector into the port on the switch</p>	<p>Do not handle by cable</p>	<p>DO NOT Over-bend the cable behind the connector</p>
		
<p>DO NOT twist the cable</p>	<p>DO NOT kink the cable</p>	<p>DO NOT bend up and down the cable</p>

Ordering Information



Part Number	Model Number	Length (M)	Voltage	Temperature
OPSF28-F-03-AKT	Active Optical Cable	3	3.3V	0°C ~ 70°C
OPSF28-F-05-AKT	Active Optical Cable	5	3.3V	0°C ~ 70°C
OPSF28-F-10-AKT	Active Optical Cable	10	3.3V	0°C ~ 70°C
OPSF28-F-50-AKT	Active Optical Cable	50	3.3V	0°C ~ 70°C
OPSF28-F-70-AKT	Active Optical Cable	70	3.3V	0°C ~ 70°C

Note: All information contained in this document is subject to change without notice.