



**Features**

- Compliant with SFF-8431 MSA
- Compliant with SONET, SDH, GBE, FC
- Support 10Gb/s total data rate
- Hot Pluggable MSA foot print
- Temperature range from 0°C to 80°C
- MSA Compliant EEPROM

**Applications**

- Loopback testing of 1G/10G Ethernet SFP+host ports
- Loopback testing of 1.25G, 2.125G, 4.25G, 8.5G, 10G FC host ports

**Recommended Operating Conditions**

Parameter	Symbol	Min.	Max.	Units	Note
Storage Temperature	Tstg	-40	85	°C	
Supply Voltage	V <sub>cc</sub>		6	V	V <sub>cc</sub> -ground
Data DC Voltage	V <sub>offset</sub>	-10	10	V <sub>pk</sub>	V (Tx+,Tx-,Rx+, Rx-) to ground

**Module Specifications - Recommended Operating Conditions**

Parameter	Symbol	Min.	Typ.	Max.	Units	Note
Ambient Operating Temperature	T <sub>a</sub>	0		80	°C	
Supply Voltage	V <sub>cc</sub>	3.13	3.3	3.47	V <sub>dc</sub>	
Baud Rate	BRate		10.5		Gbps	

### Electrical Characteristics

Parameter	Symbol	Min	Type	Max	Units	Notes
Supply Current	I <sub>surge</sub>	-	-	30	mA	Surge above steady state value
Supply Current – Serial ID write	I <sub>ccW</sub>		2	30	mA	For Serial ID option only
Supply Current – Serial ID read	I <sub>ccR</sub>		0.4	10	mA	

### Data Path

Parameter	Symbol	Min	Type	Max	Units	Notes
Impedance			100		ohms	Differential Impedance
Internal Attenuation Options			0		dB	

**Pin Assignment**

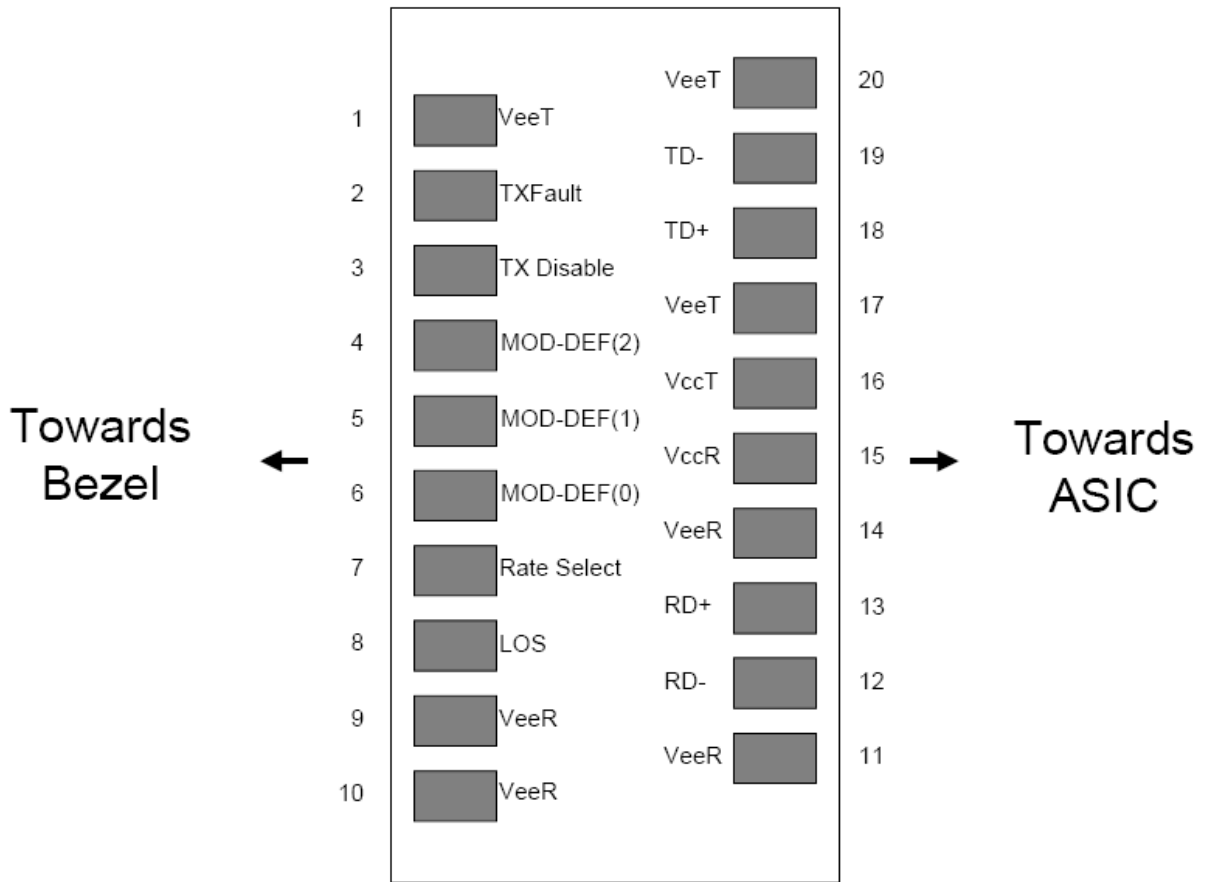
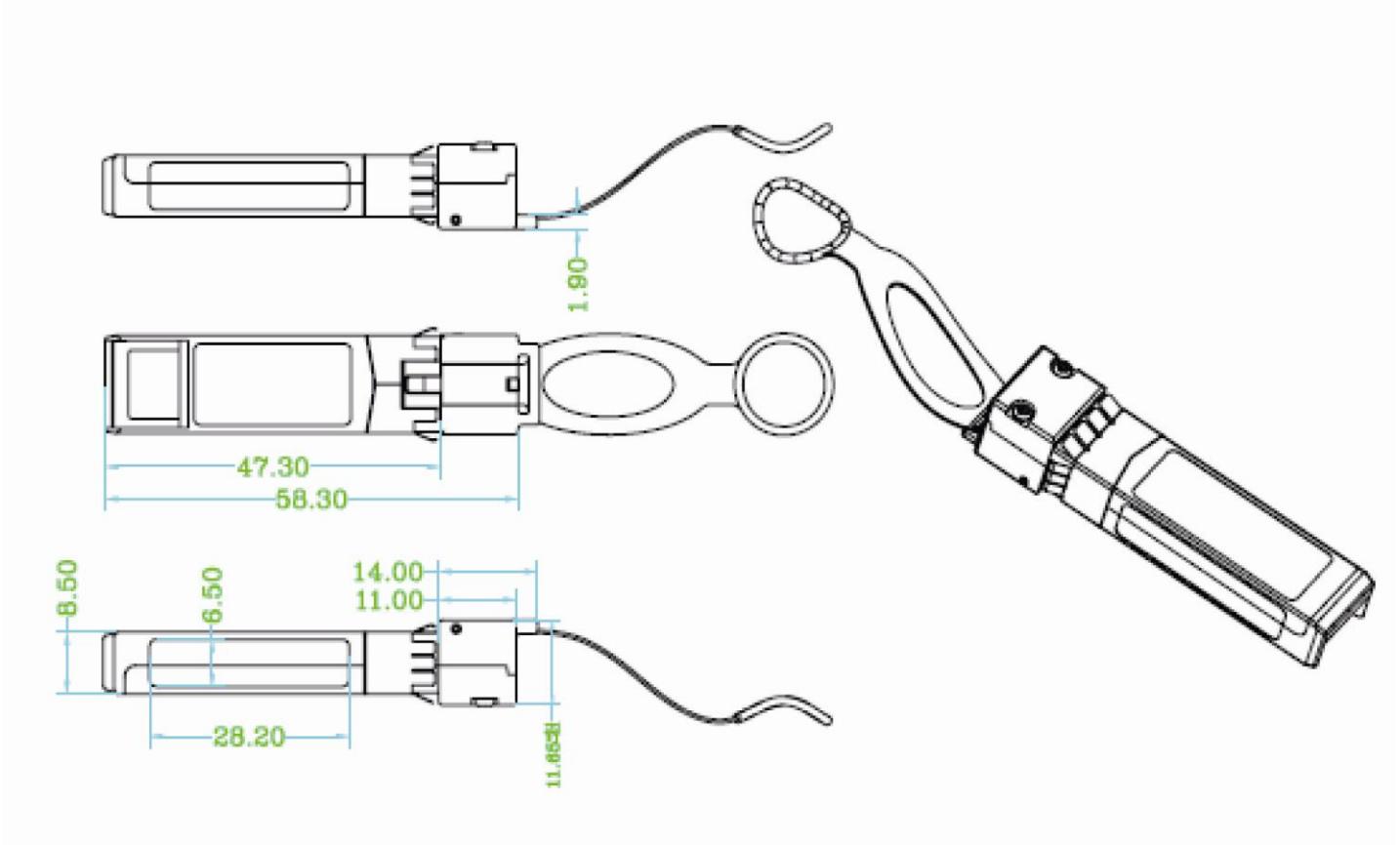


Figure 1: MSA Compliant connector

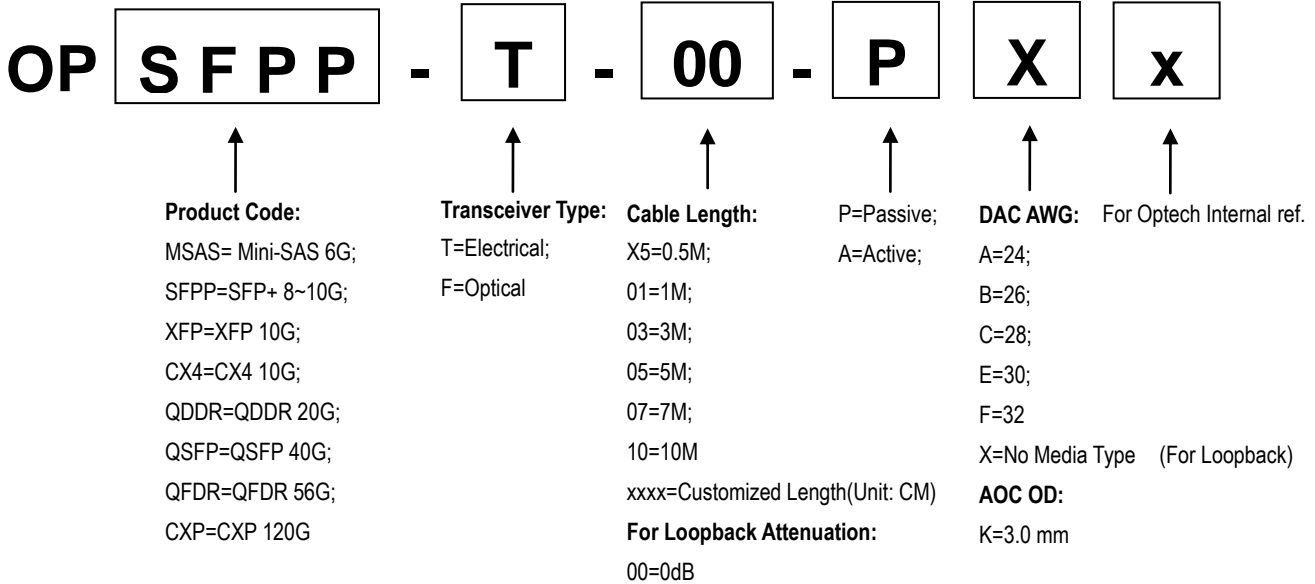
## Pin Descriptions

Pin	Name	Description
1	TGND	Transmit ground
2	TX_FAULT	Internally tied to Transmit ground. TX_FAULT is not implemented.
3	TX_DISABLE	Internally pulled up to Vcc through a 5.11k ohm resistor. TX_DISABLE is not implemented.
4	MOD_DEF(2)	Signal SDA (Data) of the 2-wire serial ID interface
5	MOD_DEF(1)	Signal SCL (Clock) of the 2-wire serial ID interface
6	MOD_DEF(0)	This pin is internally tied to Transmit ground
7	Rate Select	Pin is internally pulled low through a 33.2k resistor. Rate Select is not implemented.
8	LOS	Internally tied to Receiver Ground. LOS is not implemented.
9	RGND	Receiver ground
10	RGND	Receiver ground
11	RGND	Receiver ground
12	RD-	Differential receiver outputs. User to terminate to 100 ohms differential at SERDES.
13	RD+	Differential receiver outputs. User to terminate to 100 ohms differential at SERDES.
14	RGND	Receiver ground
15	VCCR	Not used.
16	VCCT	EEPROM power
17	TGND	Transmit ground
18	TD+	Differential transmitter inputs. Internally terminated to 10 ohms differential.
19	TD-	Differential transmitter inputs. Internally terminated to 10 ohms differential.
20	TGND	Transmit ground

**Dimensions**



**Ordering Information**



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