

Features

- SFP28 MSA Compliant, Backward compatible with 10G SFP+
- Enables system communication over I2C bus
- Dual LED indicator to display module status
- Built-in digital diagnostic functions
- Case Temperature range from -20 °C to 85 °C
- Compliant with SONET, SDH, GBE, FC
- Adjustable Power Consumption in Different Option
- Over-Heating Protect circuit
- Test Counting available by Firmware setting

Applications

- Board and System Level Testing
- Test and Measurement
- Switch and Router chamber testing
- Loopback testing of 25G Ethernet SFP28 host ports
- 100Mb/s to 25.78125 Gbps

Recommended Operating Conditions

Parameter	Symbol	Min	Typ.	Max	Units	Notes
Storage Temperature	Tstg	-40		85	°C	
Supply Voltage	Vcc			6.00	V	Vcc-ground
Data DC Voltage	Voffset	-10		10	Vpk	V (Tx+, Tx-, Rx+, Rx-) to ground

Module Specifications - Recommended Operating Conditions

Parameter	Symbol	Min	Typ.	Max	Units	Notes
Ambient Operating Temperature	Ta	-20		85	°C	
Supply Voltage	Vcc	3.15	3.3	3.45	Vdc	
Baud Rate	BRate	0.1		10.5	Gpbs	

Electrical Characteristics

Parameter	Symbol	Min	Typ.	Max	Units	Notes
Bit Error Rate	BER			1E-12		
Supply Current - Serial ID write	IccW		2	30	mA	For Serial ID option only
Supply Current -- Serial ID read	IccR		0.4	10	mA	
Surge Current	I _{surge}			30	mA	Surge above steady state value

Memory Location Descriptions

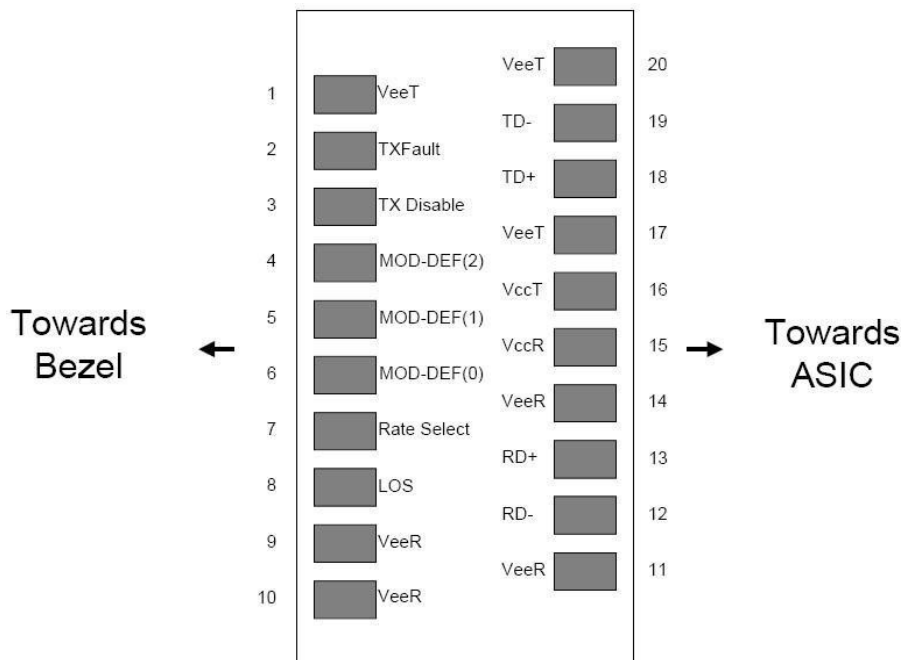
2-Wire Serial Address: 1010000x

0	ID and status (3 Bytes)	128	Base ID Fields (64 Bytes)
2		191	
21	Interrupt Flags (19 Bytes)	223	Extended ID (32 Bytes)
33	Module Monitors (12 Bytes)	255	Vender Specific ID (32 Bytes)
81	Channel Monitors (48 Bytes)		
85	Reserved (4 Bytes)		
97	Control (12 Bytes)		
99	Reserved (2 Bytes)		
106	Free Side Device and Channel Mask (7 Bytes)		
107	Reserved (1 Bytes)		
111	Free Side Device Properties (4 Bytes)		
118	Reserved (7 Bytes)		
122	Password Change Entry Area (Optional) (4 Bytes)		
126	Password Entry Area (Optional) (4 Bytes)		
127	Page Select Byte (1 Bytes)		

Operating Conditions

Parameter	Symbol	Notes	Min	Max	Unit
Maximum Supply Voltage	V _{cc}		-0.5	4.0	V
Storage Temperature	T _s		-40	85	C
Case Operating Temperature	T _{op}		-40	85	C
Supply Voltage	V _{cc}		3.15	3.45	V
Supply Current	I _{cc}	1		300	mA
Supply Current Power-Down	I _{ccD}	1		200	mA
Bit Error Rate	BER	2	100M	10.5G	Bps
Bit Error Ratio	BER			1.00E-12	

Pin Assignment



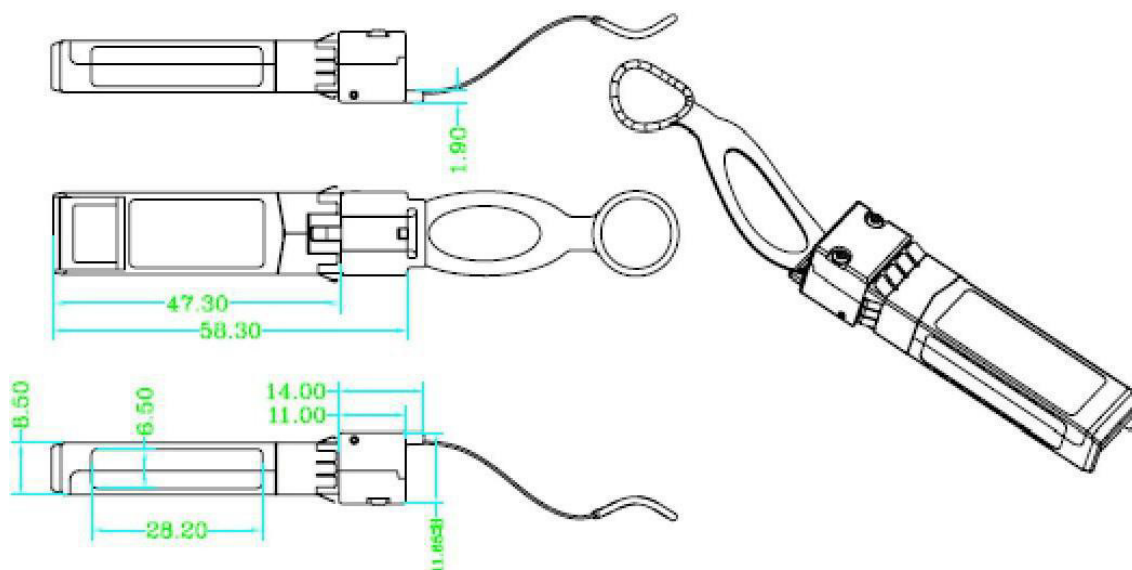
MSA Compliant connector

Pin Descriptions

Pin Function Definition

Pin	Logic	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
13	RD+	Differential receiver outputs. User to terminate to 100 ohms differential
14	RGND	Receiver Ground
15	VCCR	Not Used.
16	VCCT	EEPROM Power
17	TGND	Transmit Ground
18	TD+	Differential transmitter inputs. Internally terminated to 100 ohms differential.
19	TD-	Differential transmitter inputs. Internally terminated to 100 ohms differential.
20	TGND	Transmit Ground

Dimensions



Detail Features

- 1) Voltage Reading: I2C address, A2h-62h 63h, same as SFP AOC DDM rule.
- 2) Temp Reading: I2C address, A2h- 60h 61h, same as SFP AOC DDM rule.
- 3) Testing Plug times setting: I2C address, A0h- 64h 65h. (default=3000 times, 64h65h=0BB8h)
- 4) You can read the testing cycle times from A0h- 66h 67h, it will add automatically in every plug-in-out. And when up to Max setting, the LED will turn to Yellow color
- 5) Over Heat prorection: when Temp over 85 degree, LED will turn to RED, and Temp down below 85 degree, LED will be Green.
- 6) Power Consumption setting: I2C address, A0h- 70h, please setting as below function, $xxW = ((255-x)/255) * 0.99 * 3.3V$
- 7) You can set what the Power consumption at address A0h- 70h, 1.2W=A0h, 1.8W=8Ah, 2.0W=60h.....

PS: Default LED color is Green/Red

