

BO-SFP28-SR

Серия SFP28

BO-SFP28-SR

SFP28 25Gb/s 850nm 100mTransceiver

Features

- ◆ Specifications compliant with SFF-8472
- ◆ Up to 25.78Gbps Data Links, Support 10Gbps Data Links
- ◆ Support 25G/10G Auto-Switch
- ◆ 100m over MMF (50/125 um OM4)
- ◆ 70m over MMF (50/125um OM3)
- ◆ VCSEL Laser and PIN receiver
- ◆ Single 3.3V power supply
- ◆ Case operating temperature
 - Commercial: 0°C to +70°C
 - Industrial: -40°C to +85°C
- ◆ Power Consumption : < 1.2 W
- ◆ RoHS compliant



Applications

- ◆ 10G/25GBASE-SR
- ◆ eCPRI and CPRI

Ordering information

Part. No	Media	Wavelength (nm)	Transmission Distance(m)	CaseTemperature (°C)	Data Rate (Gbps)
BO-SFP28-SR	MMF	850	70(OM3) 100(OM4)	0~70	10.3125/25.78
BO-SFP28-SR-I	MMF	850	70(OM3) 100(OM4)	-40~85	10.3125/25.78

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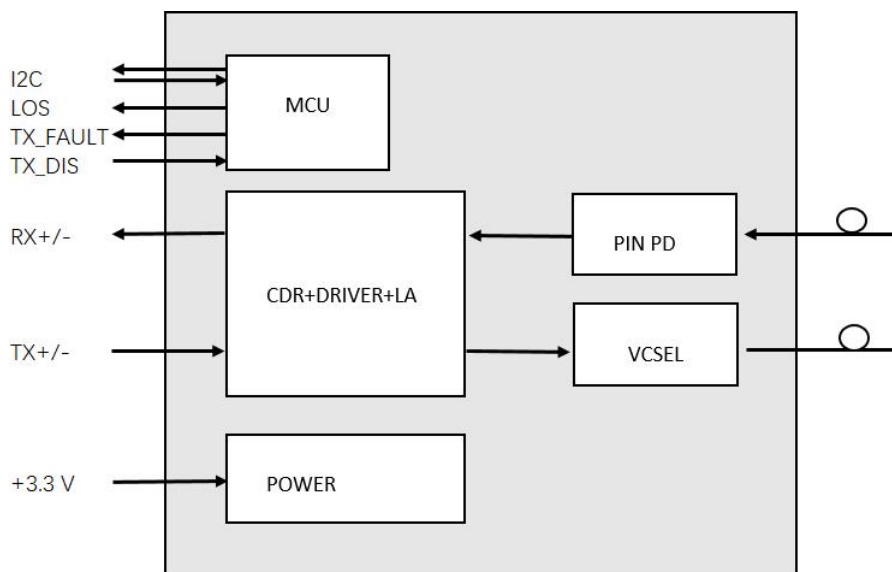
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Description

BO-SFP28-SR Small Form Factor Pluggable (SFP) transceivers are compatible with the Small Form Factor Pluggable Multi-Sourcing Agreement (MSA). The transceiver consists of five sections: the VCSEL driver, the limiting amplifier, the digital diagnostic monitor, the VCSEL laser and the PIN photo-detector. The module data link up to 100M in OM4 Multi-Mode Fiber.

The optical output can be disabled by a TTL logic high-level input of Tx Disable. Tx Fault is provided to indicate that degradation of the laser. Loss of signal (LOS) output is provided to indicate the loss of an input optical signal of receiver or the link status with partner.

Functional Diagram



Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Storage Temperature	TS	-40		85	°C	
Relative Humidity	RH	5		95	%	
Power Supply Voltage	VCC	-0.3		4	V	
Signal Input Voltage		VCC -0.3		VCC +0.3	V	
Rx Damage Threshold		3			dBm	

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Case Operating Temperature		0		70	°C	BO-SFP28-SR

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	TC	-40		85	°C	BO-SFP28-SR-I
Power Supply Voltage	VCC	3.14	3.3	3.47	V	
Power Supply Current	ICC			300	mA	BO-SFP28-SR
				360	mA	BO-SFP28-SR-I
Data Rate	BR		25.78		Gbps	
Transmission Distance	TD		100		m	OM4 MMF
			70		m	OM3 MMF

Optical Characteristics

Parameter	Symbol	Unit	Min	Typ	Max	Notes
Transmitter						
Center Wavelength	λ	nm	840	850	860	
RMS Spectral Width		nm		0.6		
Average Launched Power	PO	dBm	-8.4		2.4	
Optical modulation amplitude(OMA)	OMA	dBm	-6.4		3	
Extinction ratio	ER	dB	2			
Average Launch Power of OFF Transmitter	POFF	dBm			-30	
Optical return loss tolerance		dB			12	
Transmitter eye mask {X1, X2, X3, Y1, Y2, Y3}			{0.3,0.38,0.45,0.35,0.41,0.5}			1
Receiver						
Wavelength Range	λ	nm	840		860	
Overload Input Optical Power	PSAT	dBm	2.4			BER=5E-5
Average Receive Power	PIN	dBm	-10.3		2.4	2

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Rx Sensitivity@25.78 Gb/s(OMA)	PSEN	dBm			-10	BER=5E-5
Recevier Reflectance		dB			-12	
LOS Assert	LOSA	dBm	-30			
LOS De-assert	LOSD	dBm			-11	
LOS Detect Hysteresis	LOSH	dBm	0.5		6	

Notes:

1.Hit Ratio 1.5×10^{-3} hits/sample.

2.Minimum value is informative only and not the principal indicator of signal strength.

Electrical Interface Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Transmitter						
Input differential impedance	RIN		100		Ω	1
Single ended data input swing	VIN-PP	180		700	mV	
Transmitter Fault Output-High	VFAULT-H	2		VCC+0.3	V	
Transmitter Fault Output-Low	VFAULT-L	0		0.8	V	
Transmitter Disable Voltage- High	VDIS	2		VCC+0.3	V	
Transmitter Disable Voltage- low	VEN	0		0.8	V	
Receiver						
Differential data output swing	VOUT-PP	300		850	mV	2
LOS Output Voltage-High	VLOS-H	2		VCC +0.3	V	
LOS Output Voltage-Low	VLOS-L	0		0.8	V	

Notes:

1.Connected directly to TX data input pins. AC coupled thereafter.

2.Into 100 ohms differential termination.

Pin Description

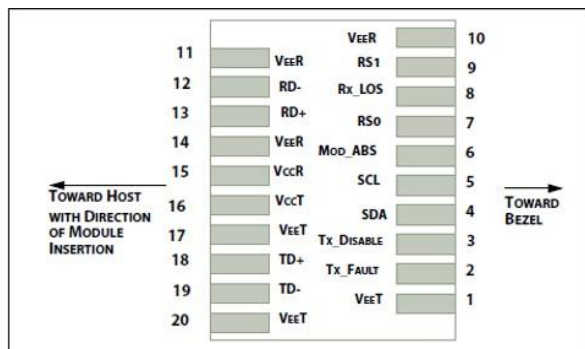


Figure 1 Host PCB SFP+ pad assignment top view

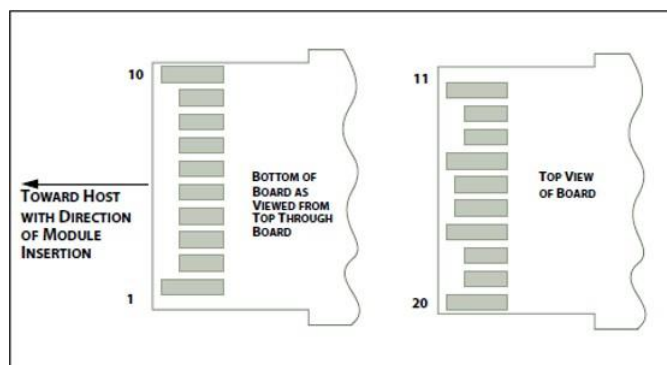


Figure 2 SFP+ module contact assignment

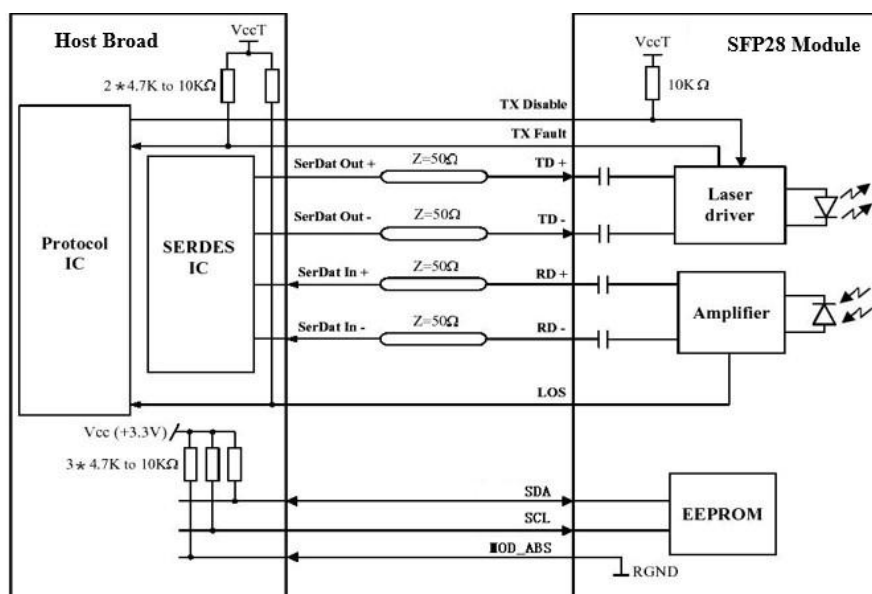
Pin	Symbol	Name/Description	NOTE
1	VEET	Transmitter Ground (Common with Receiver Ground)	1
2	T FAULT	Transmitter Fault.	2
3	T DIS	Transmitter Disable. Laser output disabled on high or open.	3
4	SDA	2-wire Serial Interface Data Line	4
5	SCL	2-wire Serial Interface Clock Line	4
6	MOD_ABS	Module Absent. Grounded within the module	4
7	RS0	Rate Select 0, internal pull down	5
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation.	6
9	RS1	Rate Select 1, internal pull down	5
10	V EER	Receiver Ground (Common with Transmitter Ground)	1
11	V EER	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	V EER	Receiver Ground (Common with Transmitter Ground)	1
15	V CCR	Receiver Power Supply	
16	V CCT	Transmitter Power Supply	
17	V EET	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	V EET	Transmitter Ground (Common with Receiver Ground)	1

Notes:

- 1.Circuit ground is internally isolated from chassis ground.
- 2.TFAULT is an open collector/drain output, which should be pulled up with a 4.7k – 10k Ohms resistor on the host board if intended for use. Pull up voltage should be between 2.0V to Vcc + 0.3V.A high output indicates a transmitter fault caused by either the TX bias current or the TX output power exceeding the preset alarm thresholds. A low output indicates normal operation. In the low state, the output is pulled to <0.8V.
- 3.Laser output disabled on TDIS>2.0V or open, enabled on TDIS<0.8V.
- 4.Should be pulled up with 4.7kΩ- 10kΩ host board to a voltage between 2.0V and 3.6V. MOD_ABS pulls line low to indicate module is plugged in.
- 5.Internally pulled down per SFF-8431 Rev 4.1.
- 6.LOS is open collector output. It should be pulled up with 4.7kΩ – 10kΩ on host board to a voltage between 2.0V and 3.6V. Logic 0 indicates normal operation; logic 1 indicates loss of signal.

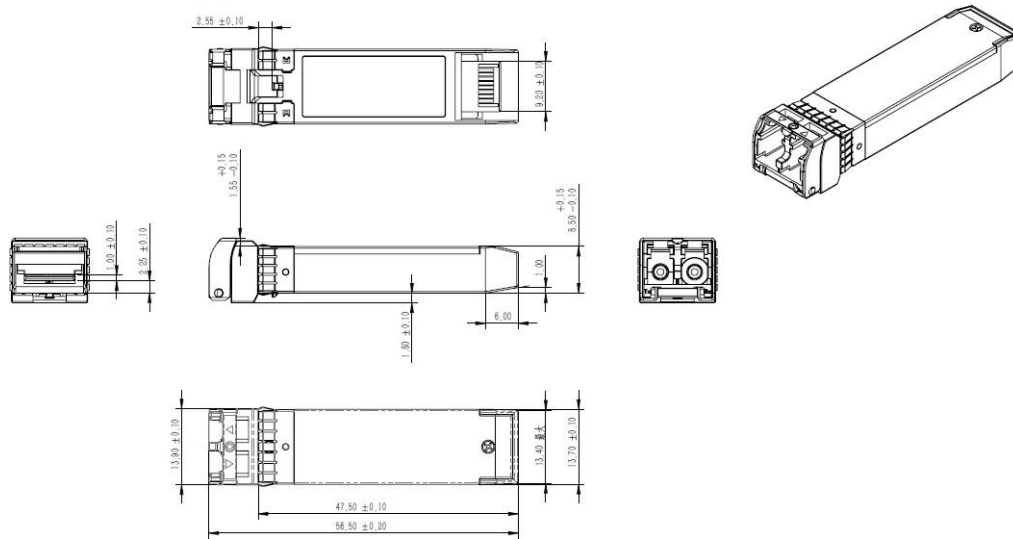
Recommended Interface Circuit



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Outline Dimensions



Unit: mm

GUARANTEE:

1 year

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