

GJS3L0C31

SFP28 25G 1310nm 10km DDM GJS3L0C31

Features

- Up to 24.33Gb/s for CPRI
- Up to 25.78Gb/s for bi-directional data links
- Electrical interface specifications per SFF-8431
- Management interface specifications per SFF-8432 and SFF-8472
- Build-in dual CDR with shut off control
- SFP28 MSA package with duplex LC connector
- Uncooled 1310nm DFB Laser
- Up to 10 km on 9/125um SMF
- Single +3.3V power supply
- Class 1 laser safety certified
- 1.0W maximum power consumption with established link
- Operating temperature Options:
YV0D-C03: 0°C to 70°C;
YV0D-I03: -40°C to 85°C
- RoHS Compliant

Applications

- High speed storage area networks
- 25G high speed interconnection
- 24.33G CPRI

Description

SYSP8A10D SFP28 transceivers, according to 25 Gigabit Small Form Factor Pluggable “SFP28” Multi-Sourcing Agreement (MSA) SFF-8431 Rev.

4.1 and SFF-8472 Rev. 12.1, are designed for use up to 25.78Gb/s data rate and up to 10km link length. They are compatible with SFF-8432.

Specification

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T _S	-40	+85	°C
Supply Voltage	V _{CC3}	-0.5	4.0	V
Relative Humidity(Non-condensing)	RH	5	85	%

Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature	T _C	0	25	70	°C
	T _C	-40	25	85	°C
Power Supply Voltage	V _{CC3}	3.135	3.3	3.465	V
Data Rate	-	-	24.33 25.78	28	Gbps

Transceiver Electrical Characteristics

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Module Supply Current	I _{cc}	-	-	300	mA	-
Power Dissipation	PD	-	-	1000	mW	-
Transmitter			-	-		-
Input Differential Impedance	Z _{IN}	-	100		Ω	
Differential Data Input Swing	V _{IN} , P-P	180	-	700	mVP-P	
TX_FAULT Transmitter Fault Normal Operation	VOH	2.0	-	VCCHOST	V	
	VOL	0		0.8	V	
TX_DISABLE Transmitter DisableTransmitter Enable	VIH	2.0	-	VCCHOST	V	
	VIL	0		0.8	V	
Receiver						
Output Differential Impedance	Z _O		100		Ω	
Differential Data Output Swing	V _{OUT} , P-P	300	-	850	mVP-P	1
Data Output Rise Time, Fall Time	t _r , t _f	15	-	-	ps	2
RX_LOS Loss of signal (LOS)Normal Operation	VOH	2.0	-	VCCHOST	V	3
	VOL	0	-	0.8	V	3

Transmitter Operating Characteristic-Optical, Electrical

Parameter	Symbol	Min.	Typical	Max.	Unit	Note
Launch Optical Power	Po	-7	-	2	dBm	1
Extinction Ratio	ER	3	-	-	dB	
Center Wavelength Range	λ_c	1295	1310	1325	nm	
Optical Modulation Amplitude	OMA	-4	-	2.2	dBm	
Transmitter and Dispersion Penalty	TDP	-	-	2.7	dB	
Spectral Width	$\Delta\lambda$	-	-	1	nm	
RIN _{20OMA}	-	-	-	-130	dB/Hz	
Optical Return Loss Tolerance	ORLT	-	-	20	dB	
Pout @TX-Disable Asserted	Poff	-	-	-20	dBm	
Eye Diagram	25GBASE-LR mask and filter					

Notes:

1. Average optical power shall be measured using the methods specified in TIA/EIA-455-95.

Receiver Operating Characteristic-Optical, Electrical

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Center Wavelength	λ_c	1295	1310	1325	nm	-
Receiver OMA Sensitivity	RxSENS	-	-	-12	dBm	1
Receiver Overload (OMA)	Pol	2.2	-	-	dBm	1
Receiver Reflectance		-	-	-26	dB	-
LOS De-Assert	LOSD	-	-	-13	dBm	-
LOS Assert	LOSA	-30	-	-	dBm	-
LOS Hysteresis	-	0.5	-	-	dB	-

Notes:

1. Receiver sensitivity is informative. shall be measured with conformance test signal for BER =5x 10⁻⁵.

Special function

Receiver special description are defined in table as below.

Parameters	Description	Note
RX LOS RX LOS enable/disable	RX LOS enable	*1
LOS LOS Criterion	OMA	

Note :

RX LOS enable means when LOS RX no signal output, inverse, Rx may be have normal signal amplitude output.

Pin-out Definition

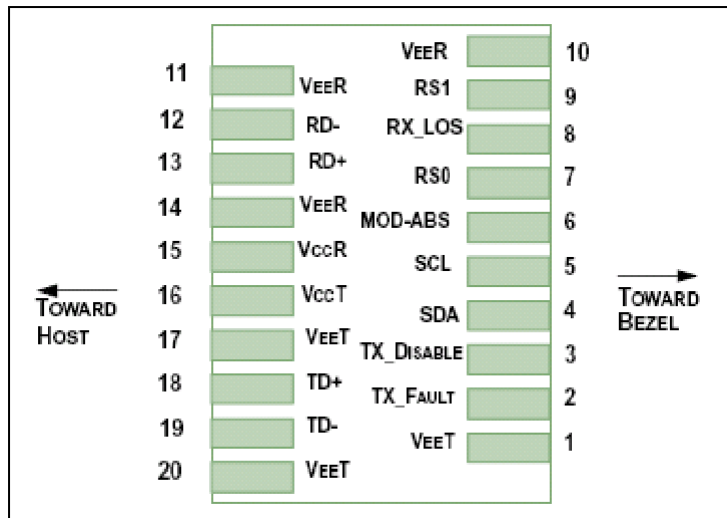


Figure1

Pin Description

Pin	Symbol	Name/Description	Note
1	VeeT	Transmitter Ground	1
2	TX_Fault	Transmitter Fault (LVTTL-O) - High indicates a fault condition	2
3	TX_Disable	Transmitter Disable (LVTTL-I) – High or open disables the transmitter	3
4	SDA	Two wire serial interface Data Line (LVCMOS-I/O)(MOD-DEF2)	4
5	SCL	Two wire serial interface Clock Line (LVCMOS-I/O)(MOD-DEF1)	4
6	MOD_ABS	Module Absent (Output), connected to VeeT or VeeR in the module	5
7	RS0	NA	6
8	RX_LOS	Receiver Loss of Signal (LVTTL-O)	2
9	RS1	NA	6
10	VccRx	Receiver Ground	1
11	SCL	Receiver Ground	1
12	RD-	Inverse Received Data out (CML-O)	
13	RD+	Received Data out (CML-O)	
14	VeeR	Receiver Ground	
15	VccR	Receiver Power - +3.3V	
16	VccT	Transmitter Power - +3.3 V	
17	VeeT	Transmitter Ground	1
18	TD+	Transmitter Data In (CML-I)	
19	TD-	Inverse Transmitter Data In (CML-I)	
20	VeeT	Transmitter Ground	1

Notes:

- 1.The module signal ground pins, VeeR and VeeT, shall be isolated from the module case.
2. This pin is an open collector/drain output pin and shall be pulled up with 4.7k-10kohms to Host_Vcc on the host board. Pull ups can be connected to multiple power supplies, however the host board design shall ensure that no module pin has voltage exceeding module VccT/R + 0.5 V.
- 3.This pin is an open collector/drain input pin and shall be pulled up with 4.7k-10kohms to VccT in the module.

4. See sff-8431 4.2 2-wire Electrical Specifications .

5.This pin shall be pulled up with 4.7k-10kohms to Host_Vcc on the host board. [6]If implementing SFF-8079 pin 7 and 9 are used for AS0 and AS1 respectively.

Board Power Supply Filter Network

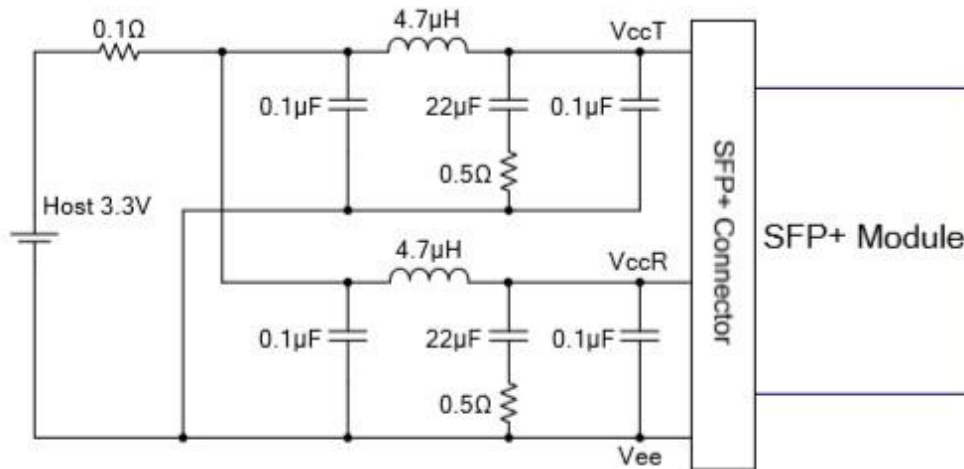


Figure2

Recommended Interface Circuit

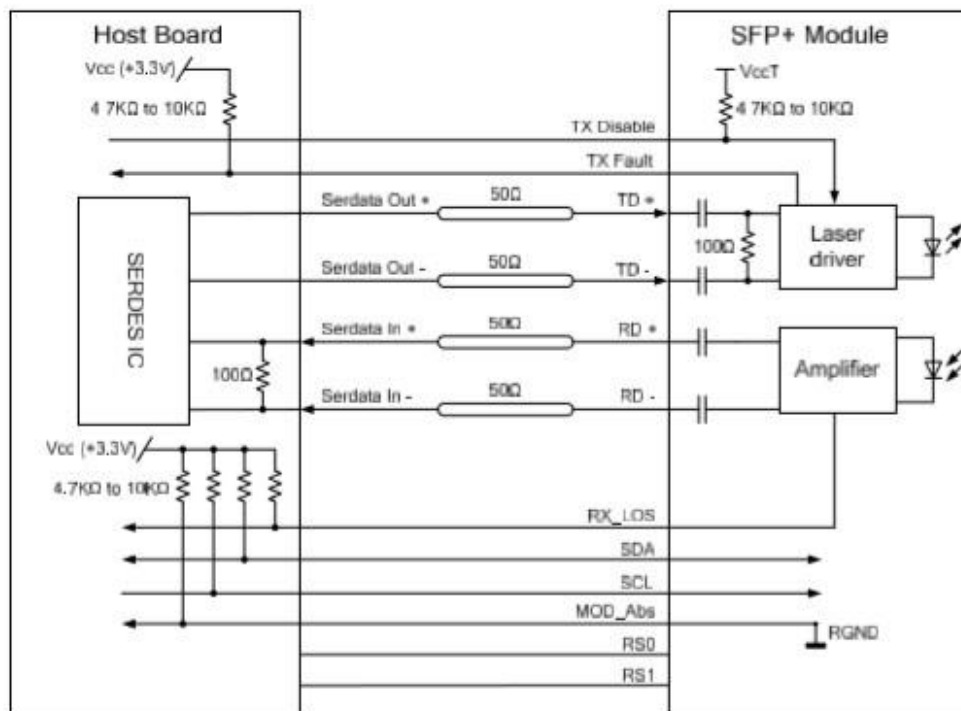


Figure3

Dimensions

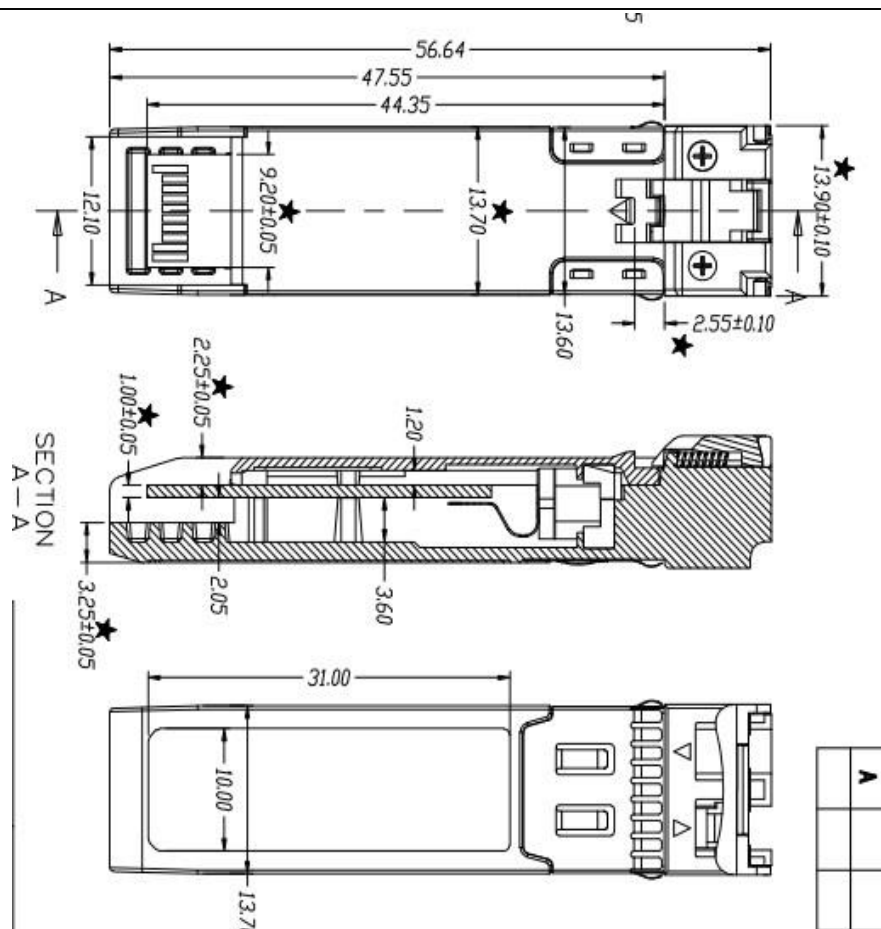


Figure4

Digital Diagnostic Memory Map

2 wire address 1010000X (A0h)	2 wire address 1010001X (A2h)
0	0
Serial ID Defined by SFP MSA (96 bytes)	Alarm and Warning Thresholds (56 bytes)
95	55
Vendor Specific (32 bytes)	Cal Constants (40 bytes)
127	95
Reserved in SFP MSA (128 bytes)	Real Time Diagnostic Interface (24 bytes)
255	119
	127
	Vendor Specific (8 bytes)
	User Writable EEPROM (120 bytes)
	247
	255
	Vendor Specific (8 bytes)

Ordering Information

Part No	Tx	Pout	Rx	S	Top	Reach	RoHS	DDM
GHS3L0C31	1310nm DFB	-7 ~ 2dBm	PIN	<-12dBm	0~70°C	10km	Compliant	Available