GZ100GQSR31L-10

100Gb/s 10Km QSFP28 LR4 Single Receiver

Features

- Up to 10km reach for G.652 SMF
- 4 channel PIN PD**(Without Transmitter)**
- 4x25G Electrical Interface
- Single +3.3V power supply
- DDM function implemented
- 2 Wire Serial Interface for module management
- Maximum power dissipation<2.5W

Applications

- Compliant with QSFP28 MSA(SFF-8665 v1.9)
- Compliant with IEEE 802.3ba
- 100GBASE-LR4 Ethernet

Product Description

QSFP28 Receiver modules are designed for use in 100 Gigabit Ethernet links over single mode fiber. They are compliant with SFF-8665, INF-8438i and IEEE 802.3ba 100GBASE-LR4. Digital diagnostics functions are available via an I2C interface, as specified by the QSFP28 MSA.

Shenzhen Guangzhi Communication Technology Co., LTD.
Production Address: 5th floor, Building 2, Peninsula Industrial Park, No. 3, Gangbian Tian Road, East Lake High-tech Zone, Wuhan Hubei Province, China.
Contact:Mr.Yang Tel.: +86-18607555895 E-mail: yanghan@optst.com
Website: www.optst.com

Pin function definitions

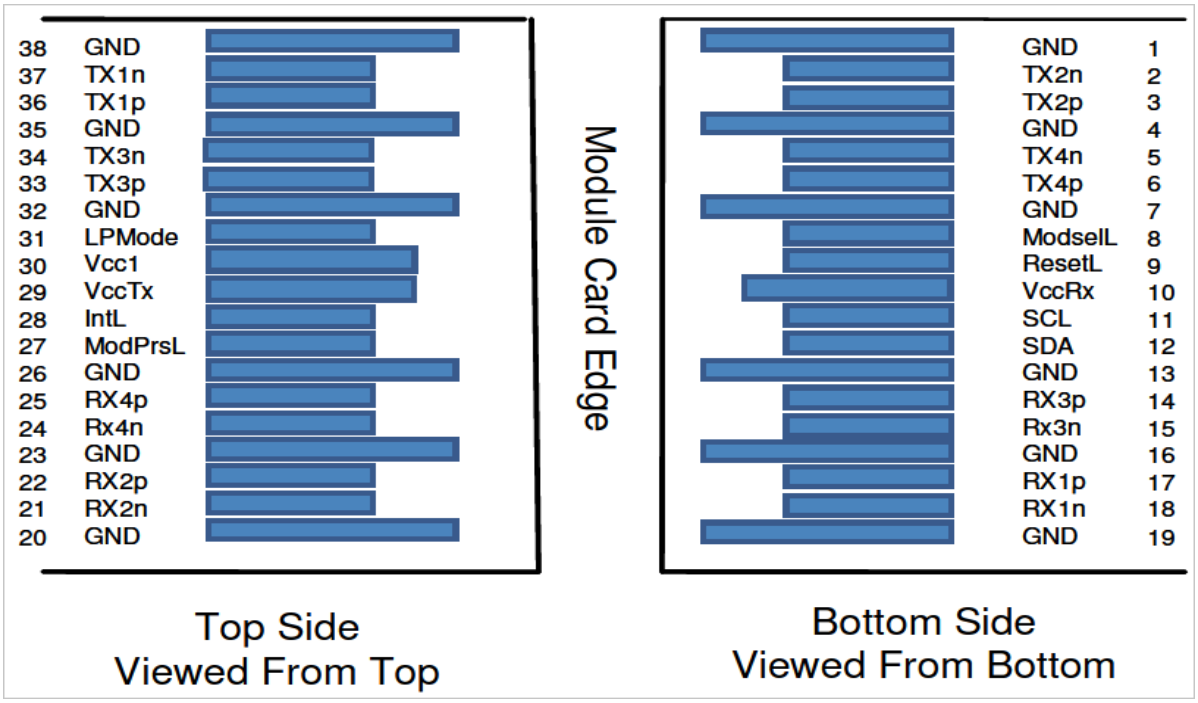


Figure 1.Pin function definitions

Table 1: Transceiver pin descriptions

Pin	Name	Description	Plug Sequence	Notes
1	GND	Ground	1	
2	Tx2n	Transmitter Inverted Data Input	3	
3	Tx2p	Transmitter Non-Inverted Data Input	3	
4	GND	Ground	1	
5	Tx4n	Transmitter Inverted Data Input	3	
6	Tx4p	Transmitter Non-Inverted Data Input	3	
7	GND	Ground	1	
8	ModSelL	Module Select	3	
9	ResetL	Module Reset	3	
10	Vcc Rx	+3.3 V Power supply receiver	2	
11	SCL	2-wire serial interface clock	3	
12	SDA	2-wire serial interface data	3	
13	GND	Ground	1	
14	Rx3p	Receiver Non-Inverted Data Output	3	

15	Rx3n	Receiver Inverted Data Output	3	
16	GND	Ground	1	
17	Rx1p	Receiver Non-Inverted Data Output	3	
18	Rx1n	Receiver Inverted Data Output	3	
19	GND	Ground	1	
20	GND	Ground	1	
21	Rx2n	Receiver Inverted Data Output	3	
22	Rx2p	Receiver Non-Inverted Data Output	3	
23	GND	Ground	1	
24	Rx4n	Receiver Inverted Data Output	3	
25	Rx4p	Receiver Non-Inverted Data Output	3	
26	GND	Ground	1	
27	ModPrsL	Module Present	3	
28	IntL	Interrupt	3	
29	Vcc Tx	+3.3 V Power supply transmitter	2	
30	Vcc1	+3.3 V Power Supply	2	
31	LPMode	Low Power Mode	3	
32	GND	Ground	1	
33	Tx3p	Transmitter Non-Inverted Data Input	3	
34	Tx3n	Transmitter Inverted Data Input	3	
35	GND	Ground	1	
36	Tx1p	Transmitter Non-Inverted Data Input	3	
37	Tx1n	Transmitter Inverted Data Input	3	
38	GND	Ground	1	

Absolute Maximum Ratings

Parameter	Symbol	Unit	Min	Max
Storage Temperature Range	Ts	°C	-40	85
Relative Humidity	RH	%	0	95
Maximum Supply Voltage	Vcc3	V	-0.5	4.0

Recommended Operating Conditions

Parameter	Symbol	Unit	Min	Typ	Max
Operating Case Temperature Range	Tc	°C	0		70
Power Supply Voltage	Vcc	V	3.14	3.3	3.46
Bit Rate	BR	Gb/s			103.1
Bit Error Ratio	BER				10^{-12}
Max Supported Link Length	L	Km			10

Electric Ports Definition

Parameter	Symbol	Unit	Min	Typ	Max	Note
Supply Voltage	VCC	V	3.14	3.3	3.46	
Module Power		mW			2500	
Receiver						
Differential Data Output	VOD	mVp-p	300		800	
AC common mode output voltage (RMS)		mV			17.5	
Differential input return loss (min)		dB	Per IEEE P802.3ba, Section 83E-2			
Differential to common mode input return loss (min)		dB	Per IEEE P802.3ba, Section 83E-3			
Vertical eye closure		dB			5.5	
transition time,20% to80%		ps	12			

Shenzhen Guangzhi Communication Technology Co., LTD.
Production Address: 5th floor, Building 2, Peninsula Industrial Park, No. 3, Gangbian Tian Road, East Lake High-tech Zone, Wuhan Hubei Province, China.
Contact:Mr.Yang Tel.: +86-18607555895 E-mail: yanghan@optst.com
Website: www.optst.com

Optical Characteristics *(Tc=0 °C to 70 °C and Vcc= 3.14 to 3.46)*

Parameter	Symbol	Unit	Min	Typ	Max	Notes
Receiver(per Lane)						
Signaling Speed per Lane		GBd	25.78125 ± 100 ppm			
Lane Wavelength (range): L0 L1 L2 L3		nm	1294.53 – 1296.59 1299.02 – 1301.09 1303.54 – 1305.63 1308.09–1310.19			
Average Receiver Sensitivity per Lane	Rxsens	dBm			-8.6	
Average Received Power per Lane	RXPx	dBm	-10.6		4.5	
Damage Threshold Per Lane	Pmax	dBm			5	
Return Loss	RL				-26	
Vertical eye closure penalty, per lane		dB			1.9	
Receiver electrical 3dB upper cutoff frequency,per lane		GHz			31	
LOS De-Assert	LOSD	dBm			-13	
LOS Assert	LOSA	dBm	-30			
LOS Hysteresis		dB	0.5	1.5	5	

Typical Application Circuit

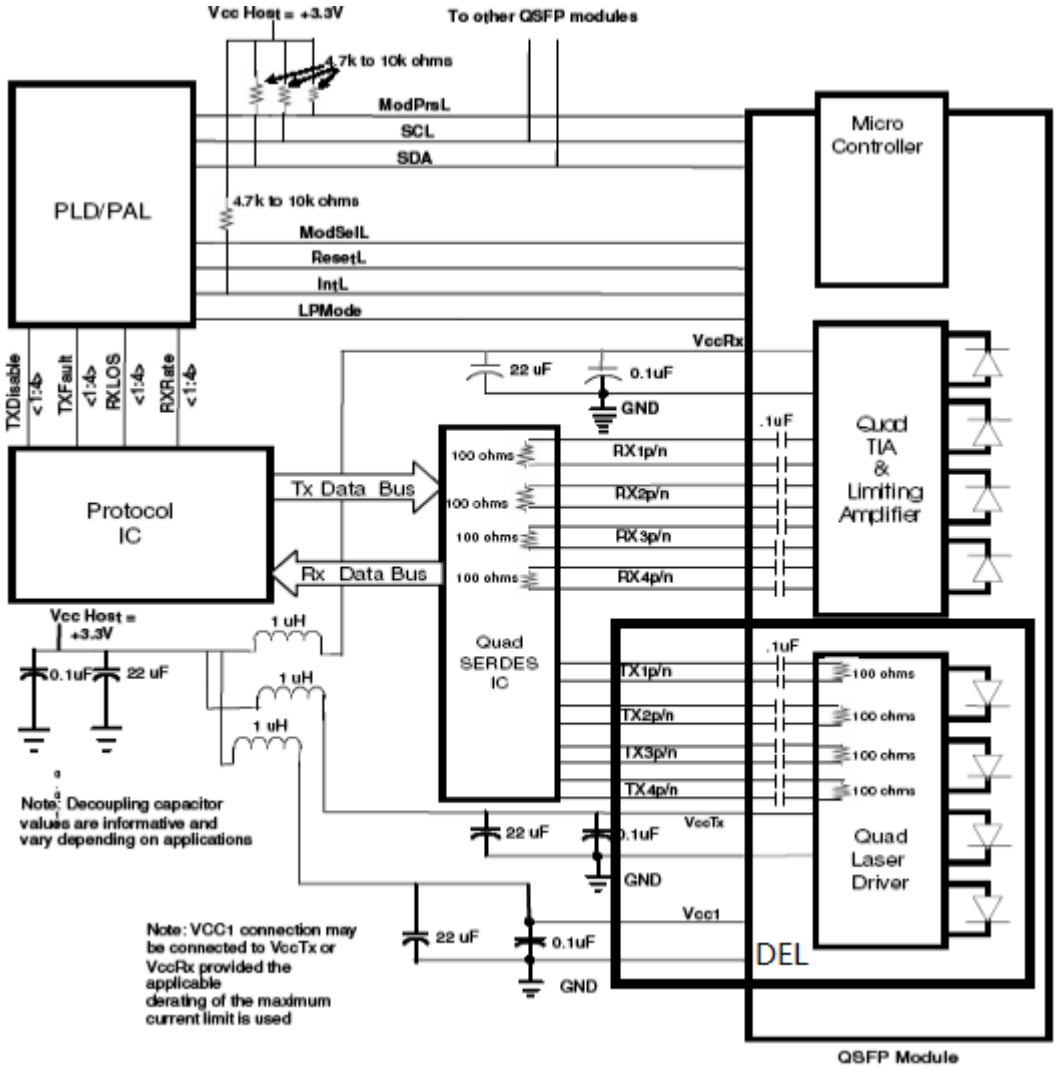


Figure 2. Typical application circuit

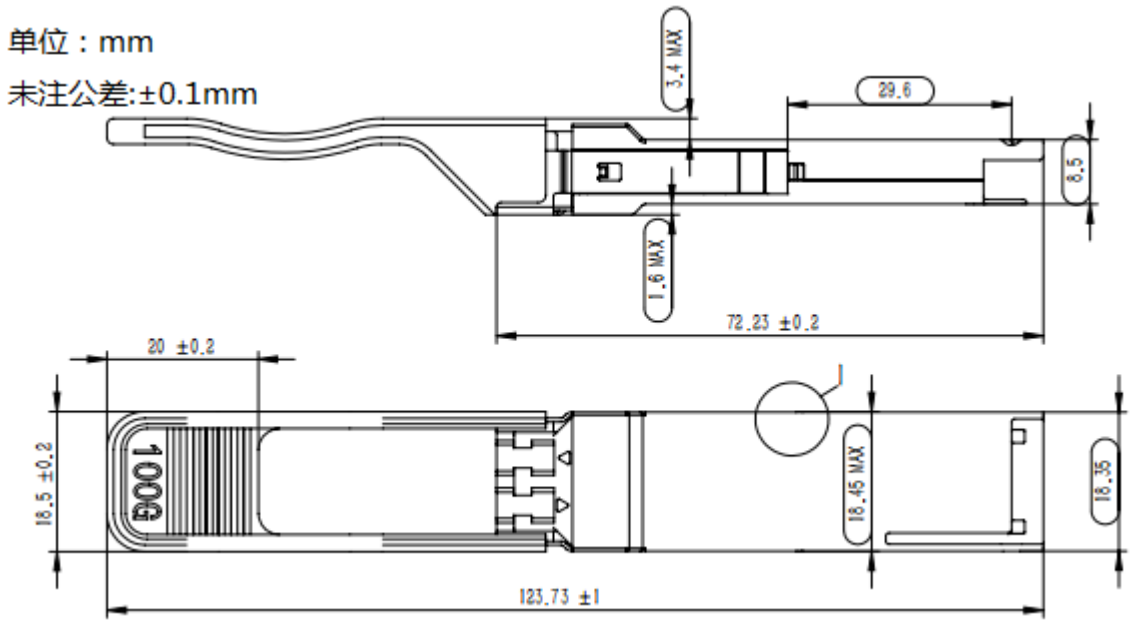
Digital Diagnostics Functions

As defined by the SFF-8665–Specification for QSFP28 Copper and Optical Transceiver,Our QSFP28 transceivers provide digital diagnostic functions via a 2-wire serial interface, which allows real-time access to the following operating parameters:

- Transceiver temperature
- Received optical power
- Transceiver supply voltage

It also provides a sophisticated system of alarm and warning flags, which may be used to alert end-users when particular operating parameters are outside of a factory-set normal range. The operating and diagnostics information is monitored and reported by a Digital Diagnostics Transceiver Controller (DDTC) inside the transceiver, which is accessed through the 2-wire serial interface. When the serial protocol is activated, the serial clock signal (SCL pin) is generated by the host.

Mechanical Dimensions



Shenzhen Guangzhi Communication Technology Co., LTD.
Production Address: 5th floor, Building 2, Peninsula Industrial Park, No. 3, Gangbian Tian Road, East Lake High-tech Zone, Wuhan Hubei Province, China.
Contact:Mr.Yang Tel.: +86-18607555895 E-mail: yanghan@optst.com
Website: www.optst.com

Part. No	Specifications								
	Rate Gb/s	Tx	Tx WL nm	Po dBm	Rx	Sen. dBm	Temp ℃	Reach km	Other
GZ100GQSR31L-10	103.1	/	/	/	PIN/TIA	<-10.6	0~70	10	RoHS

Ordering Information

Warnings

Handing Precautions:

This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended. Please follow guidelines according to proper ESD procedures.

Laser Safety:

Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

Notice:

The information provided on this page contains the product target specifications which are subject to change without notice.

Shenzhen Guangzhi Communication Technology Co., LTD.
Production Address: 5th floor, Building 2, Peninsula Industrial Park, No. 3, Gangbian Tian Road, East Lake High-tech Zone, Wuhan Hubei Province, China.
Contact:Mr.Yang Tel.: +86-18607555895 E-mail: yanghan@optst.com
Website: www.optst.com