

QSFP28 100G Duplex 850nm 100m SR4 MPO Transceiver

TQ8542S-CN Product Specification

FEATURES

- Typical data rate 25.78125Gbps per channel
- High Reliability 850nm VCSEL technology
- MPO connector receptacle
- Single +3.3V power supply
- Hot-pluggable
- International Class1 laser safety certified
- Operating temperature range: 0 ~ +70°C
- RoHS Compliant
- Support Digital Diagnostic Monitoring interface
- Max reach 100m on 50/125μm MMF

APPLICATIONS

- Data Center Backbone
- 100GBASE-SR4 Ethernet

ORDERING INFORMATION

Part Number	Form Factor	Data Rate (Gbps)	Media	Distance (km)	Wavelength (nm)	Temperature (°C)
TQ8542S-CN	QSFP28	103.125	MMF	0.1	850	0~70

ABSOLUTE MAXIMUM RATINGS

Exceeding the limits below may damage the transceiver permanently.

Parameter	Symbol	Min	Typ	Max	Unit.	Note
Storage Temperature	TSTG	-40	-	85	°C	
Operating Relative Humidity	RH	5	-	95	%	
Supply Voltage	VCC	-0.3	-	3.6	V	

RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Min	Typ	Max	Unit.	Note
Operating Case Temperature	Tc	0	-	70	°C	
Supply Voltage	VCC3	3.13	3.3	3.47	V	
Supply Current	ICC3	-	-	1050	mA	+3.3V Supply
Data Rate	DR	-	25.78125	-	Gbps	

ELECTRICAL and OPTICAL CHARACTERISTICS

Parameter	Symbol	Min	Typ	Max	Unit.	Note
Transmitter						
Tx Differential Input Amplitude	V _{in} p-p	95	-	900	mV	
Input Differential Impedance	Z _{in}	90	100	110	Ω	
Average Launch Power, each lane	PO	-8.4	-	2.4	dBm	
Extinction Ratio	ER	2	-	-	dB	
Center Wavelength Range	λ _c	840	850	860	nm	
Spectrum Width	Δλ	-	-	3.5	nm	
Optical Power at Tx Disable	P _{txdis}	-	-	-30	dBm	
Receiver						
Rx Differential Output Amplitude	V _{out} p-p	300	-	850	mV	
Receiver Optical Wavelength	λ _c	840	850	860	nm	
Receiver Sensitivity, each lane	Sen	-	-	-10.3	dBm	
Receiver Overload	OL	2.4	-	-	dBm	
LOS Assert Level	LOSA	-30	-	-	dBm	
LOS De-Assert Level	LOSD	-	-	-12	dBm	
LOS Hysteresis	LOSH	0.5	-	6	dB	

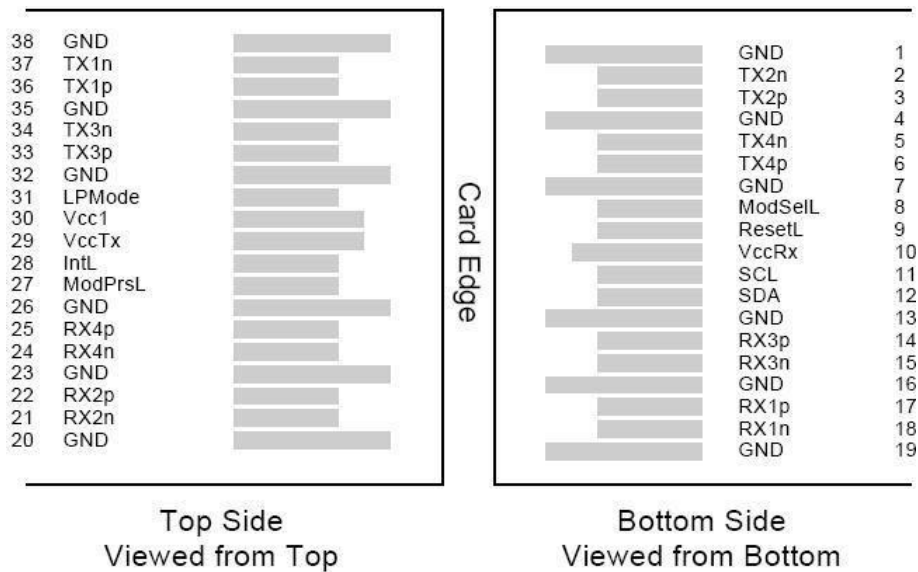
Notes:

1. Measured with 2³¹-1 NRZ Pattern. BER≤1E-12@10Gbps, ER=3dB

Digital Diagnostic Functions

Parameter	Symbol	Min.	Max.	Unit	Notes
Temperature	DDMI_Temp	-3	3	°C	1LSB=1/256°C
Supply Voltage	DDMI_Vcc	-3%	3%	v	1LSB=0.1mV
Bias Current	DDMI_Ibias	-10%	10%	mA	1LSB=2uA
TX Optical Power	DDMI_TX	-3	+3	dB	1LSB=0.1uW
RX Optical Power	DDMI_RX	-3	+3	dB	1LSB=0.1uW

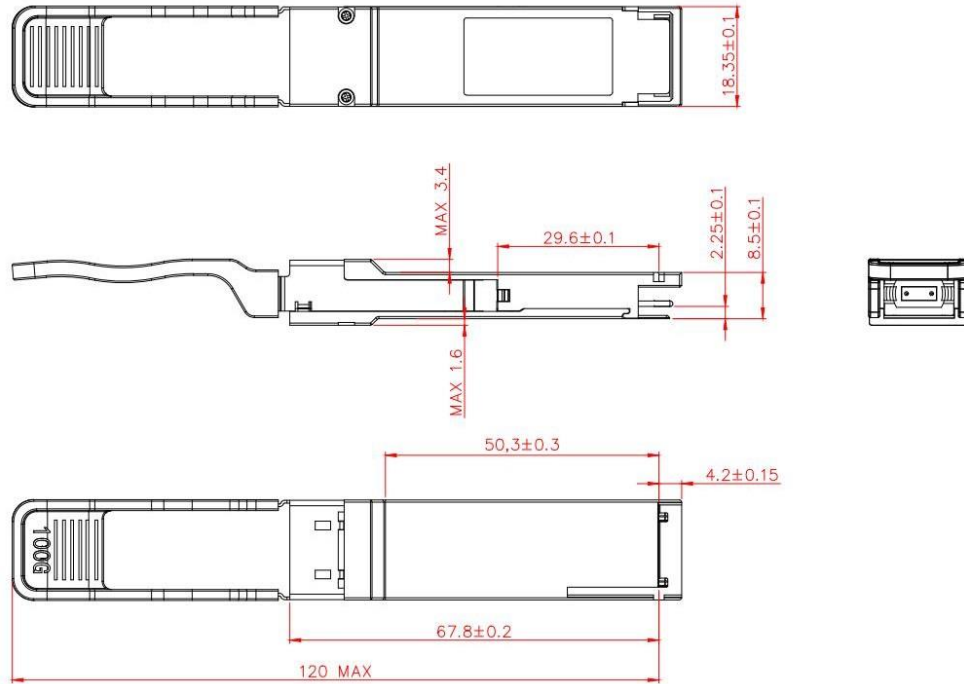
PIN DIAGRAM



PIN DESCRIPTIONS

Pin	Symbol	Description	Notes
1	GND	Ground	
2	Tx2n	Transmitter Inverted Data Input	
3	Tx2p	Transmitter Non-Inverted Data output	
4	GND	Ground	
5	Tx4n	Transmitter Inverted Data Input	
6	Tx4p	Transmitter Non-Inverted Data Input	
7	GND	Ground	
8	ModSelL	Module Select	
9	ResetL	Module Reset	
10	Vcc Rx	+ 3.3V Power Supply Receiver	
11	SCL	2-Wire Serial Interface Clock	
12	SDA	2-Wire Serial Interface Data	
13	GND	Ground	
14	Rx3p	Receiver Non-Inverted Data Output	
15	Rx3n	Receiver Inverted Data Output	
16	GND	Ground	
17	Rx1p	Receiver Non-Inverted Data Output	
18	Rx1n	Receiver Inverted Data Output	
19	GND	Ground	
20	GND	Ground	
21	Rx2n	Receiver Inverted Data Output	
22	Rx2p	Receiver Non-Inverted Data Output	
23	GND	Ground	
24	Rx4n	Receiver Inverted Data Output	
25	Rx4p	Receiver Non-Inverted Data Output	
26	GND	Ground	
27	ModPrsL	Module Present	
28	IntL	Interrupt	
29	VccTx	+3.3 V Power Supply transmitter	
30	Vcc1	+3.3 V Power Supply	
31	LPMODE	Low Power Mode .	
32	GND	Ground	
33	Tx3p	Transmitter Non-Inverted Data Input	
34	Tx3n	Transmitter Inverted Data Input	
35	GND	Ground	
36	Tx1p	Transmitter Non-Inverted Data Input	
37	Tx1n	Transmitter Inverted Data Output	
38	GND	Ground	

MECHANICAL SPECIFICATION



LABEL DIAGRAM



TQ8542S-CN

QSFP28 100G Duplex 850nm 100m SR4 MPO

Class 1 Laser

MADE IN CHINA

S/N: ??????????



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