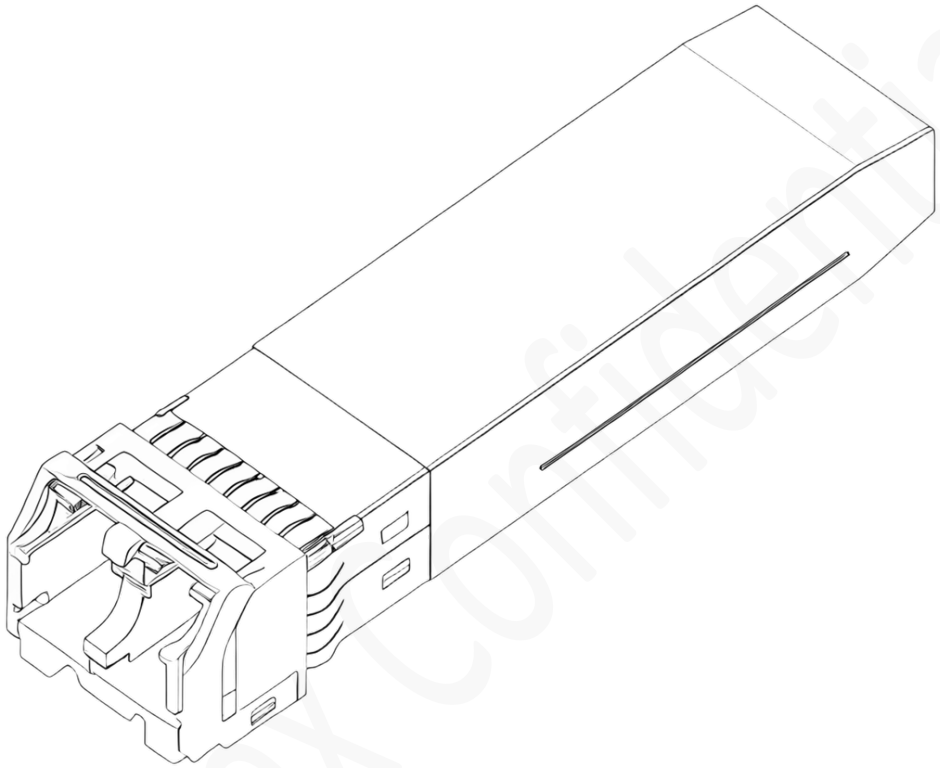
Product Datasheet

25G SFP28 LR Transceiver



Application

- Data center & Networking Equipment
- Servers/Storage Devices
- High Performance Computing (HPC)
- Switches/Routers
- Telecom Central Offices (CO)
- Test and Measurement Equipment

1.0 Product Specification

1.1 Absolute Maximum Ratings (TC=25℃, unless otherwise noted)

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings will cause permanent damage and/or adversely affect device reliability.

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Storage Temperature	TS	-40	-	+85	℃	
Maximum Supply Voltage	Vcc	-0.5	-	3.6	V	
Operating Relative Humidity	RH	5	-	95	%	No condensation
Control Input Voltage	V_I	-0.3	-	V_{CC}+0.5	V	

1.2 General Specifications (Tc=25℃, unless otherwise noted)

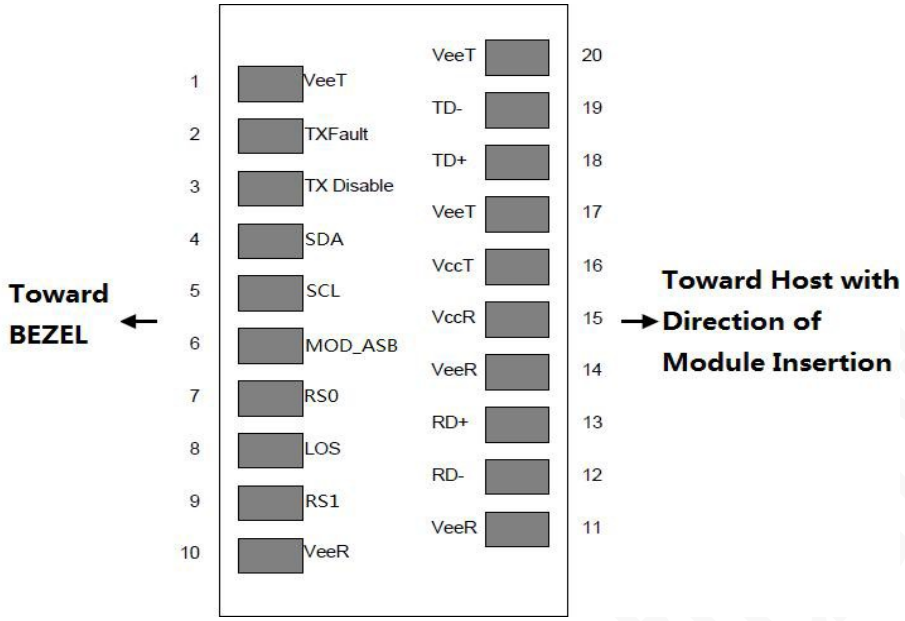
Parameter	Symbol	Min	Typical	Max	Unit	Notes
Operating Case Temperature	T_{OPR}	0	-	70	℃	
Power Supply Voltage	V_{CC}	3.135	3.3	3.465	V	
Maximum Power Dissipation	P_D	-	-	3.5	W	
Signaling Rate per Lane	SRL	-	25.78125	-	Gb/s	
Operating Distance (SMF)	-	-	-	10000	m	

1.3 Optical Characteristics (TC=25℃, unless otherwise noted)

Parameter	Symbol	Min	Typical	Max	Units	Notes
Wavelength Assignment	L	1295	1310	1325	nm	
Transmitter						
Side Mode Suppression Ratio	SMSR	30			dB	
Average Optical Power	PAVG	-7		2	dBm	
Optical Power OMA	POMA	-4		2.2	dBm	
Launch power in OMA minus Transmitter and Dispersion Penalty		-5			dBm	
Transmitter Dispersion Penalty	TDP			2.7	dB	
Extinction Ratio	ER	3.5			dB	
Relative Intensity Noise	RIN20OMA			-130	dB/Hz	
Optical Return Loss Tolerance	OTL			20	dB	
Transmitter Reflectance	TR			-12	dB	
Average Launch Power OFF Transmitter	Poff			-30	dBm	
Eye Mask {X1, X2, X3, Y1, Y2, Y3}		{0.31, 0.4, 0.45, 0.34, 0.38, 0.4}				

Receiver						
Damage Threshold	THD	3.5			dBm	
Average Receive Power		-13.3		2	dBm	
Receive Power (OMA)				2.2	dBm	
Receiver Sensitivity (OMA)	SEN			-11.3	dBm	
Stressed Receiver Sensitivity (OMA)				-8.8	dBm	
Receiver Reflectance	RR			-26	dB	
LOS Assert	LOS A	-30			dBm	
LOS Deassert	LOS D			-14	dBm	
LOS Hysteresis	LOS H	0.5			dB	
Receiver Electrical 3 dB upper Cutoff Frequency	Fc			31	GHz	

1.4 PIN Descriptions



Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground	
2	Tx_Fault	Transmitter Fault - High indicates a fault condition	
3	Tx_Disable	Transmitter Disable – High or open disables the transmitter	
4	SDA	2-wire Serial Interface Data Line (MOD-DEF2)	
5	SCL	2-wire Serial Interface Clock (MOD-DEF1)	
6	MOD_ABS	Module Absent, connected to VeeT or VeeR in the module	
7	RS0	Rate Select 0 – Not used, Presents high input impedance	
8	RX_LOS	Receiver Loss of Signal(LVTTL-O). Logic 0 indicates normal operation	
9	RS1	Rate Select 1 – Not used, Presents high input impedance	
10	VeeR	Receiver Ground	
11	VeeR	Receiver Ground	
12	RD-	Inverse Received Data out	
13	RD+	Received Data out	
14	VeeR	Receiver Ground	
15	VccR	Receiver Power Supply	
16	VccT	Transmitter Power Supply	

17	VeeT	Transmitter Ground	
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	VeeT	Transmitter Ground	

2.0 Product Information

Data Rate	Factor		Optical	Wavelength	Reach
25G	SFP28	LR	LC	1310nm	500m

ESD Safety Cautionsy

This transceiver is specified as ESD threshold 1KV for high speed data pins based on Human Body Model per ANSI/ESDA/JEDECJS-001. The units are subjected to 15kV air discharges during operation and 8kV direct contact discharges to the case. However, normal ESD precautions are still required during the handling of this module. This transceiver is shipped in ESD protective packaging. It should be removed from the packaging and handled only in an ESD protected environment.

Important Notice

The performance figures, data, and any illustrative material presented in this datasheet are typical and must be explicitly confirmed in writing by Quantex before they are deemed applicable to any specific order or contract.

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3.0 Revision Record

Rev.	Comments	Date
A01	Initial Release	2025/05/16