

SFP28-LR-10/25GD

Dual-Rate 10/25GBASE, SFP28, LR, SMF TRANSCEIVER

1310nm, 10km REACH, DUPLEX LC CONNECTOR

Product Features

- Up to 25.78Gbps Data Links
- Dual CDR with TX and RX 25G/10G Auto-speed Switch
- Up to 10km transmission over SMF
- DFB Laser and PIN receiver
- Metal enclosure, for lower EMI
- 2-wire interface with integrated Digital Diagnostic monitoring
- Hot-pluggable SFP28 footprint
- Single 3.3V power supply
- Power dissipation < 1.5 W
- Compliant with SFF-8472, SFF-8431
- Available operating temperature ranges:
 - Commercial: 0°C to 70°C
 - Industrial: -40°C to 85°C



Product Applications

- 25GBase-LR Ethernet
- FC / CPRI

I. Maximum Ratings

Exceeding the limits below may damage the transceiver module permanently.

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

II. Operating Specifications

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Case Operating Temperature	TC	0		+70	°C	Commercial
		-40		+85	°C	Industrial
Power Supply Voltage	VCC	3.14	3.3	3.47	V	
Power Supply Current	ICC			360	mA	
Data Rate, each lane	BR		25.78125		Gbps	TX/RX
Transmission Distance	TD			10	km	
Coupled fiber	Single mode fiber					9/125um SMF

III. Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Center Wavelength	λ	1295	1310	1325	nm	
Spectrum Bandwidth (-20dB)	$\Delta\lambda$			1	nm	
Average Optical Power	P _{AVG}	-7		2	dBm	
Extinction Ratio	ER	2			dB	
Optical Return Loss Tolerance	OTL			12	dB	
Average Launch Power OFF Transmitter	P _{off}			-30	dBm	
Output Eye Mask		{0.3,0.38,0.45,0.35,0.41,0.5}				1
Receiver						
Input Optical Wavelength	λ	1295		1325	nm	
Receiver Sensitivity	P _{sen}			-13.3	dBm	2
Input Saturation Power	P _{SAT}	2.0			dBm	2
LOS Assert	LOS A	-30			dBm	
LOS Deassert	LOS D			-16	dBm	
LOS Hysteresis	LOS H	0.5		6	dB	

Notes:

1. Measured with a PRBS 231-1 test pattern, @25.78Gb/s.
2. Measured with Light source 1310nm, ER=3.0dB; BER =<5x10⁻⁵ @PRBS=231-1 NRZ.

IV. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
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-H	2		Vcc+0.3	V	
Transmitter Disable Voltage - Low	VDis-L	0		0.8	V	
Receiver						
Differential data output swing	Vout,pp	300		850	mV	
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.

V. Ordering Information

Pivotal Part Number	Description
SFP28-LR-10/25GD	SFP28, 1310nm, LR SMF 10km, 10/25G DDM, C-Temp
SFP28-LR-10/25GDI	SFP28, 1310nm, LR SMF 10km, 10/25G DDM, I-Temp

Notes:

1. Please contact sales for specific OEM Platform part numbers to fit your network.

Warranty

<https://pivotaloptics.com/warranty/>

Disclaimer

External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.