

## SFP28-SR-10/25GD

### Dual-Rate 10/25GBASE, SFP28, SR, MMF TRANSCEIVER 850nm, 100m REACH, DUPLEX LC CONNECTOR

#### Product Features

- Up to 25.78Gbps Data Links
- Dual CDR with TX and RX 25G/10G Auto-speed Switch
- 100m over M5F MMF (50/125 um OM4)
- VCSEL 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 < 1.2 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-SR 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               |      |          | 100  | m     | OM4        |
| Coupled fiber              | Multi-mode fiber |      |          |      |       |            |

## III. Optical Characteristics

| Parameter                                                                             | Symbol    | Min.                          | Typ. | Max. | Unit | Notes |
|---------------------------------------------------------------------------------------|-----------|-------------------------------|------|------|------|-------|
| <b>Transmitter</b>                                                                    |           |                               |      |      |      |       |
| Center Wavelength                                                                     | $\lambda$ | 840                           | 850  | 860  | nm   |       |
| Signaling rate                                                                        | DR        | 25.78125 $\pm$ 100ppm         |      |      | Gb/s |       |
| RMS Spectral Width                                                                    |           |                               |      | 0.6  | nm   |       |
| Average Optical Power                                                                 | PAVG      | -8.4                          |      | 2.4  | dBm  |       |
| Optical Power (OMA)                                                                   | POMA      | -6.4                          |      | 3    | dBm  |       |
| Extinction Ratio                                                                      | ER        | 2                             |      |      | dB   |       |
| Transmitter and Dispersion Eye Closure @25.7Gb/s                                      | TDEC      |                               |      | 4.3  |      |       |
| Optical Return Loss Tolerance                                                         | OTL       |                               |      | 12   | dB   |       |
| Average Launch Power OFF Transmitter                                                  | Poff      |                               |      | -30  | dBm  |       |
| Eye Mask {X1, X2, X3, Y1, Y2, Y3} :<br>Hit ratio 1.5x10 <sup>-3</sup> hits per sample |           | {0.3,0.38,0.45,0.35,0.41,0.5} |      |      |      | 1     |

**SFP28-SR-10/25GD**

Dual-Rate 10/25GBASE, SFP28, SR, MMF TRANSCEIVER  
 850nm, 100m REACH, DUPLEX LC CONNECTOR

| Parameter                         | Symbol    | Min.                  | Typ. | Max. | Unit | Notes |
|-----------------------------------|-----------|-----------------------|------|------|------|-------|
| <b>Receiver</b>                   |           |                       |      |      |      |       |
| Center Wavelength                 | $\lambda$ | 840                   | 850  | 860  | nm   |       |
| Signaling rate                    | DR        | 25.78125 $\pm$ 100ppm |      |      | Gb/s |       |
| Average Receive Power             | Pin       | -10.3                 |      | 2.4  | dBm  | 2     |
| Optical Receiver Power (Overload) | Pmax      | 3.4                   |      |      | dBm  |       |
| Receiver Sensitivity (OMA)        |           |                       |      | -10  | dBm  |       |
| Receiver Reflectance              | RR        |                       |      | -12  | dB   |       |
| LOS Assert                        | LOS A     | -30                   |      |      | dBm  |       |
| LOS Deassert                      | LOS D     |                       |      | -11  | dBm  |       |
| LOS Hysteresis                    | LOS H     | 0.5                   |      |      | dB   |       |

## Notes:

1. Hit Ratio  $1.5 \times 10^{-3}$  hits/sample.
2. Minimum value is informative only and not the principal indicator of signal strength.

## IV. Electrical Characteristics

| Parameter                          | Symbol               | Min. | Typ. | Max.                 | Unit | Notes |
|------------------------------------|----------------------|------|------|----------------------|------|-------|
| <b>Transmitter</b>                 |                      |      |      |                      |      |       |
| Input differential impedance       | R <sub>in</sub>      |      | 100  |                      | Ω    | 1     |
| Single ended data input swing      | V <sub>in,pp</sub>   | 180  |      | 700                  | mV   |       |
| Transmitter Fault Output - High    | V <sub>Fault-H</sub> | 2    |      | V <sub>cc</sub> +0.3 | V    |       |
| Transmitter Fault Output - Low     | V <sub>Fault-L</sub> | 0    |      | 0.8                  | V    |       |
| Transmitter Disable Voltage - High | V <sub>Dis-H</sub>   | 2    |      | V <sub>cc</sub> +0.3 | V    |       |
| Transmitter Disable Voltage - Low  | V <sub>Dis-L</sub>   | 0    |      | 0.8                  | V    |       |
| <b>Receiver</b>                    |                      |      |      |                      |      |       |
| Differential data output swing     | V <sub>out,pp</sub>  | 300  |      | 850                  | mV   |       |
| LOS Output Voltage - High          | V <sub>LOS-H</sub>   | 2    |      | V <sub>cc</sub> +0.3 | V    |       |
| LOS Output Voltage - Low           | V <sub>LOS-L</sub>   | 0    |      | 0.8                  | V    |       |

**Notes:**

1. Connected directly to TX data input pins. AC coupled thereafter.

## v. Ordering Information

| Pivotal Part Number      | Description                                   |
|--------------------------|-----------------------------------------------|
| <b>SFP28-SR-10/25GD</b>  | SFP28, 850nm, SR MMF 100m, 10/25G DDM, C-Temp |
| <b>SFP28-SR-10/25GDI</b> | SFP28, 850nm, SR MMF 100m, 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.