

# SV-SFP28-LRD8xxH

25GbE 1295nm TX/ 1309nm RX (1309nm TX/ 1295nm) SM (LC) with DDM, distance up to 80km



## Features

- Support data rate up to 25.78125Gb/s
- Hot-Pluggable SFP Footprint and Single LC Connector
- Up to 80km reach for G.652 SMF
- EML laser and Integrated SOA & PIN TIA ROSA
- RoHS 6 compliance
- Compliant to IEEE 802.3cc, SFF-8472 and SFF-8419
- Complies with EU Directive 2015/863/EU
- Compliant with SFP+ MSA
- Power consumption:2.5W

## Applications

- 25G Ethernet
- CPRI option 10

## Ordering Information

| Part number            | Description                                                                                                                                                                                                                    | TX Power (dBm) | RX Sens. (dBm) | Fiber Budget (dB) | Distance (km) | DDM |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|-------------------|---------------|-----|
| <b>SV-SFP28-LRD83H</b> | Starview SFP28 Single Fiber Bi-Directional module supporting dual rate 10Gbps and 25Gbps 1295nm TX/ 1309nm RX single fiber SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 80km. Industrial temperature range | 2 to +7        | -24 to -4      | 26                | 80            | Yes |
| <b>SV-SFP28-LRD84H</b> | Starview SFP28 Single Fiber Bi-Directional module supporting dual rate 10Gbps and 25Gbps 1309nm TX/ 1295nm RX single fiber SM (LC) with Digital Diagnostic Monitoring (DDM), distance up to 80km. Industrial temperature range | 2 to +7        | -24 to -4      | 26                | 80            | Yes |

## Absolute Maximum Ratings

| Parameter                     | Symbol | Min. | Typical | Max. | Unit | Notes |
|-------------------------------|--------|------|---------|------|------|-------|
| Storage Temperature           | Tstg   | -40  |         | +85  | °C   |       |
| Case Operating                | TO     | 0    |         | 70   | °C   |       |
| Relative Humidity - Storage   | RHS    | 5    |         | 95   | %    |       |
| Relative Humidity - Operating | RHO    | 5    |         | 85   | %    |       |
| DC Supply Voltage             | VCC    | 0    |         | 3.6  | V    |       |

## Recommended Operating Conditions

| Parameter                  | Symbol | Min. | Typical | Max. | Unit | Notes    |
|----------------------------|--------|------|---------|------|------|----------|
| Case Operating Temperature | Top    | 0    |         | 70   | °C   |          |
| Power Supply Voltage       | VCC    | 3.13 | 3.3     | 3.47 | V    |          |
| Transmission Distance      | TD     |      |         | 80   | km   | Over SMF |

## Electrical Characteristics

High-Speed Signal: Compliant to CEI-25G-VSR

Low-Speed Signal: Compliant to SFF-8419

| Parameter                                    | Symbol           | Min. | Typical | Max.    | Unit | Notes |
|----------------------------------------------|------------------|------|---------|---------|------|-------|
| Transmitter (Module Input)                   |                  |      |         |         |      |       |
| Differential Input Resistance                | R_Rdin           | 90   | 100     | 110     |      |       |
| Input Differential Voltage                   | R_Vdiff          |      |         | 900     | mVpp |       |
| Tx_Disable                                   | Normal Operation | VIL  | -0.3    | 0.8     | V    |       |
|                                              | Laser Disable    | VIH  | 2.0     | VCC+0.3 | V    |       |
| Receiver (Module Output)                     |                  |      |         |         |      |       |
| Differential Resistance                      | T_Rd             | 90   | 100     | 110     | Ohm  |       |
| Output Differential Voltage                  | T_Vdiff          |      |         | 900     | mVpp |       |
| Differential Termination Resistance Mismatch | T_Rdm            |      |         | 10      | %    |       |
| Rx los                                       | Normal Operation | VOL  | -0.3    | 0.4     | V    |       |
|                                              | Loss Signal      | VOH  | 2       | VCCHOST | V    |       |

## Optical and Characteristics

| Parameter                  | Symbol | Min. | Typical | Max. | Unit | Notes |
|----------------------------|--------|------|---------|------|------|-------|
| Transmitter                |        |      |         |      |      |       |
| Optical Modulation         | POMA   | 2    |         | 8    | dBm  |       |
| Average Output Power       | POUT   | 2    |         | 7    | dBm  |       |
| Average Output Power(Laser | POFF   |      |         | -30  | dBm  |       |

| Wavelength                    | $\lambda$       | 1281 | 1295 | 1297 | nm    |   |
|-------------------------------|-----------------|------|------|------|-------|---|
|                               |                 | 1306 | 1309 | 1322 |       |   |
| Spectrum Bandwidth @ -        | $\Delta\lambda$ |      |      | 1    | nm    |   |
| Side mode suppression         | SMSR            | 30   |      |      | dB    |   |
| Extinction ratio              | ER              | 8    |      |      | dB    |   |
| Transmitter and dispersion    |                 |      |      | 2.7  | dB    |   |
| RIN20OMA                      | RIN             |      |      | -130 | dB/Hz |   |
| Receiver                      |                 |      |      |      |       |   |
| Wavelength                    | $\lambda$       | 1306 | 1309 | 1322 | nm    |   |
|                               |                 | 1281 | 1295 | 1297 |       |   |
| Received Sensitivity          | PSEN            |      |      | -24  | dBm   | 1 |
| Optical Power Overload        | PIN(SAT)        | -4   |      |      | dBm   |   |
| Damage threshold              |                 | 3    |      |      | dBm   | 2 |
| Rx_LOS of Signal Assert       | PA              | -40  |      |      | dBm   |   |
| Rx_LOS of Signal De-assert    | PD              |      |      | -28  | dBm   |   |
| Rx_LOS of Signal Hysteresis   | PHy             | 0.5  |      | 5    | dB    |   |
| Optical Return Loss Tolerance | ORLT            | 20   |      |      | dB    |   |

Notes:

1. Test pattern: PRBS31. BER<5x10<sup>-5</sup>;
- 2.The receiver shall be able to tolerate, without damage, continuous exposure to an optical input signal having this average power level. The receiver does not have to operate correctly at this input power.

## Digital Diagnostics

| Parameter       | Range        | Accuracy | Unit | Calibration |
|-----------------|--------------|----------|------|-------------|
| Temperature     | 0 to 70      | ±3       | °C   | Internal    |
| Voltage         | 3.13 to 3.47 | ±3%      | V    | Internal    |
| Tx Bias Current | 0 to 100     | ±10%     | mA   | Internal    |
| Tx Output Power | 2 to 7       | ±3       | dB   | Internal    |
| Rx Input Power  | -24 to -4    | ±3       | dB   | Internal    |