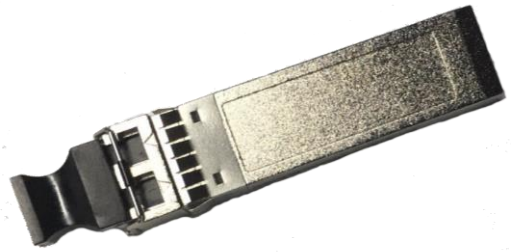
# 32GFC SFP28 SR 100m Transceiver
# SLT0SPSR032GT85x

## Features



- Support 28.05Gb/s bit rate
- Compliant to SFP+ Electrical MSA SFF-8431
- Compliant to SFP+ Mechanical MSA SFF-8432
- Transmission distance up to 100m (OM4)
- +3.3V single power supply
- Low power consumption
- Operating case temp
  Commercial: 0°C to +70 °C
  Industrial: -40 ~ +85 °C
- RoHS compliant

## Applications

- 32G Fiber channel
- 25GBASE-SR Ethernet
- Other optical links;

## Order Information

| Part No. | Bit Rate (Gbps) | Laser (nm) | Distance [1] | Fiber Type | DDMI | Connector | Temp[2] |
|---|---|---|---|---|---|---|---|
| SLT0SPSR032GT85C | 28.05 | 850 | 100m | MMF | YES | LC | 0℃~+70℃ |
| SLT0SPSR032GT85I | 28.05 | 850 | 100m | MMF | YES | LC | -40℃~+85℃ |

Note:

1. OM4 fiber, 70m for OM3 fiber
2. Case Temperature

# I. Absolute Maximum Ratings

It has to be noted that the operation in excess of any individual absolute maximum ratings might cause permanent damage to this module.

| Parameter | Symbol | Min. | Typical | Max. | Unit | Notes |
|---|---|---|---|---|---|---|
| Supply Voltage | $Vcc_3$ | -0.5 | - | +3.6 | V | |
| Storage Temperature | $T_s$ | -40 | - | +85 | ℃ | |
| Operating Humidity | RH | +5 | - | +85 | % | 1 |
| Receiver Damage Threshold per Lane | $P_{IND}$ | +3.4 | - | - | dBm | |

Note: 1 No condensation

# II. Recommended Operating Conditions

| Parameter | Symbol | Min. | Typical | Max. | Unit | Notes |
|---|---|---|---|---|---|---|
| Operating Case Temperature | $T_C$ | -40 | - | +85 | ℃ | |
| Power Supply Voltage | Vcc | 3.14 | 3.3 | 3.47 | V | |
| Power Dissipation | Pd | - | - | 1 | W | |
| Bit Rate | BR | - | - | 28.05 | Gbps | |

# III. Electrical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Units | Notes |
|---|---|---|---|---|---|---|
| Input Logic Level High | $V_{IH}$ | 2.0 | - | $V_{CC}$+0.3 | V | |
| Input Logic Level Low | $V_{IL}$ | $V_{EE}$-0.3 | - | 0.8 | V | |
| Output Logic Level High | $V_{OH}$ | 2.0 | - | $V_{CC}$+0.3 | V | |
| Output Logic Level Low | $V_{OL}$ | 0 | - | 0.4 | V | |
| **Transmitter** | | | | | | |
| Differential Data Input Swing | $V_{in,P-P}$ | 200 | - | 1000 | $mV_{PP}$ | |
| Input Differential Impedance | $Z_{IN}$ | 90 | 100 | 110 | Ω | |
| **Receiver** | | | | | | |
| Differential Date Output Swing | $V_{out}$ | 200 | - | 1000 | mV | |
| Output Differential Impedance | $Z_D$ | 90 | 100 | 110 | Ω | |

# IV. Optical Characteristics

| Parameter | Symbol | Unit | Min | Typ. | Max | Notes |
|---|---|---|---|---|---|---|
| **Optical transmitter Characteristics** | | | | | | |
| Bit Rate | BR | Gbps | | 28.05 | - | |
| Center Wavelength Range | λc | nm | 840 | 850 | 860 | |
| RMS Spectral Width | Δλ | nm | - | - | 0.6 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Average Launch power Tx_off | Poff | dBm | - | - | -30 | |
| Launch Optical Power | $P_0$ | dBm | -5 | | 2.4 | 1 |
| Extinction Ratio | ER | dB | 2.5 | - | - | |
| **Optical Receiver Characteristics** | | | | | | |
| Bit Rate | BR | Gbps | | - | 28.05 | |
| Sensitivity | BER | dBm | - | - | -10.0 | |
| Overload Input Optical Power | $P_{IN}$ | dBm | 2 | - | - | 2 |
| Center Wavelength Range | λc | nm | 840 | - | 860 | |
| LOS Assert | - | dBm | -30 | - | - | |
| LOS De-Assert | - | dBm | - | - | -16 | |
| LOS Hysteresis | - | dB | 0.5 | - | - | |

Note:

1. Coupled into 50/125 MMF.
2. Measured with PRBS $2^{31}$-1 test pattern @28.05Gbps.BER=5E-5

## V. Pin arrangement

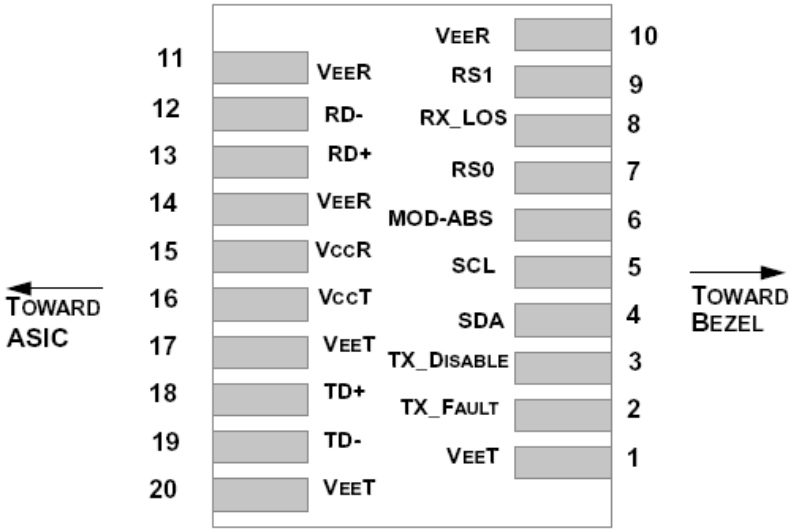



Figure 1, Pin View

| Pin | Symbol | Name/Description | Notes |
|---|---|---|---|
| 1 | $V_{EE}T$ | Module Transmitter Ground | 1 |
| 2 | TX_FAULT | Module Transmitter Fault | 2 |
| 3 | TX_DISABLE | Transmitter Disable; Turns off transmitter laser output | 3 |
| 4 | SDA | 2-Wire Serial Interface Data Line (MOD-DEF2) | 2 |
| 5 | SCL | 2-Wire Serial Interface Clock (MOD-DEF1) | 2 |
| 6 | MOD_ABS | Module Absent, connected to $V_{EE}T$ or $V_{EE}R$ in the module | |
| 7 | RS0 | Rate Select 0, optionally controls SFP+ module receiver | |

| | | | |
|---|---|---|---|
| 8 | RX_LOS | Receiver Loss of Signal Indication (In FC designated as Rx_LOS and in Ethernet designated as NOT Signal Detect) | 2 |
| 9 | RS1 | Rate Select 1, optionally controls SFP+ module transmitter | |
| 10 | $V_{EE}R$ | Module Receiver Ground | 1 |
| 11 | $V_{EE}R$ | Module Receiver Ground | 1 |
| 12 | RD- | Receiver Inverted Data Output | |
| 13 | RD+ | Receiver Non-Inverted Data Output | |
| 14 | $V_{EE}R$ | Module Receiver Ground | 1 |
| 15 | $V_{CC}R$ | Module Receiver 3.3 V Supply | |
| 16 | $V_{CC}T$ | Module Transmitter 3.3 V Supply | |
| 17 | $V_{EE}T$ | Module Transmitter Ground | 1 |
| 18 | TD+ | Transmitter Non-Inverted Data Input | |
| 19 | TD- | Transmitter Inverted Data Input | |
| 20 | $V_{EE}T$ | Module Transmitter Ground | 1 |

Note:

1. Circuit ground is internally isolated from chassis ground.
2. The pins shall be pulled up with 4.7K-10Kohms to a voltage between 3.14V and 3.46V on host board.
3. The pin is pulled up to VCCT with a 4.7K-10KΩ resistor in the module.

## VI. Mechanical

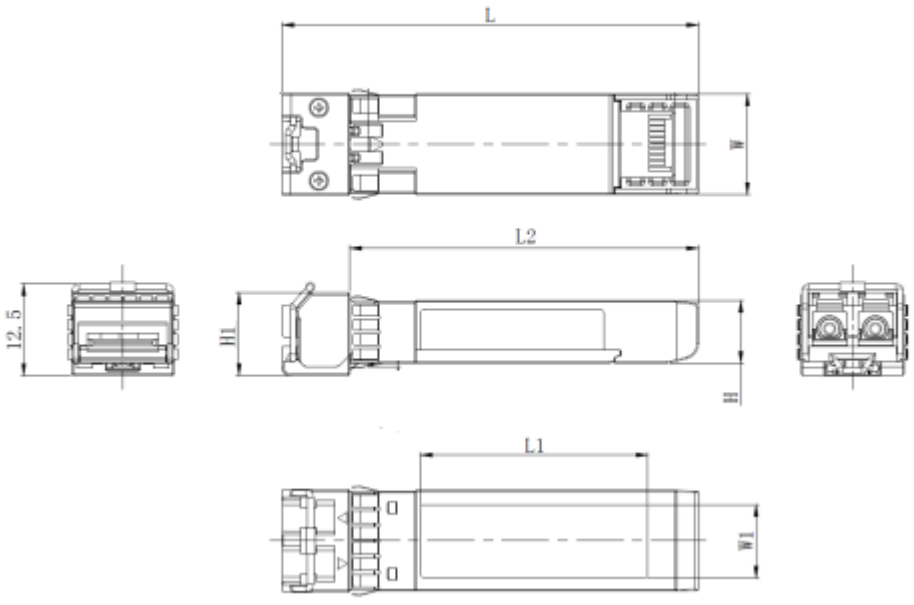



Figure 2, Mechanical Diagram

Unit: mm

| | L | L1 | L2 | W | W1 | H | H1 |
|---|---|---|---|---|---|---|---|
| Max. | 56.9 | 31.2 | 47.7 | 13.9 | 10.2 | 8.6 | 11.5 |
| Typ. | 56.7 | 31 | 47.5 | 13.7 | 10.0 | 8.5 | 11.3 |
| Min. | 56.5 | 30.8 | 47.3 | 13.5 | 9.8 | 8.3 | 11.1 |

## VII. Revision history

| Version | Initiated | Reviewed | Revision | Release Date |
|---|---|---|---|---|
| A0 | Tony | Jack | New Release | 2022-09-09 |
| | | | | |

## VIII. Warnings

**Handling Precautions:** This device is susceptible to damage as a result of electrostatic discharge (ESD).
A static free environment is highly recommended. Follow guidelines according to proper ESD procedures.
**Laser Safety:** Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

## IX. Contact Information

Sales@suliton.com