

Overview

Viruni's VN-U5533Z4-PEN32 Small Form Factor Pluggable (SFP+) transceivers are compatible with SFF-8431, SFF-8432 and support 10G Ethernet LR and 10G Fibre Channel. It is designed for use in 10G-Gigabit multi-rate links up to 10km of G.652. Digital diagnostics functions are available via a 2-wire serial interface, as specified in SFF-8472.

Key Features

- Duplex LC connector
- Hot-pluggable SFP footprint
- Uncooled 1310nm DFB laser
- RoHS compliant and Lead Free
- Distance up to 10km on 9/125um SMF
- Metal enclosure for lower EMI
- Low power dissipation <1.0W
- SFP MSA SFF-8472 SFF-8431 SFF-8432 Compliant



Absolute Maximum Ratings

| Parameter | Symbol | Min | Typ | Max | Unit | Notes |
|------------------------|--------|------|-----|------|------|-------|
| Maximum Supply Voltage | Vc | -0.5 | | +4.0 | V | |
| Storage Temperature | TS | -40 | | +85 | °C | |
| Operating Humidity | RH | 0 | | 85 | % | |

Recommended Operating Conditions

| Parameter | Symbol | Min | Typ | Max | Unit | Notes |
|----------------------------|--------|------|------|------|------|-------|
| Power Supply Voltage | Vcc | 3.13 | 3.30 | 3.47 | V | |
| Power Supply Current | Icc | | | 300 | mA | |
| Case Operating Temperature | Tc | 0 | | +70 | °C | |
| 9/125um G.652 SMF | Lmax | | | 10 | km | |
| Data Rate | | | 10.3 | | Gbps | |

Electrical Characteristics (TOP=25°C, Vcc=3.3Volts)

| Parameter | Symbol | Min | Typ | Max | Unit | Ref. |
|--------------------------------|----------|-----------|-----|----------|------|------|
| Transmitter | | | | | | |
| Input differential impedance | Rin | 80 | 100 | 120 | Ω | 1 |
| Differential data input swing | Vin, pp | 120 | | 850 | mV | |
| TX Disable-High | - | Vcc – 0.8 | | Vcc | V | |
| TX Disable-Low | - | Vee | | Vee+ 0.8 | V | |
| TX Fault-High | - | Vcc-0.8 | | Vcc | V | |
| TX Fault-Low | - | Vee | | Vee+0.8 | V | |
| Receiver | | | | | | |
| Differential data output swing | Vout, pp | 300 | | 850 | mV | 2 |
| Data output rise time | Tr | 28 | | | ps | 3 |
| Data output fall time | Tf | 28 | | | ps | 3 |
| LOS-High | | Vcc – 0.8 | | Vcc | V | |
| LOS-Low | | Vee | | Vee+0.8 | V | |

Notes:

1. AC coupled.
2. Into 100 ohm differential termination.
3. 20 – 80 %.

Optical Characteristics

| Parameter | Symbol | Min | Typ | Max | Unit | Notes |
|---------------------------------------|-----------------|------|------|-------|------|-------|
| Transmitter | | | | | | |
| Output Opt. Power | PO | -8.2 | | +0.5 | dBm | |
| Optical Wavelength | λ | 1260 | 1310 | 1355 | nm | |
| Side-Mode Suppression Ratio | SMSR | 30 | | | dB | |
| Spectral Width(-20dB) | $\Delta\lambda$ | | | 1 | nm | |
| Optical Extinction Ratio | ER | 3.5 | | | dB | |
| Receiver | | | | | | |
| RX Sensitivity @10.3Gb/s | SENS1 | | | -14.4 | dBm | 1,2 |
| Receiver Sensitivity (OMA) @ 10.3Gb/s | SENS2 | | | -12.6 | dBm | 1,2 |
| Receiver Overload | | 0.5 | | | dBm | |
| Optical Center Wavelength | λ_C | 1260 | | 1610 | nm | |
| LOS De-Assert | LOSD | | | -15 | dBm | |
| LOS Assert | LOSA | -30 | | | dBm | |
| LOS Hysteresis | | 0.5 | | 5 | dB | |

Notes:

1. Measured with conformance signals defined in FC-PI-2 Rev. 10.0 specifications.
2. Measured with PRBS 2³¹-1 at 10⁻¹² BER.

Order Information

| Model | Description |
|------------------|---|
| VN-U5533Z4-PEN32 | 10G SFP+ 1310nm 10Km LC DDM Single-mode |