

Features

- Up to 1.25Gb/s data links
- DFB laser transmitter and PIN photo-detector
- Up to 40km on 9/125µm SMF
- GBIC footprint
- Duplex SC/UPC type pluggable optical interface
- Low power dissipation
- Metal enclosure, for lower EMI
- RoHS compliant and lead-free
- Single +5V power supply
- Compliant with SFF-8472
- Case operation Temperature: 0°C to +70°C



Applications

- Switch to Switch Interface
- Gigabit Ethernet
- Switched Backplane Applications
- Router/Server Interface
- Other Optical Links

Absolute Maximum Ratings

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Note |
|---------------------------|--------|------|------|------|------|------|
| Storage Temperature | Ts | -40 | | 85 | °C | |
| Storage Ambient Humidity | HA | 5 | | 95 | % | |
| Power Supply Voltage | VCC | 0 | | 6 | V | |
| Signal Input Voltage | | 0 | | Vcc | V | |
| Receiver Damage Threshold | | 5 | | | dBm | |

Recommended Operating Conditions

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Note | |
|------------------------------|--------|-------------------|-----------|------|-------|-----------------|-------------|
| Case Operating Temperature | Tcase | 0 | | 70 | °C | | |
| Ambient Humidity | HA | 5 | | 70 | % | Non-condensing | |
| Power Supply Voltage | VCC | 4.75 | 5 | 5.25 | V | | |
| Power Supply Current | ICC | | | 300 | mA | | |
| Power Supply Noise Rejection | | | | 100 | mVp-p | 100Hz to 1MHz | |
| Data Rate | | | 1250/1250 | | Mbps | TX Rate/RX Rate | |
| Transmission Distance | | | | 40 | KM | | |
| Coupled Fiber | | Single mode fiber | | | | | 9/125um SMF |

Specification of Transmitter

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Note |
|----------------------|--------|------|------|------|------|----------|
| Average Output Power | POUT | -5 | | 0 | dBm | Note (1) |

| | | | | | | | |
|-----------------------------------|---|------|------|------|-----|-----------|--|
| Extinction Ratio | ER | 9 | | | dB | DFB Laser | |
| Center Wavelength | λC | 1290 | 1310 | 1330 | nm | | |
| Side Mode Suppression Ratio | SMSR | 30 | | | dB | | |
| Spectrum Bandwidth(-20dB) | σ | | | 1 | nm | | |
| Transmitter OFF Output Power | POff | | | -45 | dBm | | |
| Differential Line Input Impedance | RIN | 90 | 100 | 110 | Ohm | | |
| Output Eye Mask | Compliant with IEEE802.3 z (class 1 laser safety) | | | | | | |

Note (1): Measure at 2⁷-1 NRZ PRBS pattern.

Specification of Receiver

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Note |
|-----------------------------------|--------------|------|------|------|------|----------|
| Input Optical Wavelength | λIN | 1270 | | 1610 | nm | PIN-TIA |
| Receiver Sensitivity | PIN | | | -24 | dBm | Note (1) |
| Input Saturation Power (Overload) | PSAT | -1 | | | dBm | |
| Los Of Signal Assert | PA | | | -24 | dBm | |
| Los Of Signal De-assert | PD | -38 | | | dBm | Note (2) |
| LOS Hysteresis | PA-PD | 0.5 | 2 | 6 | dB | |

Note (1): Measured with Light source 1310nm, ER=9dB; BER = 10^{-12} @PRBS=2⁷-1 NRZ.

Note (2): When LOS de-asserted, the RX data+/- output is High-level (fixed)

Electrical Interface Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Note |
|--------------------------------|--------|------|------|----------------------|------|----------|
| Transmitter | | | | | | |
| Total Supply Current | ICC | | | A | mA | Note (1) |
| Transmitter Disable Input-High | VDISH | 2 | | V _{CC} +0.3 | V | |
| Transmitter Disable Input-Low | VDISL | 0 | | 0.8 | V | |
| Transmitter Fault Input-High | VDISL | 2 | | V _{CC} +0.3 | V | |
| Transmitter Fault Input-Low | VTxFH | 0 | | 0.8 | V | |
| Receiver | | | | | | |
| Total Supply Current | ICC | | | B | mA | Note (1) |
| LOSS Output Voltage-High | VLOSH | 2 | | V _{CC} +0.3 | V | LVTTL |
| LOSS Output Voltage-Low | VLOSL | 0 | | 0.8 | V | |

Note (1): A (TX) + B (RX) = 300mA (Not include termination circuit)

Ordering Information

| Part number | Description | TX Power (dBm) | RX Sens. (dBm) | Fiber Budget (dB) | Distance (km) | DDM |
|------------------|--|----------------|----------------|-------------------|---------------|-----|
| SV-GB-LX4 | Starview GBIC module, 1Gbps Fiber Channel/ 1000Base-LX 1310nm SM (SC), distance up to 40km | -5 to 0 | -24 to -1 | 19 | 40 | NO |