

SV-SFP-LXD2

1.25Gb/s, 1310nm, Single mode, 20km, with DDM Function



Features

- Up to 1.25Gb/s data links
- FP laser transmitter and PIN photo-detector
- Up to 20km on 9/125µm SMF
- Hot-pluggable SFP footprint
- Duplex LC/UPC type pluggable optical interface
- Low power dissipation
- Metal enclosure, for lower EMI
- RoHS compliant and lead-free
- Support Digital Diagnostic Monitoring interface
- Single +3.3V power supply
- Compliant with SFF-8472
- Case operating temperature
- Commercial: 0°C to +70°C
- Industrial: -40°C to +85°C

Applications

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

Ordering Information

| Part number | Description | TX Power (dBm) | RX Sens. (dBm) | Fiber Budget (dB) | Distance (km) | DDM |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|-------------------|---------------|-----|
| SV-SFP-LXD2 | Starview SFP module with Digital Diagnostic Monitoring (DDM), 1000Base-LX 1310nm SM (LC), distance up to 20km | -9 to -3 | -20 to -3 | 11 | 20 | YES |
| SV-SFP-LXD2H | Starview SFP module with Digital Diagnostic Monitoring (DDM), 1000Base-LX 1310nm SM (LC), Industrial temperature range, distance up to 20km | -9 to -3 | -20 to -3 | 11 | 20 | YES |

Absolute Maximum Ratings

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|---------------------------|--------|------|------|---------|------|
| Storage Temperature | Ts | -40 | | 85 | °C |
| Relative Humidity | RH | 5 | | 95 | % |
| Power Supply Voltage | VCC | -0.5 | | 4 | V |
| Signal Input Voltage | | -0.3 | | Vcc+0.3 | V |
| Receiver Damage Threshold | | +5 | | | dBm |

Recommended Operating Conditions

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Note |
|------------------------------|--------|------|-------------------|------|-------|-----------------|
| Case Operating Temperature | Tcase | 0 | | 70 | °C | SV-SFP-LXD2 |
| | | -10 | | 80 | | |
| | | -40 | | 85 | | SV-SFP-LXD2H |
| Power Supply Voltage | VCC | 3.13 | 3.3 | 3.47 | V | |
| Power Supply Current | ICC | | | 280 | mA | |
| Power Supply Noise Rejection | | | | 100 | mVp-p | 100Hz to 1MHz |
| Data Rate | | | 1250/1250 | | Mbps | TX Rate/RX Rate |
| Transmission Distance | | | | 20 | KM | |
| Coupled Fiber | | | Single mode fiber | | | 9/125um SMF |

Specification of Transmitter

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Note |
|-----------------------------------|---------------------------------------------------|------|------|------|------|----------|
| Average Output Power | POUT | -9 | | -3 | dBm | Note (1) |
| Extinction Ratio | ER | 9 | | | dB | |
| Center Wavelength | λ_C | 1270 | 1310 | 1360 | nm | FP Laser |
| Spectrum Bandwidth(RMS) | σ | | | 3.5 | 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 | λ_{IN} | 1270 | | 1610 | nm | PIN-TIA |
| Receiver Sensitivity | PIN | | | -20 | dBm | Note (1) |
| Input Saturation Power (Overload) | PSAT | -3 | | | dBm | |
| Los Of Signal Assert | PA | | | -22 | dBm | |
| Los Of Signal De-assert | PD | -35 | | | 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 SD De-Assert, the RX-LOS 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 | VTxFH | 2 | | V _{CC} +0.3 | V | |
| Transmitter Fault Input-Low | VTxFL | 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) = 280mA (Not include termination circuit)