



niveo
P R O F E S S I O N A L



N10GMM, (850 nm Multimode XFP 10G (MM, GBIC))
10GFC 1200-MX-SN-I(Fiber Channel), 10GBASE-SR(Ethernet)

More information:

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Product Specification

Features

- Multi Mode 10G Fiber Module
- Compliant with 10GFC-1200MX-SN-I Fiber Channel Standard
- Compliant with IEEE802.3ae 10GBASE SW/SR Ethernet Standard
- Compliant with XFP MSA INF-80771
- Differential CML inputs and CML outputs
- Differential PECL reference clock input (1/64 transmitter data)
- Single Power supply 3.3V
- TTL signal detect indicator
- Hot Pluggable
- Class 1 laser product complies with EN 60825-1

Absolute Maximum Ratings

| PARAMETER | SYMBOL | MIN | MAX | UNITS | NOTE |
|---------------------|-----------|------|----------|-------|------|
| Storage Temperature | T_s | -40 | 85 | °C | |
| Supply Voltage | V_{cc3} | -0.5 | 4.0 | V | |
| Input Voltage | V_{IN} | -0.5 | V_{cc} | V | |

Recommended Operating Conditions

| PARAMETER | SYMBOL | MIN | MAX | UNITS | NOTE |
|----------------------------|-----------|-----|-----|-------|------|
| Case operating Temperature | T_c | -10 | 70 | °C | |
| Supply Voltage | V_{cc3} | 3.1 | 3.5 | V | |
| Supply Current | I_{cc3} | --- | 400 | mA | |

Transmitter Electro-optical Characteristics

$V_{CC} = 3.1 \text{ V to } 3.5 \text{ V}$, $T_C = -10 \text{ }^\circ\text{C to } 70 \text{ }^\circ\text{C}$

| PARAMETER | SYMBOL | MIN | TYP. | MAX | UNITS | NOTE |
|-----------------------------------------------------------------------------------------------------------|----------------------------------|------|--------------------------------|------|---------------|-------------------------------------|
| Operating Data Rate | | | 9.95/ 10.51875 | | Gbps | |
| Input Reference Clock Rate | | | 1/64 Operating Data Rate | | | |
| Output Optical Power (50/125 μm fiber, NA=0.20) (62.5/125 μm fiber, NA=0.275) | P_{out} | -7.1 | --- | -1 | dBm | |
| Optical Modulation Amplitude (OMA) | OMA | --- | --- | --- | dBm | Refer to IEEE 802.3ae Table 52-3 |
| Extinction Ratio | ER | 3 | | | dB | |
| Center Wavelength | λ_C | 840 | | 860 | nm | |
| Spectral Width (RMS) | $\Delta\lambda$ | --- | --- | --- | nm | Refer to IEEE 802.3ae Table 52-8 |
| Relative Intensity Noise | RIN | --- | --- | -128 | dB/Hz | |
| Output Eye | | | Compliant with IEEE802.3ae | | | |
| Differential Input Voltage | V_{DIFF} | 0.25 | --- | 1.0 | V | |
| TX_DISABLE Assert Time | t_{off} | --- | --- | 10 | μs | |
| TX_DISABLE Negate Time | t_{on} | --- | --- | 2 | ms | |
| Time to initialize | t_{init} | --- | --- | 300 | ms | |
| nterrupt assert delay | $\overline{\text{nterrupt_on}}$ | --- | --- | 200 | ms | |



Receiver Electro-optical Characteristics

$V_{CC} = 3.1 \text{ V to } 3.5 \text{ V}$, $T_C = -10^\circ\text{C to } 70^\circ\text{C}$

| PARAMETER | SYMBOL | MIN | TYP. | MAX | UNITS | NOTE |
|-------------------------------------------------|-----------------|-------|------|----------|---------------|------------------|
| Optical Input Power-maximum | P_{IN} | -1 | --- | --- | dBm | BER < 10^{-12} |
| Receiver Sensitivity | P_{IN} | --- | --- | -9.9 | dBm | BER < 10^{-12} |
| Receiver Sensitivity in OMA | P_{IN} | --- | --- | -11.1 | dBm | BER < 10^{-12} |
| Operating Center Wavelength | λ_C | 840 | --- | 860 | nm | |
| Optical Return Loss | ORL | 12 | --- | --- | dB | |
| Loss of Signal-Asserted | P_A | --- | --- | -20 | dBm | |
| Loss of Signal-Deasserted | P_D | -12 | --- | --- | dBm | |
| Differential Output Voltage | V_{DIFF} | 0.575 | --- | 0.725 | V | |
| TTL Input High Voltage | | 2 | | V_{CC} | V | |
| TTL Input Low Voltage | | 0 | | 0.8 | V | |
| TTL Output High Voltage | | 2.4 | --- | V_{CC} | V | |
| TTL Output Low Voltage | | 0 | --- | 0.4 | V | |
| Receiver Loss of Signal Assert Time (off to on) | t_{A,RX_LOS} | --- | --- | 100 | μs | |
| Receiver Loss of Signal Assert Time (on to off) | t_{D,RX_LOS} | --- | --- | 100 | μs | |
| I2C Clock Frequency | | | | 400 | kHz | |