# Maipu 100G QSFP28 ER4 40KM Transceiver
# QSFP28-S1-L1920C3D

## Overview

Maipu QSFP28-S1-L1920C3D is compliant with QSFP28 MSA, IEEE 802.3bm. It is cost-effective, low power consumption with a single 3.3V power supply. The module has an aggregate bit rate up to 103.125Gbps by multiplexing of 4 independent LAN-WDM optical lanes, each lane capable of transmitting 25Gb/s over 10km SMF with FEC. It is fabricated with all-metal and compact size housing for superior EMI performance.

## Key Features

- Compliant with 100G Ethernet IEEE 802.3bm 100GBASE
- Duplex LC optical connector
- 4*25Gb/s 1310nm DFB laser transmitter
- RoHS compliant and Lead Free
- Distance up to 10km on single mode fiber
- Metal enclosure for lower EMI
- Low Power Consumption <4.5W
- Operating case temperature: 0℃ to 70℃

# 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 | |
| Supply Current | Icc | | | 1.36 | A | |
| Case Operating Temperature | Tc | 0 | | 70 | °C | |
| Data Rate, each lane | | | 25.78 | | Gbps | |
| 9/125um G.652 SMF | | | | 10 | km | |

# Electrical Characteristics

| Parameter | Symbol | Min | Typ | Max | Unit | Notes |
|---|---|---|---|---|---|---|
| **Transmitter** | | | | | | |
| Input differential impedance | Rin | 90 | 100 | 110 | Ω | 1 |
| Differential data input swing | Vin, pp | 95 | - | 900 | 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** | | | | | | |
| Output differential impedance | Rin | 90 | 100 | 110 | Ω | 1 |
| Differential data output swing | Vin, pp | - | - | 900 | mV | 2 |
| LOS-High | | Vcc-0.8 | | Vcc | V | |
| LOS-Low | | Vee | | Vee+0.8 | V | |

# Optical Characteristics

| Parameter | Symbol | Min | Typ | Max | Unit | Notes |
|---|---|---|---|---|---|---|
| **Transmitter (DML)** | | | | | | |
| Total Average Launch Power | PT | | | 10.5 | dBm | |
| Optical wavelengths | L0 | 1294.53 | 1295.56 | 1296.59 | nm | |
| | L1 | 1299.02 | 1300.05 | 1301.09 | nm | |
| | L2 | 1303.54 | 1304.58 | 1305.63 | nm | |
| | L3 | 1308.09 | 1309.14 | 1310.19 | nm | |
| Side-mode Suppression Ratio | SMSR | 30 | | | dB | |
| Average Launch Power, each Lane | | -4.3 | | 4.5 | dBm | |
| Optical Modulation Amplitude, each Lane | OMA | -1.3 | | +4.5 | dBm | |
| Extinction Ratio | ER | 4 | | | dB | |
| **Receiver(APD)** | | | | | | |
| RX Sensitivity @25.78 Gb/s, each lane | SENS | | | -10.6 | dBm | 1 |
| RX Sensitivity(OMA) @25.78 Gb/s, each lane | SENS | | | -8.6 | dBm | 2 |
| Receiver Overload | | 4.5 | | | dBm | |
| Los De-Assert | LosD | | | -12 | dBm | |
| Los Assert | LosA | -25 | | | dBm | |
| Los Hysteresis | LosH | 0.5 | | | dB | |

# Order Information

| Model | Description |
|---|---|
| QSFP28-S1-L1920C3D | 100G QSFP28, 1310nm, 10km, LC, DDM, Single-mode |

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