

# 10GBPS 850NM 300M SFP OPTICAL TRANSCEIVER



## HIGH-SPEED & EXTENDED TRANSMISSION:

Supports a data rate of 10Gbps with a maximum link length of 300m on 2000MHz/km MMF. Ensures fast, stable, and extended data transmission capabilities.

The transceiver is compatible with major brands in the industry, ensuring seamless integration into existing network infrastructures.



## ADVANCED DIGITAL DIAGNOSTIC FUNCTIONS:

Features a unique enhanced digital diagnostic monitoring interface, providing real-time access to vital device operating parameters. This includes monitoring of transceiver temperature, laser bias current, transmitted/received optical power, and supply voltage. A sophisticated system of alarm and warning flags alerts users to any deviations from normal operating parameters.



## COMPREHENSIVE IDENTIFICATION INTELLIGENT CONTROLLER & COMPATIBILITY:

Adheres to the SFP MSA1, offering a standard serial ID that provides detailed identification information about the transceiver's capabilities, interfaces, and manufacturer details. The all-metal housing ensures superior EMI performance, and the transceiver is RoHS6 compliant.



## INTELLIGENT CONTROLLER & SEAMLESS INTEGRATION:

Equipped with a Digital Diagnostics Transceiver Controller (DDTC) for monitoring and reporting. The 2-wire serial interface, in conjunction with the SFP MSA-defined memory map, ensures seamless integration and compatibility with host systems, allowing for efficient data transfer and management.

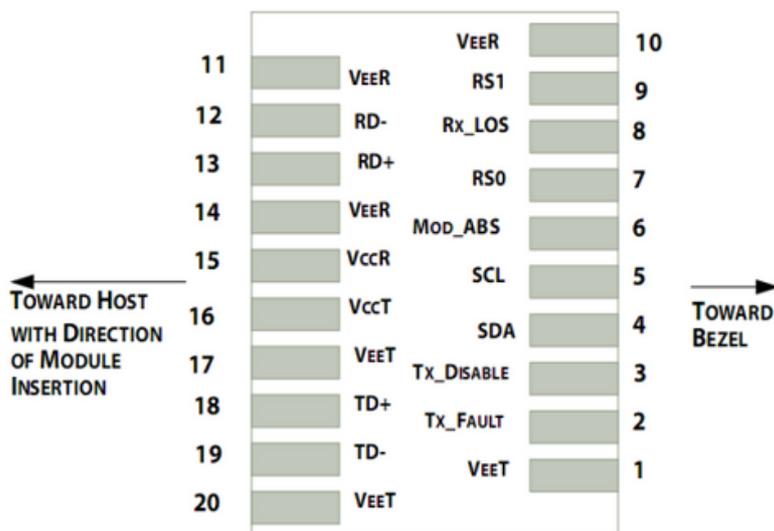
# ELECTRICAL CHARACTERISTICS

| Parameter                      | Symbol              | Min                  | Typ | Max                   | Unit | Ref. |
|--------------------------------|---------------------|----------------------|-----|-----------------------|------|------|
| Supply Voltage                 | V <sub>cc</sub>     | 3.14                 | 3.3 | 3.46                  | V    |      |
| Supply Current                 | I <sub>cc</sub>     |                      |     | 250                   | mA   |      |
| <b>Transmitter</b>             |                     |                      |     |                       |      |      |
| Input differential impedance   | R <sub>in</sub>     |                      | 100 |                       | Ω    | 1    |
| Single ended data input swing  | V <sub>in,pp</sub>  | 180                  |     | 700                   | mV   |      |
| Transmit Disable Voltage       | VD                  | V <sub>cc</sub> -1.3 |     | V <sub>cc</sub>       | V    |      |
| Transmit Enable Voltage        | VEN                 | V <sub>ee</sub>      |     | V <sub>ee</sub> + 0.8 | V    | 2    |
| Transmit Disable Assert Time   |                     |                      |     | 10                    | us   |      |
| <b>Receiver</b>                |                     |                      |     |                       |      |      |
| Differential data output swing | V <sub>out,pp</sub> | 300                  |     | 850                   | mV   | 3    |
| Data output rise time          | t <sub>r</sub>      | 28                   |     |                       | ps   | 4    |
| Data output fall time          | t <sub>f</sub>      | 28                   |     |                       | ps   | 4    |
| LOS Fault                      | VLOS fault          | V <sub>cc</sub> -1.3 |     | V <sub>cc</sub> HOST  | V    | 5    |
| LOS Normal                     | VLOS norm           | V <sub>ee</sub>      |     | V <sub>ee</sub> +0.8  | V    | 5    |
| Power Supply Rejection         | PSR                 | 100                  |     |                       | mVpp | 6    |

# OPTICAL CHARACTERISTICS

| Parameter                         | Symbol                       | Min | Typ | Max  | Unit  | Ref. |
|-----------------------------------|------------------------------|-----|-----|------|-------|------|
| <b>Transmitter</b>                |                              |     |     |      |       |      |
| Output Opt. Pwr                   | POUT                         | -6  |     | -1   | dBm   | 1    |
| Optical Wavelength                | λ                            | 840 | 850 | 860  | nm    |      |
| Optical Extinction Ratio          | ER                           | 3.0 |     |      | dB    |      |
| RIN                               | RIN                          |     |     | -128 | dB/Hz |      |
| Output Eye Mask                   | Compliant with IEEE 0802.3ae |     |     |      |       |      |
| <b>Receiver</b>                   |                              |     |     |      |       |      |
| Rx Sensitivity                    | RSENS                        |     |     | -10  | dBm   | 2    |
| Input Saturation Power (Overload) | P <sub>sat</sub>             | 0.5 |     |      | dBm   |      |
| Wavelength Range                  | λ <sub>C</sub>               | 770 | 850 | 860  | nm    |      |
| LOS De -Assert                    | LOSD                         |     |     | -14  | dBm   |      |
| LOS Assert                        | LOSA                         | -30 |     |      | dBm   |      |
| LOS Hysteresis                    |                              | 0.5 |     |      | dB    |      |

## PIN DESCRIPTIONS



| Pin | Symbol  | Name/Description   | Ref. |
|-----|---------|--|------|
| 1   | VEET    | Transmitter Ground (Common with Receiver Ground)               | 1    |
| 2   | TFAULT  | Transmitter Fault.   | 2    |
| 3   | TDIS    | Transmitter Disable. Laser output disabled on high or open.    | 3    |
| 4   | SDA     | 2-wire Serial Interface Data Line                              | 4    |
| 5   | SCL     | 2-wire Serial Interface Clock Line                             | 4    |
| 6   | MOD_ABS | Module Absent. Grounded within the module                      | 4    |
| 7   | RS0     | Rate Select 0  | 5    |
| 8   | LOS     | Loss of Signal indication. Logic 0 indicates normal operation. | 6    |
| 9   | RS1     | No connection required   | 1    |
| 10  | VEER    | Receiver Ground (Common with Transmitter Ground)               | 1    |
| 11  | VEER    | Receiver Ground (Common with Transmitter Ground)               | 1    |
| 12  | RD-     | Receiver Inverted DATA out. AC Coupled                         |      |
| 13  | RD+     | Receiver Non-inverted DATA out. AC Coupled                     |      |
| 14  | VEER    | Receiver Ground (Common with Transmitter Ground)               | 1    |
| 15  | VCCR    | Receiver Power Supply  |      |
| 16  | VCCT    | Transmitter Power Supply                                       |      |
| 17  | VEET    | Transmitter Ground (Common with Receiver Ground)               | 1    |
| 18  | TD+     | Transmitter Non-Inverted DATA in. AC Coupled.                  |      |
| 19  | TD-     | Transmitter Inverted DATA in. AC Coupled.                      |      |
| 20  | VEET    | Transmitter Ground (Common with Receiver Ground)               | 1    |





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