

S2885P1025xF – SFP28 Dual Fibre

850nm / 100m / 25GBASE-SR

For your product safety, please read the following information carefully before any manipulation of the transceiver:



ESD

This transceiver is specified as ESD threshold 1kV for SFI pins and 2kV for all others electrical input pins, tested per MIL-STD-883G, Method 3015.4 / JESD22-A114-A (HBM). However, normal ESD precautions are still required during the handling of this module.



LASER SAFETY

This is a Class1 Laser Product according to IEC 60825-1:2007. This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated (June 24, 2007).

The optical ports of the module need to be terminated with an optical connector or with a dust plug in order to avoid contamination.

1. Overview

S2885P1025xF is a high performance transceiver module for up to 28.05Gbps data links over a multimode fibre pair. The maximum reach is 100m (OM4) or 70m (OM3). The transmitter is an 850 nm Vertical-Cavity Surface-Emitting Laser (VCSEL), the receiver is a PIN photodiode.

This transceiver module is compliant with the SFP28 Multisource Agreement (MSA) and hot pluggable. Always contact Skylane Optics® commercial agents for compatibility with different equipment platforms.

2. Features

- Electrical interface specification as per SFF-8402
- Hot pluggable SFP+ footprint
- 25G electrical interface (CEI-28G-VSR)
- Management interface specification as per SFF-8472
- Class 1 laser safety standard IEC 60825 compliant
- Duplex LC connector
- 850 nm VCSEL transmitter
- Up to 100m/70m Point-to-Point Transmission on OM4/OM3 Multi Mode Fibre
- Built-in dual CDR
- Operating temperature range 0°C to 70°C or -40°C to 85°C
- Low power dissipation < 1W
- Digital diagnostics monitoring (DDM)

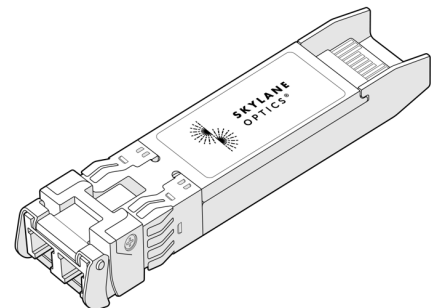


Figure 1. SFP28 Dual Fiber (non-binding illustration)

3. Applications

- 25x Gigabit Ethernet

4. Optical Interface

| P/N | Wavelength | Protocol | Optical Output Power ¹ [dBm] | Stressed Receiver Sensitivity ² (OMA) [dBm] | Optical Receiver Overload ³ [dBm] | Link Length ^{1,4} [m] |
|--------------|------------|------------|---|--|--|--------------------------------|
| S2885P1025xF | 850nm | 25GBASE-SR | -8.4 to 2.4 | ≤ -5.2 | 2.4 | ≤ 100 |

1. EOL over operating temperature range

2. 25.78Gbps, BER≤ 5×10⁻⁵, PRBS 231-1, pre-FEC

3. The optical input to the receiver should not exceed this value. Transmitters must never be directly connected to receivers before ensuring that proper optical attenuation is used

4. Cabled optical fibre as per IEEE 802.3bm-2015

5. Technical Parameters

| 5.1. Recommended Operating Conditions | | | | | |
|---------------------------------------|-------|-----|-------|------|----------------|
| Parameter | Min | Typ | Max | Unit | Notes |
| Storage temperature | -40 | | 85 | °C | |
| Operating Case Temperature | 0 | | 70 | °C | S2885P10250F |
| | -40 | | 85 | | S2885P10252F |
| Relative Humidity | 5 | | 95 | % | Non condensing |
| Power Supply Voltage | 3.135 | 3.3 | 3.465 | V | |
| Power Supply Current | | | 300 | mA | |

| 5.2. Transmitter Optical Specifications | | | | | |
|---|------|----------|-----|------|-------|
| Parameter | Min | Typ | Max | Unit | Notes |
| Data Rate | | 25.78125 | | Gbps | 5 |
| Average Output Power | -8.4 | | 2.4 | dBm | 6 |
| Launched OMA | -6.4 | | 3 | dBm | 6,7 |
| Launched OMA minus TDEC | -7.3 | | | dBm | 6 |
| Centre Wavelength | 840 | | 860 | nm | |
| Spectral Width | | | 0.6 | nm | 8 |
| Transmitter and Dispersion Eye Closure (TDEC) | | | 4.3 | dB | |
| Extinction Ratio | 2 | | | dB | |

- 5. IEEE 802.3-2012
- 6. Output power coupled into a 50/125 µm multimode fibre
- 7. Even if the TDEC is <0.9 dB, the minimum OMA must exceed -6.4dBm
- 8. Standard deviation of the spectrum

| 5.3. Receiver Optical Specifications | | | | | |
|--------------------------------------|-------|-----|------|------|-------|
| Parameter | Min | Typ | Max | Unit | Notes |
| Operating Wavelength | 840 | | 860 | nm | |
| Average Receive Power | -10.3 | | 2.4 | dBm | 9 |
| Stressed Receiver Sensitivity (OMA) | | | -5.2 | dBm | 10 |

- 9. Average receive power (min) is informative and not the principal indicator of signal strength. A received power below this value cannot be compliant; however, a value above this does not ensure compliance
- 10. 25.78Gbps, BER_s ≤ 5×10⁻⁵, PRBS 2³¹-1, pre-FEC

6. Transceiver Electrical Pad Layout

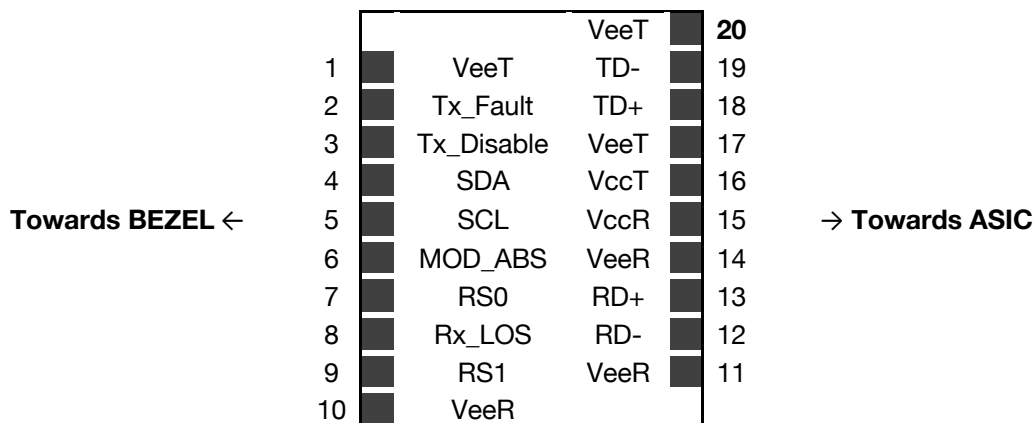


Figure 2. Transceiver Electrical Pad Layout

7. Module Electrical Pin Definition

Pin definition as per SFF-8431

| Pin Number | Name | Function |
|------------|------------|-------------------------------------|
| 1 | VeeT | Module Transmitter Ground |
| 2 | Tx_Fault | Module Transmitter Fault |
| 3 | Tx_Disable | Transmitter Disable |
| 4 | SDA | 2-Wire Serial Interface Data |
| 5 | SCL | 2-Wire Serial Interface Clock |
| 6 | Mod_ABS | Module Absent |
| 7 | RS0 | Rate Select 0 (Note 11) |
| 8 | Rx_LOS | Receiver Loss of Signal |
| 9 | RS1 | Not Used |
| 10 | VeeR | Module Receiver Ground |
| 11 | VeeR | Module Receiver Ground |
| 12 | RD- | Receiver Inverted Data Output |
| 13 | RD+ | Receiver Non-Inverted Data Output |
| 14 | VeeR | Module Receiver Ground |
| 15 | VccR | Module Receiver 3.3V Supply |
| 16 | VccT | Module Transmitter 3.3V Supply |
| 17 | VeeT | Module Transmitter Ground |
| 18 | TD+ | Transmitter Non-Inverted Data Input |
| 19 | TD- | Transmitter Inverted Data Input |
| 20 | VeeT | Module Transmitter Ground |

11. Default LOW (25G operation). HIGH is used for 28G operation

8. CDR Operation

The built-in dual CDR will automatically lock onto the signal when the data rate is between 25.78 and 28.05Gbps.

9. EEPROM

Memory map as per SFF-8472

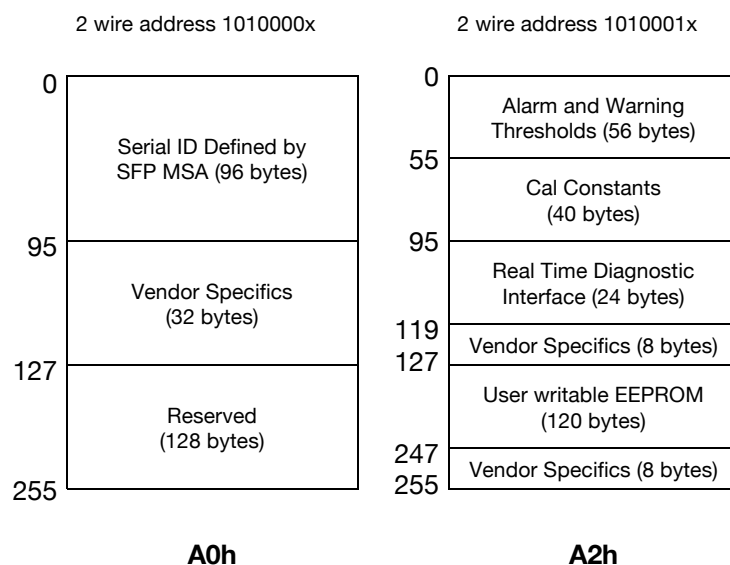


Figure 3. SFP28 Memory Map

10. Ordering Information

| Part Number | Description |
|---------------------|---|
| S2885P10250F | SFP28 SR, 850nm, Tx (VCSEL), Rx (PIN), maximum distance 100m/70m on OM4/OM3 MMF, 25x Gigabit Ethernet, LC connector, 0°C to 70°C, DDM |
| S2885P10252F | SFP28 SR, 850nm, Tx (VCSEL), Rx (PIN), maximum distance 100m/70m on OM4/OM3 MMF, 25x Gigabit Ethernet, LC connector, -40°C to 85°C, DDM |

11. Document Revision Information

| Revision | Description |
|----------|--------------------------------------|
| A | Initial release |
| B | Industrial temperature variant added |

Skylane Optics supplies a broad range of optical transceivers. Our engineers work closely with our customers to find the best solutions for every application. We are committed to provide high quality products and services to our customers.

For questions on this product please contact:
support@skylaneoptics.com

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