

# S2885P102R0F – SFP28 Dual Fibre

850nm / 100m / 25GBASE-SR & 10GBASE-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 Class 1 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

S2885P102R0F is a high-performance transceiver module for up to 25.78Gbps 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 0°C to 70°C
- Low power dissipation < 1W
- Digital diagnostics monitoring (DDM)

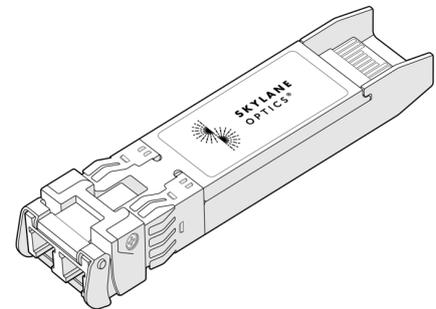


Figure 1. SFP28 Dual Fiber (non-binding illustration)

## 3. Applications

- 25x Gigabit Ethernet
- 10x Gigabit Ethernet

## 4. Optical Interface

P/N	Wavelength	Protocol	Optical Output Power <sup>1</sup> [dBm]	Stressed Receiver Sensitivity <sup>2</sup> (OMA) [dBm]	Optical Receiver Overload <sup>3</sup> [dBm]	Link Length <sup>1,4</sup> [m]
S2885P102R0F	850nm	25GBASE-SR 10GBASE-SR	-8.4 to 2.4	≤ -5.2	2.4	≤ 100

1. EOL over operating temperature range  
 2. 25.78Gbps, BER ≤ 5 × 10<sup>-5</sup>, PRBS 2<sup>31</sup>-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	
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<sub>≤</sub> 5×10<sup>-5</sup>, PRBS 2<sup>31</sup>-1, pre-FEC

6. Transceiver Electrical Pad Layout

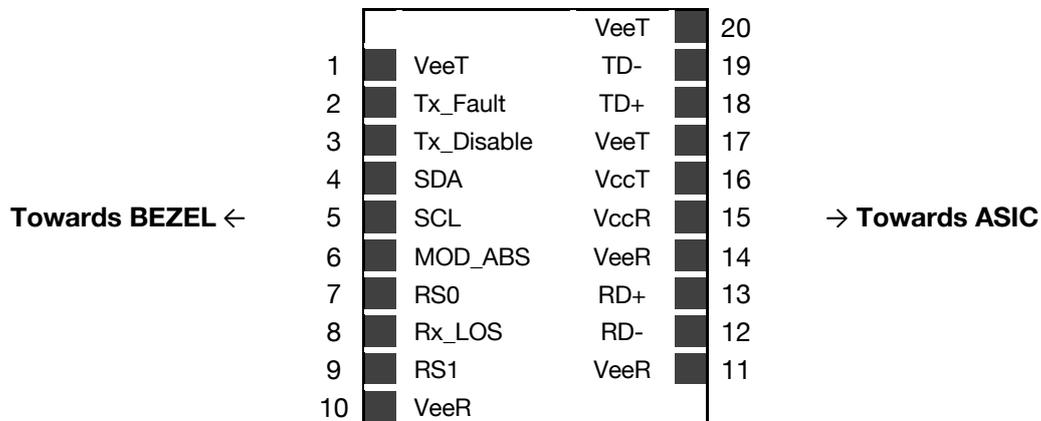


Figure 2. Transceiver Electrical Pad Layout

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
8	Rx_LOS	Receiver Loss of Signal
9	RS1	Rate Select 1
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

## 8. CDR Operation

Logical OR of RS0 and A2h bit 110.3	Logical OR of RS1 and A2h bit 118.3	Rx Data Rate	Tx Data Rate
HIGH / 1	HIGH / 1	25.78G	25.78G
HIGH / 1	LOW / 0	25.78G	10.31G
LOW / 0	HIGH / 1	10.31G	25.78G
LOW / 0	LOW / 0	10.31G	10.31G

9. EEPROM

Memory map as per SFF-8472

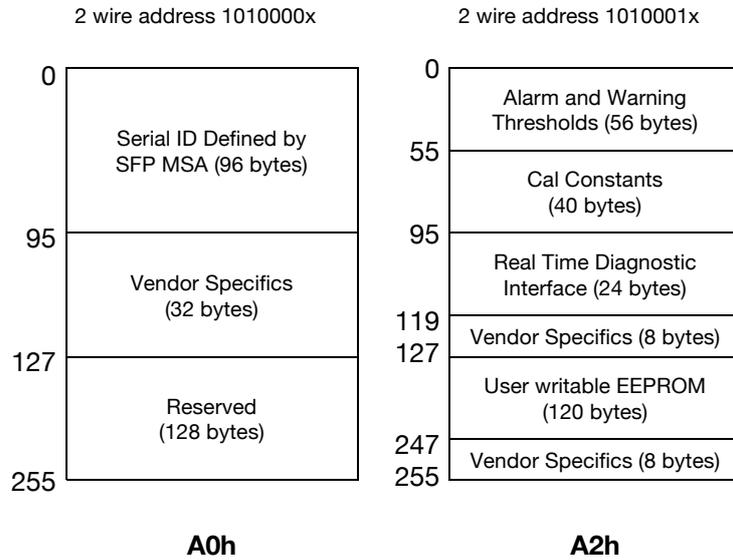


Figure 3. SFP28 Memory Map

10. Ordering Information

Part Number	Description
S2885P102R0F	SFP28 SR, 850nm, Tx (VCSEL), Rx (PIN), maximum distance 100m/70m on OM4/OM3 MMF, 10x /25x Gigabit Ethernet, LC connector, 0°C to 70°C, DDM

11. Document Revision Information

Revision	Description
A	Initial release

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**

