

S2Cxx01025xF – SFP28 Dual Fibre CWDM

CWDM / 10km / 25× Gigabit Ethernet

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 Class2 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

S2Cxx01025xF is a high-performance transceiver module for 25 Gigabit Ethernet data links over a single mode fibre pair. The maximum reach is 10km. The transmitter is a CWDM Distributed Feedback (DFB) laser, the receiver is a PIN photodiode.

This transceiver module is compliant with the Small Form-factor Pluggable (SFP+) and hot pluggable. Always contact Skylane Optics® commercial agents for compatibility with different equipment platforms.

2. Features

- SFP+ Multi-Source Agreement compliant (SFF-8431)
- Hot pluggable SFP+ footprint
- Serial ID functionality supported according to SFF-8472
- 25.781Gbps Serial Electrical Interface (CEI-28G-VSR)
- Dual LC Connector
- CWDM DFB Transmitter (channels 27 to 37)
- PIN Receiver
- Up to 10km Point-to-Point Transmission on Single Mode Fibre
- Built-in dual CDR
- Operating temperature range 0°C to 70°C or -20°C to 85°C
- Power Dissipation <1.5W
- Single +3.3V Power Supply

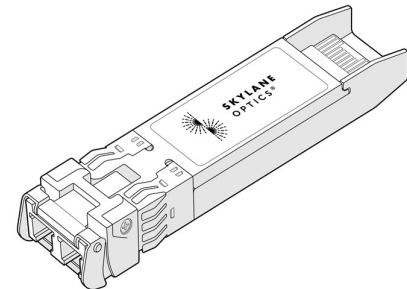


Figure 1. SFP28 Dual Fibre
(non-binding illustration)

3. Applications

- 25× Gigabit Ethernet
- CPRI Option 10

4. Optical Interface

P/N	Wavelength	Protocol	Optical Output Power ¹ [dBm]	Receiver Sensitivity ² (OMA) [dBm]	Optical Receiver Overload ³ [dBm]	Link Length ^{1,4} [km]
S2Cxx01025xF	ITU CWDM	25GBASE	0 to 6	≤ -13	2	≤ 10

1. EOL over operating temperature range

2. Measured with 25.78Gbps, BER≤5×10⁻⁵, PRBS 2³¹-1

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 802.3-2012



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	S2Cxx010250F
	-40		85		S2Cxx010252F
Relative Humidity	5		85	%	Non-Condensing
Power Supply Voltage	3.135	3.3	3.465	V	
Power Supply Current			360	mA	S2Cxx010250F
			435		S2Cxx010251F
Power Dissipation			1.2	W	S2Cxx010250F
			1.5		S2Cxx010251F

5.2. Transmitter Optical Specifications

Parameter	Min	Typ	Max	Unit	Notes
Data Rate			25.78125	Gbps	5
Average Output Power	0		6	dBm	6
Output Power (OMA)	-1		6	dBm	6
Centre Wavelength Range	1264.5		1337.5	nm	
Wavelength	$\lambda_c - 6.5$	λ_c	$\lambda_c + 6.5$	nm	7
Spectral Width (-20dB)			1	nm	
Transmitter and Dispersion Penalty (TDP)			1	dB	8
			3		9
			4.5		10
Extinction Ratio	3.5			dB	

5. IEEE 802.3-2012

6. Output power coupled into a 9/125 μ m single mode fibre

7. ITU-T G.694.2 CWDM. For available wavelengths, see section 9

8. Channels 27, 29 and 31

9. Channel 33

10. Channels 35 and 37

5.3. Receiver Optical Specifications

Parameter	Min	Typ	Max	Unit	Notes
Operating Wavelength	1260		1600	nm	
Receiver Sensitivity (OMA)			-13	dBm	11
Receiver Overload	2			dBm	11

11. Measured with 25.78Gbps, BER $\leq 5 \times 10^{-5}$, PRBS $2^{31}-1$



6. Transceiver Electrical Pad Layout

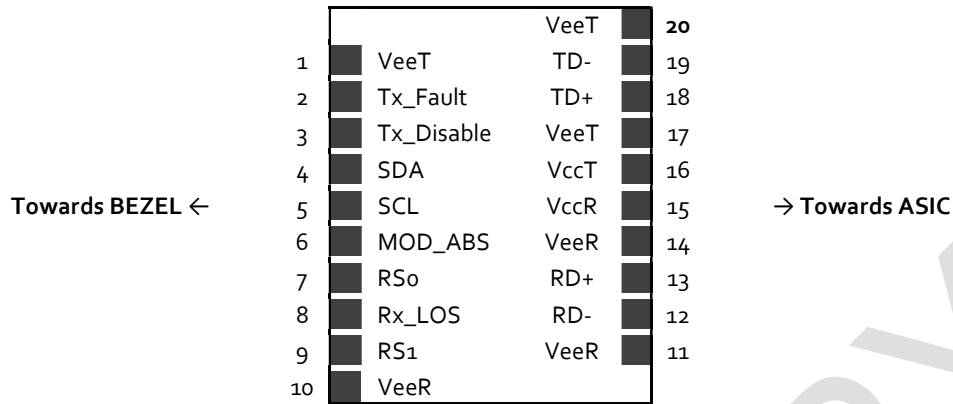


Figure 2. Transceiver Electrical Pad Layout

7. Module Electrical Pin Definition

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. EEPROM

SFP+ MSA (SFF-8472)

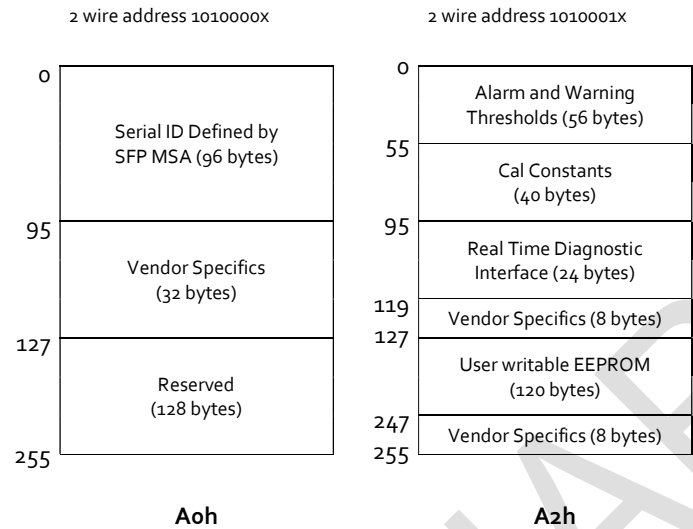


Figure 3. SFP28 Memory Map



9. Ordering Information

Part Number	Description
S2C27010250F	SFP28 CWDM Dual Fibre, Tx 1271nm, (CWDM DFB), Rx (PIN), maximum distance 10km, 25× Gigabit Ethernet, dual LC connector, 0°C to 70°C , DDM
S2C29010250F	SFP28 CWDM Dual Fibre, Tx 1291nm, (CWDM DFB), Rx (PIN), maximum distance 10km, 25× Gigabit Ethernet, dual LC connector, 0°C to 70°C , DDM
S2C31010250F	SFP28 CWDM Dual Fibre, Tx 1311nm, (CWDM DFB), Rx (PIN), maximum distance 10km, 25× Gigabit Ethernet, dual LC connector, 0°C to 70°C , DDM
S2C33010250F	SFP28 CWDM Dual Fibre, Tx 1331nm, (CWDM DFB), Rx (PIN), maximum distance 10km, 25× Gigabit Ethernet, dual LC connector, 0°C to 70°C , DDM
S2C35010250F	SFP28 CWDM Dual Fibre, Tx 1351nm, (CWDM DFB), Rx (PIN), maximum distance 10km, 25× Gigabit Ethernet, dual LC connector, 0°C to 70°C , DDM
S2C37010250F	SFP28 CWDM Dual Fibre, Tx 1371nm, (CWDM DFB), Rx (PIN), maximum distance 10km, 25× Gigabit Ethernet, dual LC connector, 0°C to 70°C , DDM
S2C27010251F	SFP28 CWDM Dual Fibre, Tx 1271nm, (CWDM DFB), Rx (PIN), maximum distance 10km, 25× Gigabit Ethernet, dual LC connector, -20°C to 85°C , DDM
S2C29010251F	SFP28 CWDM Dual Fibre, Tx 1291nm, (CWDM DFB), Rx (PIN), maximum distance 10km, 25× Gigabit Ethernet, dual LC connector, -20°C to 85°C , DDM
S2C31010251F	SFP28 CWDM Dual Fibre, Tx 1311nm, (CWDM DFB), Rx (PIN), maximum distance 10km, 25× Gigabit Ethernet, dual LC connector, -20°C to 85°C , DDM
S2C33010251F	SFP28 CWDM Dual Fibre, Tx 1331nm, (CWDM DFB), Rx (PIN), maximum distance 10km, 25× Gigabit Ethernet, dual LC connector, -20°C to 85°C , DDM
S2C35010251F	SFP28 CWDM Dual Fibre, Tx 1351nm, (CWDM DFB), Rx (PIN), maximum distance 10km, 25× Gigabit Ethernet, dual LC connector, -20°C to 85°C , DDM
S2C37010251F	SFP28 CWDM Dual Fibre, Tx 1371nm, (CWDM DFB), Rx (PIN), maximum distance 10km, 25× Gigabit Ethernet, dual LC connector, -20°C to 85°C , DDM

10. Document Revision Information

Revision	Description
A	Initial release
B	The number of available channels increased to 6. Some key parameters updated. Industrial temperature variant replaced by extended temperature variant

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

Beyond
Quality

Reliable
Alliance

Performing
Smartly