

S2813010320C – SFP28 Dual Fibre

1310nm / 10km / 32× Fiber Channel / CDR

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

S2813010320C is a high performance transceiver module for up to 32× Fiber Channel data links over a single mode fibre pair. The maximum reach is 10km. The transmitter is a 1310nm 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
- Dual LC Connector
- 1310nm DFB Transmitter
- PIN Receiver
- Up to 10km Point-to-Point Transmission on Single Mode Fibre
- Built-in dual CDR (bypass at 16/8GFC)
- Operating temperature range 0°C to 70°C
- Power Dissipation <1.2W
- Single +3.3V Power Supply

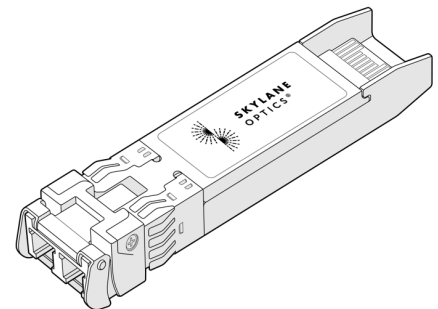


Figure 1. SFP28 Dual Fibre (non-binding illustration)

3. Applications

- 32× Fiber Channel
- 16× Fiber Channel
- 8× Fiber Channel

4. Optical Interface

P/N	Wavelength	Protocol	Optical Output Power [dBm]	Receiver Sensitivity (OMA) [dBm]	Optical Receiver Overload [dBm]	Link Length [km]
S2813010320C	1310nm	32GFC 16GFC 8GFC	-5 to 2	≤ -11.4	2	≤ 10

1. EOL over operating temperature range
 2. Measured with 28.050Gbps, BER≤10⁻⁶, 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 FC-PI-6

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		85	%	Non-Condensing
Power Supply Voltage	3.135	3.3	3.465	V	
Power Supply Current			360	mA	
Power Dissipation			1.2	W	

5.2. Transmitter Optical Specifications					
Parameter	Min	Typ	Max	Unit	Notes
Data Rate		28.050		Gbps	5
Average Output Power	-5		2	dBm	6, 7
Launched OMA	-2				6, 8
Centre Wavelength	1295		1325	nm	
Spectral Width (-20dB)			1	nm	
Transmitter and Dispersion Penalty (TDP)			2.7	dB	
Extinction Ratio	4			dB	

- 5. FC-PI-6
- 6. Output power coupled into a 9/125 µm single mode fibre
- 7. The minimum value is calculated using an infinite extinction ratio at the lowest allowed transmit OMA
- 8. 3200-SM-LC-L optical modulation amplitude in dBm shall also exceed -5.0+TDP

5.3. Receiver Optical Specifications					
Parameter	Min	Typ	Max	Unit	Notes
Operating Wavelength	1295		1325	nm	
Average Receive Power			2	dBm	
Receiver Sensitivity (OMA)			-11.4	dBm	9

- 9. Measured with 28.050Gbps, BER≤10⁻⁹, PRBS 2³¹-1

6. Transceiver Electrical Pad Layout

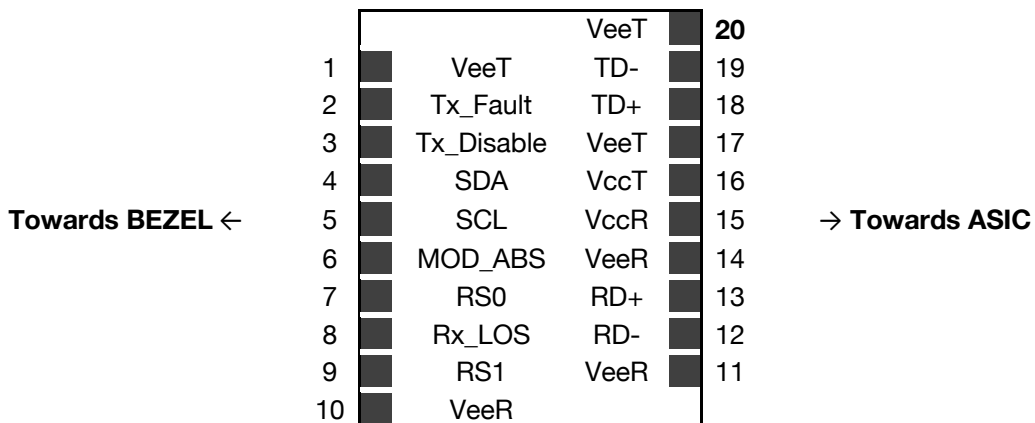


Figure 2. Transceiver Electrical Pad Layout

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. 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	HIGH	27.95G/28.05G	27.95G/28.05G
LOW	LOW	14.025G/8.5G	14.025G/8.5G

9. EEPROM

SFP+ MSA (SFF-8472)

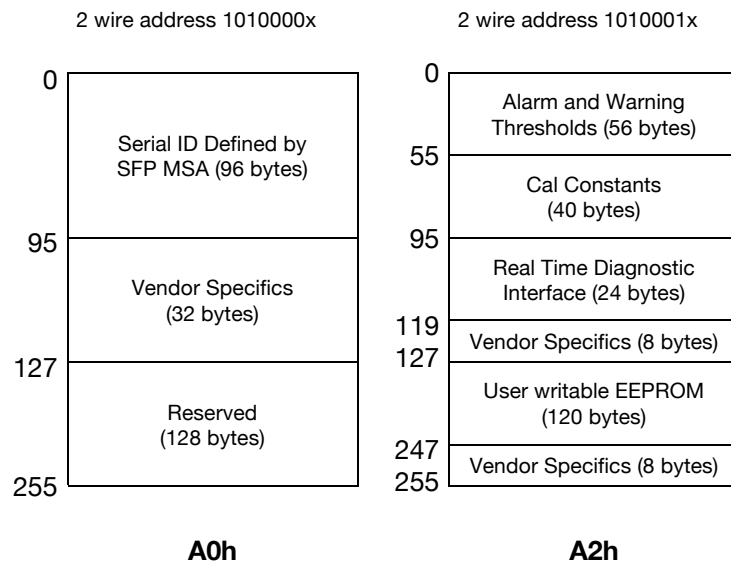


Figure 3. SFP28 Memory Map

Datasheet

S2813010320C_RevA.docx



10. Ordering Information

Part Number	Description
S2813010320C	SFP28, 1310nm, Tx (DFB), Rx (PIN), maximum distance 10km on SMF, 32x Fiber Channel, dual 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

**Beyond
Quality**

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**Performing
Smartly**