Q2885P10C0PF – QSFP28 Parallel Fibre
850nm / 100m / 100GBASE-SR4

#01 Overview

Q2885P10C0PF is a high performance QSFP28 transceiver module for 100 Gigabit Ethernet data links over four multi-mode fibre pairs (ribbon fibre). The maximum reach is 100m (OM4) or 70m (OM3). The four transmitters are 850nm Vertical-Cavity Surface-Emitting Lasers (VCSEL) generating four optical 25Gbps output signals. The four receivers are PIN photodiodes detecting 4× 25Gbps optical input signals.

This transceiver module is compliant with the QSFP28 Multisource Agreement (MSA) and hot pluggable. Always contact Skylane Optics® commercial agents for compatibility with different equipment platforms.

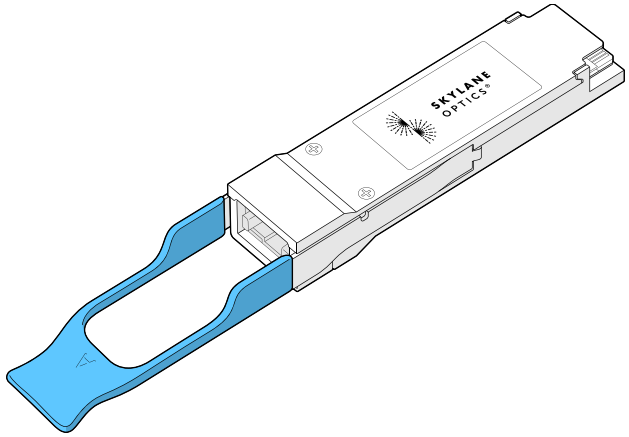

Figure 1. QSFP28 MPO
(non-binding illustration)

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#02 Features

- QSFP28 Multi-Source Agreement compliant
- Hot pluggable QSFP28 footprint
- Supports 103.125 Gbps aggregated Data Rate
- 4× 25.781Gbps Serial Electrical Interface (CAUI-4)
- MPO/MTP Optical Connector
- 4× 850nm VCSEL Transmitters
- 4× PIN Receivers
- Up to 100m/70m Point-to-Point Transmission on OM4/OM3 Multi Mode Fibre
- Operating temperature range 0°C to 70°C
- Power Dissipation <3.5W
- Single +3.3V Power Supply

#03 Applications

- 100GBASE-SR4

#04 Optical Interface

P/N	Q2885P10C0PF
Wavelength	850nm
Protocol	100GBASE-SR4
Optical Output Power1, each Lane [dBm]	-8.4 to 2.4
Stressed Receiver Sensitivity2 (OMA), each Lane [dBm]	≤ -5.2
Optical Receiver Overload3, each Lane [dBm]	2.4
Link Length[1,4] [m]	≤ 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

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#05 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	0		85	%	Non-Condensing
Power Supply Voltage	3.135	3.3	3.465	V	
Power Supply Current			1000	mA	
Power Dissipation			3.5	W	

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#05 Technical Parameters

5.2 Transmitter Optical Specifications					
Parameter	Min	Typ	Max	Unit	Notes
Data Rate, each Lane		25.78125		Gbps	5
Aggregated Data Rate		103.125		Gbps	5
Average Output Power, each Lane	- 8.4		2.4	dBm	6
Launched OMA, each Lane	- 6.4		3	dBm	6,7
Launched OMA minus TDEC, each Lane	-7.3			dBm	6
Centre Wavelength, Optical Lanes 0 to 3	840		860	nm	
Spectral Width			0,6	nm	8
Extinction Ratio, each Lane	2			dB	
Transmitter and Dispersion Eye Closure (TDEC), each Lane			4.3	dB	

5.3. Receiver Optical Specifications					
Parameter	Min	Typ	Max	Unit	Notes
Operating Wavelength, Optical Lanes 0 to 3	840		860	nm	
Average Receive Power, each Lane	-10.3		2.4	dBm	9
Stressed Receiver Sensitivity (OMA), each Lane			-5.2	dBm	10

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 9. Average receive power, each lane (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≤ 5×10-5, PRBS 231-1, pre-FEC

#06 Transceiver Electrical Pad Layout

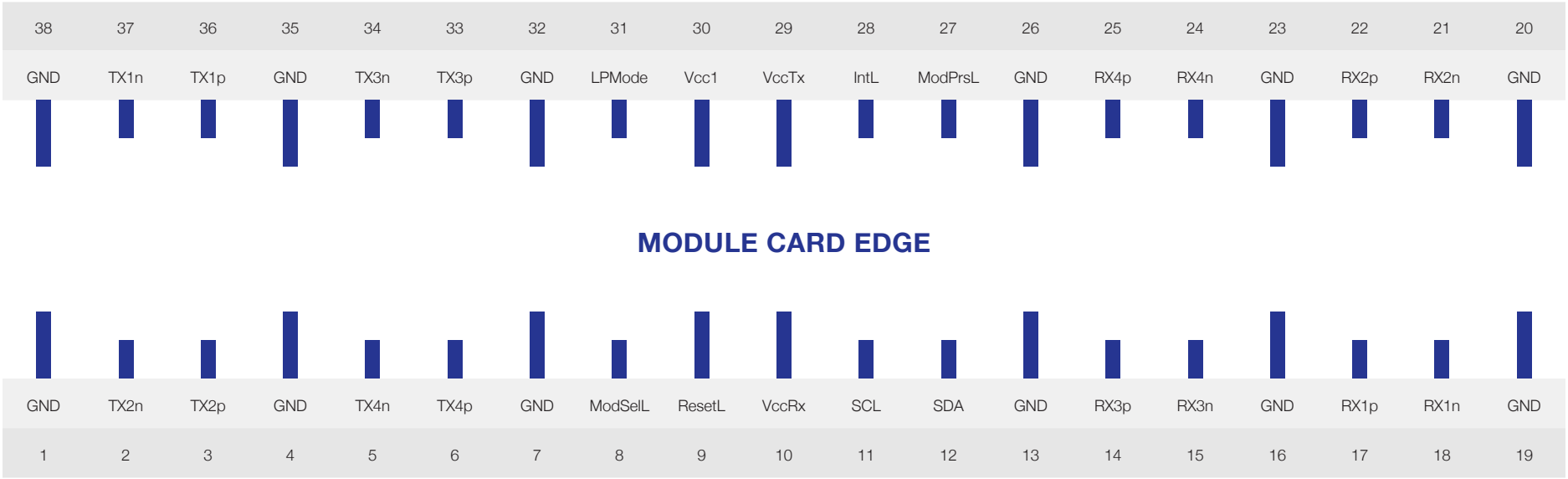

Figure 2. QSFP28 Module Pad Layout

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#07 Pin Function Definition

Pin	Symbol	Description	Pin	Symbol	Description
1	GND	Ground	20	GND	Ground
2	TX2n	Transmitter Inverted Data Input	21	RX2n	Receiver Inverted Data Output
3	TX2p	Transmitter Non-Inverted Data Input	22	RX2p	Receiver Non-Inverted Data Output
4	GND	Ground	23	GND	Ground
5	TX4n	Transmitter Inverted Data Input	24	RX4n	Receiver Inverted Data Output
6	TX4p	Transmitter Non-Inverted Data Input	25	RX4p	Receiver Non-Inverted Data Output
7	GND	Ground	26	GND	Ground
8	ModSelL	Module Select	27	ModPrsL	Module Present
9	ResetL	Module Reset	28	IntL	Interrupt
10	VccRx	+3.3V Power Supply Receiver	29	VccTx	+3.3V Power supply transmitter
11	SCL	2-wire serial interface clock	30	Vcc1	+3.3V Power supply
12	SDA	2-wire serial interface data	31	LPMode	Low Power Mode
13	GND	Ground	32	GND	Ground
14	RX3p	Receiver Non-Inverted Data Output	33	TX3p	Transmitter Non-Inverted Data Input
15	RX3p	Receiver Inverted Data Output	34	TX3n	Transmitter Inverted Data Input
16	GND	Ground	35	GND	Ground
17	RX1p	Receiver Non-Inverted Data Output	36	TX1p	Transmitter Non-Inverted Data Input
18	RX1n	Receiver Inverted Data Output	37	TX1n	Transmitter Inverted Data Input
19	GND	Ground	38	GND	Ground

#08 EEPROM - QSFP+ MSA (SFF-8436)

2-WIRE SERIAL ADDRESS : 1010000X

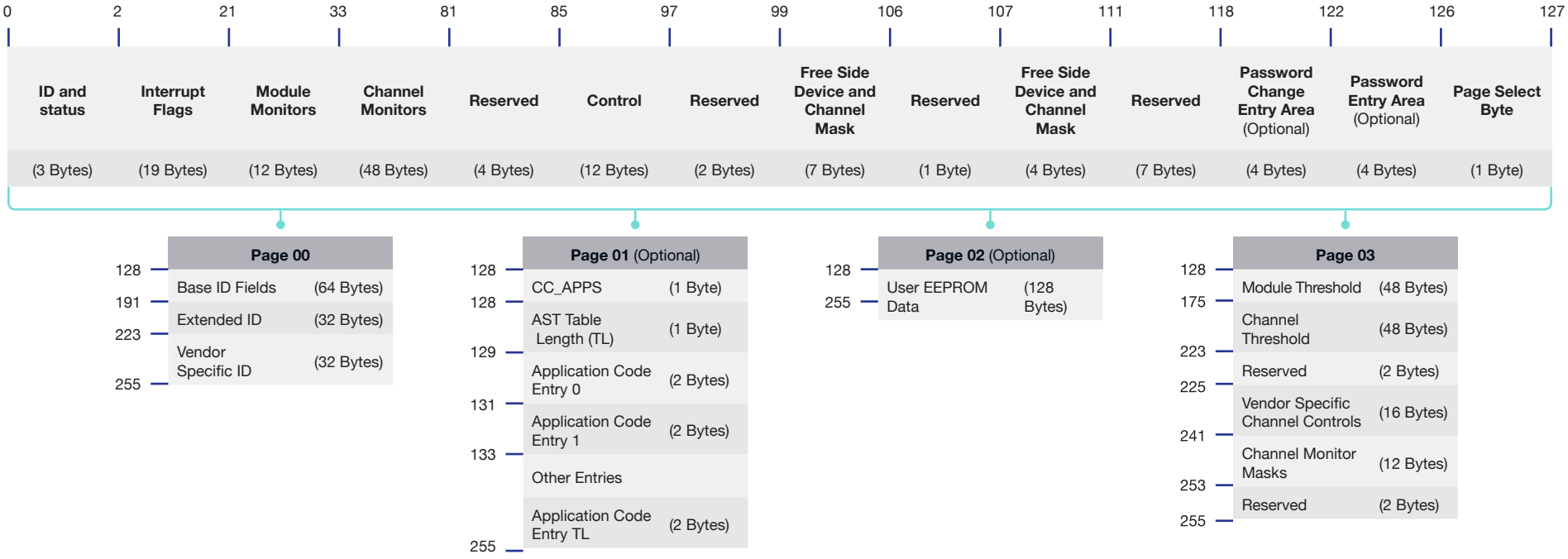

Figure 3. QSFP28 Memory Map

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#09 Ordering information

Part Number	Q2885P10C0PF
Description	QSFP28 SR4, 850nm, Tx (VCSEL), Rx (PIN), maximum distance 100m/70m on OM4/OM3 MMF, 100 Gigabit Ethernet, MPO connector, 0°C to 70°C, DDM

#10 Document Revision Information

Revision	Description
RevA	Initial release

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

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).

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