P1TX4C-SX4-01MM
Product Specification Sheet

ORIGINATOR:	C. ENG	DATE:	7/8/2011
OMRON NETWORK PRODUCTS	P1TX4C-SX4x-01MM Product Specification	DOCUMENT NO. DOC002327	REV A
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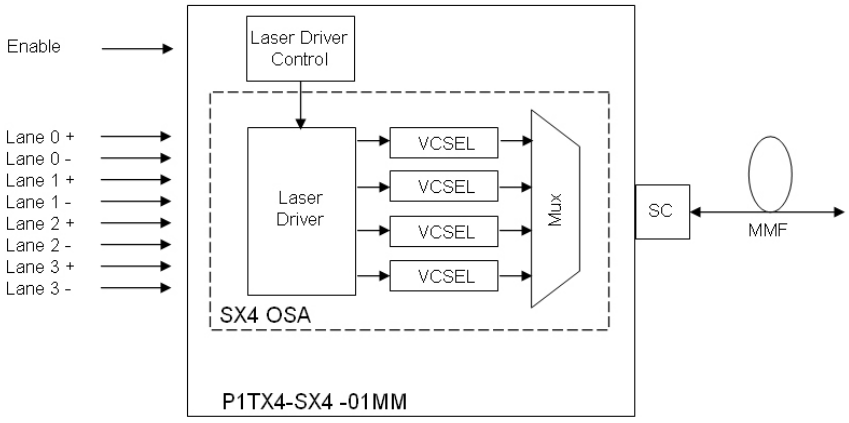
1.0 Features

- Multiple signals over one multimode fiber
- Integrated microcontroller for laser driver control
- ~ 0.5W power consumption
- Metal enclosure with SC optical interface



This device is **EXTREMELY SENSITIVE** to Electrostatic Discharge (ESD). At a minimum, all handling must be performed in accordance with an ANSI-compliant ESD Control Program (ANSI/ESD S20.20-2007) to mitigate possible ESD-induced damage. Reliability and life of the device will be adversely affected if these precautions are not met.

This device is a Class 3R Laser device (per IEC 60825-1:2007) and can cause damage to eye sight if used improperly. Refer to ANSI Z136 for proper handling and usage of Class 3R devices.

2.0 Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Units
Storage Temperature[1]	Tst				°C
3.3V Supply Voltage	VCC1				V
Operating Surface Temperature[2]	Ta				°C
Operating Humidity[3]	RH				%
Durability – SC Connector			200		cycles
Durability – Plug-down Connector			50		cycles

3.0 Optical Characteristics

Parameter (per Channel)	Symbol	Min	Typ	Max	Units
Average Optical Power, per Lane[4]	Pout		0.0		dBm
Optical Modulation Amplitude					dBm
Center Wavelength – Lane 0			778		nm
Center Wavelength – Lane 1			800		nm
Center Wavelength – Lane 2			825		nm
Center Wavelength – Lane 3			850		nm
Optical Rise/Fall Time[5] P1TX4C-SX4V-01 P1TX4C-SX4D-01			 200 100		 ps

[1] Stresses listed may be applied without causing damage. Functionality at or above the values listed is not implied. Exposure to these values for extended periods may affect reliability.

[2] See outline drawing for measurement point.

[3] Non condensing, 80% RH.

[4] I= 5mA, T=25C. Measured at the end of a 2m section of 62.5µ fiber.

[5] Rise and fall times measured from 20 - 80%

4.0 Electrical Specifications

Parameter	Symbol	Min	Typ	Max	Units
Data Rate per Wavelength[6] P1TX4C-SX4V-01 P1TX4C-SX4D-01					Gb/s
Total Jitter (RMS) per lane[7]	T_{J1}		10		ps
Input Differential Impedance			100		ohm
Input Differential Voltage					mVp-p
Single-ended Input Voltage					mVp-p
Common mode input voltage (AC-coupled input)			2.6		V
Operating Supply Voltage	Vcc-Vee		3.30		V
Operating Supply Current	Icc		140		mA

5.0 Fiber Transmission Distance[8]

Data Rate	Skew Limit	OM1	OM2	OM3	Units
1.65 Gbps	None	200	400	1000	m
	2.42ns	200	400	400	m
3.50 Gbps	None	100	200	500	m
	2.42ns	100	200	400	m
	1.78ns	100	200	294	m

[6] Requires DC-balanced data pattern and a max run length of 80 bits. Measured with input signals conforming to HDMI rev 1.3a, section 4.2.4, figure 4-18.

[7] Based on a jitter-free source. For optimal performance, clocks should be transmitted on Lane 0

[8] Max distance considers the worst-case conditions. Actual distance may be up to 4x specified distance.

6.0 Pin Numbers and Descriptions

The TX-SX4 plugs into a 30 pin connector. For information on the specifications of the connector, contact Hirose (DF12(4.0)-30DP-0.5V(86)).

Pin #	Signal	Name	Description
1	GND	Ground	Ground
2	NC	No connect	No Connect[9]
3	+ IN0	Ch 0 + Data Input	Positive differential input for 778nm channel
4	NC	No connect	No Connect[9]
5	- IN0	Ch 0 - Data Input	Negative differential input for 778nm channel
6	NC	No connect	No Connect[9]
7	+ IN1	Ch 1 + Data Input	Positive differential input for 800nm channel
8	NC	No connect	No Connect[9]
9	- IN1	Ch 1 - Data Input	Negative differential input for 800nm channel
10	NC	No connect	No Connect[9]
11	+ IN2	Ch 2 + Data Input	Positive differential input for 825nm channel
12	NC	No connect	No Connect[9]
13	- IN2	Ch 2 - Data Input	Negative differential input for 825nm channel
14	NC	No connect	No Connect[9]
15	+ IN3	Ch 3 + Data Input	Positive differential input for 850nm channel
16	NC	No connect	No Connect[9]
17	- IN3	Ch 3 - Data Input	Negative differential input for 850nm channel
18	EN	Enable	3.3V=normal operation, 0V turns off lasers
19	GND	Ground	Ground
20	NC	No connect	No Connect[9]
21	NC	No connect	No Connect[9]
22	NC	No connect	No Connect[9]
23	NC	No connect	No Connect[9]
24	NC	No connect	No Connect[9]
25	NC	No connect	No Connect[9]
26	NC	No connect	No Connect[9]
27	NC	No connect	No Connect[9]
28	VCC	Voltage Input	+3.3 volt input
29	GND	Ground	Ground
30	VCC	Voltage Input	+3.3 volt input

7.0 Laser Safety

The P1TX4C-SX4x-01 meets Class-3 requirements.

[9] NC = No Connect. Do not connect anything to this PIN.

8.0 Environmental Standards

Omron Network Products designs and manufactures its products to minimize the negative impact on our environment. As such, the P1TX4C-SX4-01MM conforms to a variety of environmental and safety standards

Standard	Compliant	Certificate Available
RoHS	Yes	Yes

9.0 Dimensions

The SX4 TOSA is designed to work with a standard SC ferrule only. Insertion of any other type may result in damage.

Dimensions (mm) and orientation are for reference only.