

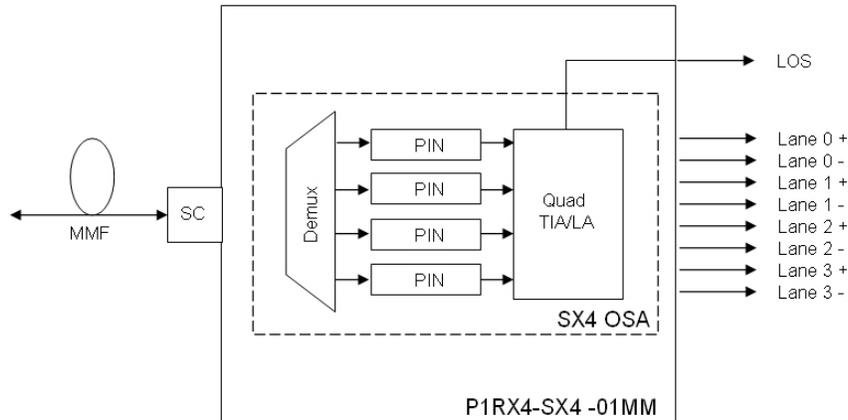
## 1.0 Description

The P1RX4C-SX4x-01MM (SX4 ROSA Module) is an optical to electrical (O-E) module that receives four video- or data-channels from one singlemode or multimode fiber. With the TIA and Limiting Amp embedded in the OSA and enclosed in an EMI shielded metal housing, the SX4 ROSA module is a fully integrated receiver versatile enough to be designed in to a variety of systems.



## 2.0 Features

- Multiple signals from one Multimode fiber
- Integrated TIA and Limiting Amp
- Metal enclosure with SC optical interface
- CML outputs



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.



<b>ORIGINATOR:</b>		<b>C. ENG</b>		<b>Date:</b>		<b>7/8/2011</b>	
<b>OMRON</b>	<b>P1RX4C-SX4x-01MM Product Specification</b>			<b>DOCUMENT NO.</b>		<b>REV</b>	
				<b>DOC002107</b>		<b>A</b>	
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### 3.0 Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Units
Storage Temperature <sup>1,3</sup>	Tst	-40		85	°C
3.3V Supply Voltage	VCC1	-0.3		3.6	V
Operating Surface Temperature <sup>2</sup>	Ta	0		65	°C
Operating Humidity <sup>3</sup>	RH			80	%
Durability – SC Connector			200		cycles
Durability – Plug-down Connector			50		cycles

### 4.0 Optical Characteristics

Parameter (per channel)	Symbol	Min	Typ	Max	Units
Wavelength – Lane 0			778		nm
Wavelength – Lane 1			800		nm
Wavelength – Lane 2			825		nm
Wavelength – Lane 3			850		nm
Data Rate per Channel <sup>4</sup> P1RX4C-SX4V-01 P1RX4C-SX4D-01	D <sub>R</sub>			1.65 3.50	Gb/s
Peak Optical Input Power	Pin			4.0	dBm
OMA Sensitivity <sup>5</sup>		-14.25	-16.00		dBm

<sup>1</sup> 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.

<sup>2</sup> See outline drawing for measurement point.

<sup>3</sup> Non condensing, 80% RH.

<sup>4</sup> Requires DC-balanced data pattern and max run rate of 80 bits. Measured with input signals conforming to HDMI rev 1.3a, section 4.2.5, figure 4-20.

<sup>5</sup> Optical Modulation Amplitude. Based on an unstressed input signal.

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## 5.0 Electrical Specifications

Parameter	Symbol	Min	Typ	Max	Units
Low Frequency Cutoff	$F_{CUTOFF}$		175		kHz
Total Jitter (RMS), per lane <sup>6</sup>	$T_{J1}$		10		ps
Differential Output Voltage <sup>7</sup>	$V_{OD}$		500		mVp-p
Loss of Signal Assert Sensitivity	$LOS_{SEN-ON}$		-14.50		dBm
Loss of Signal De-Assert Sensitivity	$LOS_{SEN-OFF}$		-13.00		dBm
Loss of Signal Output Low <sup>8</sup>	$V_{LOS}$			0.7	V
Loss of Signal Output High	$V_{LOS}$	2			V
Operating Supply Voltage	$V_{CC}$	3.15	3.30	3.54	V
Operating Supply Current	$I_{CC}$		127		mA

<sup>6</sup> Based on a jitter-free source

<sup>7</sup> CML interface through a 100-ohm differential load.

<sup>8</sup> This output is asserted low when a loss of signal is detected on all Lanes

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## 6.0 Pin Numbers and Descriptions

The RX-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	Description
1	GND	Ground
2	LOS	Global Loss of Signal Indicator
3	+TD0	Positive Data Output (778nm)
4	NC	No Connect <sup>9</sup>
5	-TD0	Negative Data Output (778nm)
6	NC	No Connect <sup>9</sup>
7	+TD1	Positive Data Output (800nm)
8	NC	No Connect <sup>9</sup>
9	-TD1	Negative Data Output (800nm)
10	NC	No Connect <sup>9</sup>
11	+TD2	Positive Data Output (825nm)
12	NC	No Connect <sup>9</sup>
13	-TD2	Negative Data Output (825nm)
14	NC	No Connect <sup>9</sup>
15	+TD3	Positive Data Output (850nm)
16	NC	No Connect <sup>9</sup>
17	-TD3	Negative Data Output (850nm)
18	NC	No Connect <sup>9</sup>
19	GND	Ground
20	NC	No Connect <sup>9</sup>
21	NC	No Connect <sup>9</sup>
22	NC	No Connect <sup>9</sup>
23	NC	No Connect <sup>9</sup>
24	NC	No Connect <sup>9</sup>
25	NC	No Connect <sup>9</sup>
26	NC	No Connect <sup>9</sup>
27	NC	No Connect <sup>9</sup>
28	VCC	3.3 volt input.
29	GND	Ground
30	VCC	3.3 volt input.

## 7.0 Laser Safety

The P1RX4-SX4x-01 meets Class-3 requirements.

<sup>9</sup> NC = No Connect. Do not connect anything to this pin.

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## 8.0 Environmental Standards

Omron Network Products designs and manufactures its products to minimize the negative impact on our environment. As such, the P1RX4C-SX4-01MM conforms to a variety of environmental and safety standards

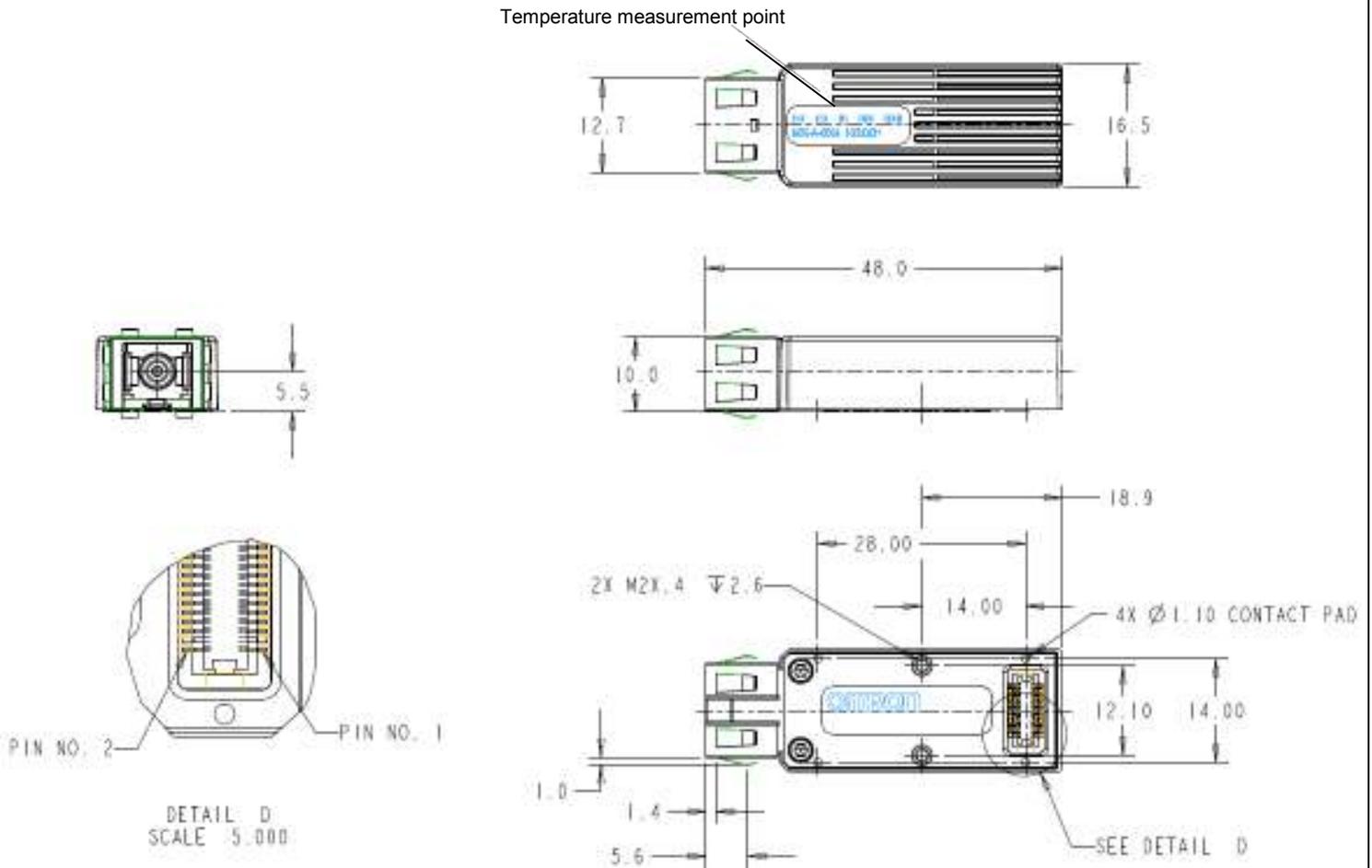
Standard	Compliant	Certificate Available
RoHS	Yes	Yes

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## Dimensions

The SX4 ROSA 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.



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