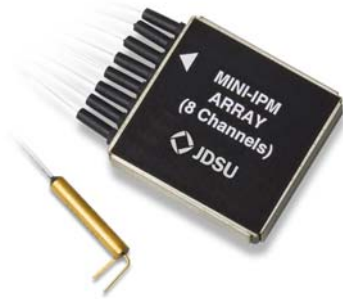


## Miniature Integrated Power Monitor



### Key Features

- High reliability
- Compact footprint with ultra-wide bandwidth
- Extremely low wavelength dependent loss (WDL) and PDL
- Up to 10-channel arrays

### Applications

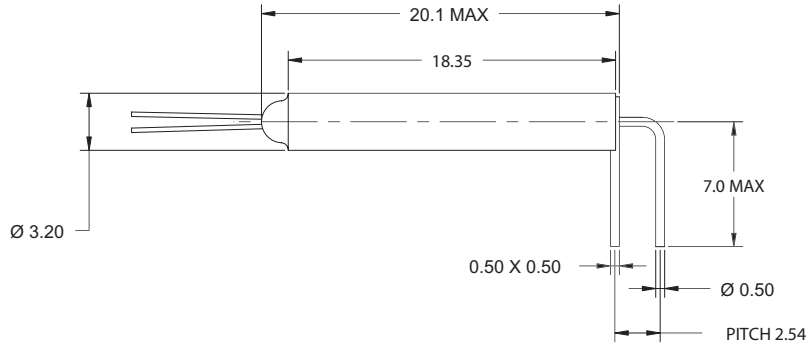
- EDFA
- Raman amplifiers
- Add/Drop monitoring
- DWDM systems

JDSU miniature integrated power monitors are designed for channel monitoring in dense wavelength division multiplexing (DWDM) systems and Add/Drop modules. They can also be used for signal/pump power monitoring in erbium doped fiber amplifiers (EDFAs) and Raman amplifiers where integrated solutions tend to replace traditional fused fiber tap + photodiodes. The miniaturized version is a high performance active hybrid device that incorporates a micro-optic tap coupler and high-sensitivity InGaAs photodiode in a miniature package. It offers high reliability, compact footprint with ultra-wide bandwidth, and very low polarization dependent loss (PDL).

2

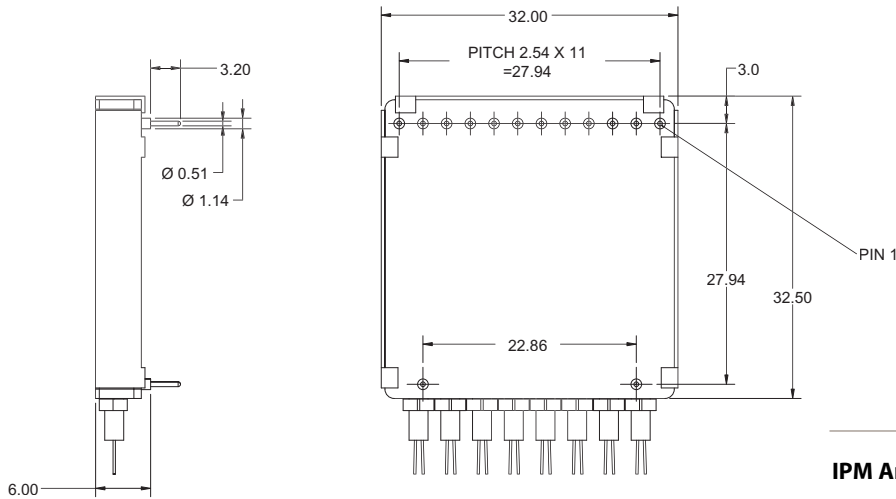
**IPM Single Unit Diagram**

(Specifications in mm unless otherwise noted.)



**IPM Array (6 to 8 channels) Diagram**

(Specifications in mm unless otherwise noted.)



BOTTOM VIEW

**IPM Array Pinout** (8 channel only)

Pin	Description
1	Anode (Common)
2	Cathode 1
3	Cathode 2
4	Anode (Common)
5	Cathode 3
6	Cathode 4
7	Cathode 5
8	Anode (Common)
9	Cathode 6
10	Cathode 7
11	Anode (Common)
12	Cathode 8

## 3

## Specifications

Parameter	Specification	
Wavelength range		
C-Band		1510-1580 nm
L-Band		1560-1625 nm
C+L Band		1510-1625 nm
Insertion loss (input to output)	Maximum	See table below
Wavelength flatness (input to output)	Maximum	0.002 dB/nm
Polarization dependent loss (input to output)	Maximum	0.03 dB
PMD (input to output)	Maximum	0.1 ps
Optical return loss	Minimum	45 dB
PD operating bias voltage, $V_R$		-5 V (typical)
PD responsivity	Minimum	0.8 A/W (for net responsivity, see table below)
PD linearity		$\pm 10\%$
PD dark current	Maximum	1 nA @ $V_R = -5$ V and 23 °C
PD cut-off frequency		600 MHz @ $V_R = -5$ V and $R_L = 50$ W
Input optical power	Maximum	See table below
Operating temperature		-20 to 75 °C
Storage temperature		-40 to 85 °C
Tensile load	Maximum	5 N
Package dimensions		
Single unit		3.2 mm x 18.5 mm
6 to 8 channels array		32 mm x 32.5 mm x 6 mm
10 channels array		38.8 mm x 32.5 mm x 6 mm
Fiber type		SMF-28, 250 $\mu$ m primary coating
Pigtail color code		Black (input port); Clear (output port)

Note: Parameters are specified for the signal wavelength range, all polarization states, and operating temperature range without connector unless otherwise stated.

## Tap Ratio and Insertion Loss Table

Code	Tap Ratio	Maximum Insertion Loss (Input to Output)	Minimum Net Responsivity <sup>1</sup>	Maximum Optical Power <sup>2</sup>
1	1%	0.5 dB	0.008 A/W	500 mW
2	2%	0.5 dB	0.016 A/W	250 mW
3	3%	0.5 dB	0.024 A/W	150 mW
4	4%	0.5 dB	0.032 A/W	125 mW
5	5%	0.6 dB	0.040 A/W	100 mW
T	10%	0.8 dB	0.080 A/W	50 mW

1. The net responsivity is defined as the ratio of the PD current output and optical power measured at output fiber.

2. The maximum optical power is the maximum value of the power at input port within the PD linearity range specified.

**Ordering Information**

For more information on this or other products and their availability, please contact your local JDSU account manager or JDSU directly at 1-800-498-JDSU (5378) in North America and +800-5378-JDSU worldwide or via e-mail at [customer.service@jdsu.com](mailto:customer.service@jdsu.com).

**Sample: IPM-C82310010**

IPM-						001		
<b>Code</b>	<b>Wavelength</b>		<b>Code</b>	<b>Tap Ratio</b>	<b>Code</b>	<b>Package Size</b>	<b>Code</b>	<b>Connector Type</b>
C	C-band		1	1%	2	Single unit	0	No connector
L	L-band		2	2%	3	6-8 channel array	1	FC/PC
1	C + L bands		3	3%	4	10-channel array	2	FC/SPC
			4	4%			3	FC/APC
			5	5%			4	SC/SPC
			T	10%			5	SC/APC
<b>Code</b>	<b>Channels</b>				<b>Code</b>	<b>Fiber Length</b>	8	ST
1	Single device				1	1 m	9	FC/UPC
6	6-channel array				2	2 m	A	SC/UPC
7	7-channel array				4	0.5 m	B	LC/SPC
8	8-channel array				5	1.5 m	C	LC/UPC
T	10-channel array							

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ST is a registered trademark of Lucent Technologies.

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