## PHOTONIC Silicon Photodiode, Filter Combination Photovoltaic DETECTORS INC. (center wavelength 488 nm) Type PDB-V448 PACKAGE DIMENSIONS INCH [mm] EPOXY MARKING INK (WAVE LENGTH NO.) 0.365 [9.27] 0.355 [9.02] DIA COVERING ± 0.005 [0.13] 0.080 [2.03] 0.345 [8.76] 0.200 [5.08] DIA PIN CIRCLE

0.245 [6.22] 0.235 [5.97] DIA

0.330 [8.38] 0.320 [8.13] DIA

0.123 [3.12]

ACTIVE AREA

- 0.235 [5.97] ACTIVE AREA = 17.74 mm<sup>2</sup>

FILTER CAP SUBASSEMBLY

CTIVE ARE .223 [5.66]

.500 [12.70]

0.020 [0.51] DIA 2 PLACES

0.035 [0.89]

0.425 [10.80]



**FEATURES** 

- High transmission
- 10<sup>-4</sup> rejection
- +/- 2nm CWL



0.135 [3.43]

The PDB-V448 is a silicon, PIN planar diffused, photodiode with a narrow band interferance filter. The detector filter combination has a narrow 10 nm half bandwidth designed for low noise photovoltaic applications. Packaged in a TO-5 metal can. ABSOLUTE MAXIMUM RATING (TA=25°C unless otherwise noted)

## **APPLICATIONS**

- Spectrophotometry
- Chemistry instrumentation

ANODE

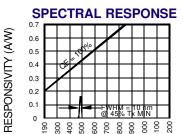
CATHODE

**TO-5 CAN PACKAGE** 

(CASE GROUND)

Liquid chromatography

## SYMBOL PARAMETER MIN MAX UNITS VBR **Reverse Voltage** 100 v °C T<sub>STG</sub> Storage Temperature -20 +85 °C То **Operating Temperature Range** -15 +70 °C Ts Soldering Temperature\* +240



WAVELENGTH (nm)

\*1/16 inch from case for 3 secs max

L,

Light Current

## ELECTRO-OPTICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	MIN	TYP	MAX	UNITS
lsc	Short Circuit Current***	H = 100 fc, 2850 K	150	200		μA
١D	Dark Current	H = 0, V <sub>R</sub> = 10 mV		10	50	pА
Rsн	Shunt Resistance	H = 0, V <sub>R</sub> = 10 mV	.20	2		GΩ
TC Rsh	RsH Temp. Coefficient	H = 0, V <sub>R</sub> = 10 mV		-8		% / °C
Cu	Junction Capacitance	H = 0, V <sub>R</sub> = 10 V**		1700		pF
CWL	Center Wavelength	(CWL, $\lambda$ o) +/- 2 nm		488		nm
HBW	Half Bandwidth	(FWHM)		10		nm
VBR	Breakdown Voltage	I = 10 µµA	50	75		V
N EP	Noise Equivalent Power	V <sub>R</sub> = 10 mV @ Peak		9x10 <sup>-15</sup>		W/ $\sqrt{Hz}$
tr	Response Time	$RL = 1 \ K\Omega \ V_R = 10 \ V$		1.0		μS

0.5

mΑ

Information in this technical data sheet is believed to be correct and reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject to change without notice.\*\*f = 1 MHz, \*\*\*without filter [FORM NO. 100-PDB-V448 REV B]