PHOTOVOLTAIC SERIES

PLANAR DIFFUSED SILICON PHOTODIODES

APPLICATIONS	FEATURES
• Colorimeters	• Ultra Low Noise
• Photometers	• High Shunt Resistance
• Spectroscopy Equipment	• Wide Dynamic Range
• Fluorescence	• Blue Enhanced

The Photovoltaic Detector series is utilized for applications requiring high sensitivity and moderate response speeds, with an additional sensitivity in the visible-blue region for the blue enhanced series. The spectral response ranges from 350 to 1100 nm, making the regular photovoltaic devices ideal for visible and near IR applications. For additional sensitivity in the 350 nm to 550 nm region, the blue enhanced devices are more suitable.

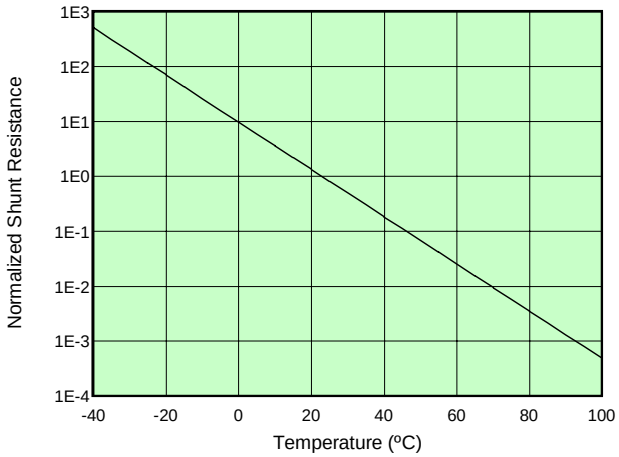
These detectors have high shunt resistance and low noise, and exhibit long term stability. Unbiased operation of these detectors offers stability under wide temperature variations in DC or low speed applications. For high light levels (greater than 10mW/cm^2), the Photoconductive Series detectors should be considered for better linearity.

These detectors are not designed to be reverse biased! Very slight improvement in response time may be obtained with a slight bias. Applying a reverse bias of more than a few volts (>3V) will permanently damage the detectors. If faster response times are required, the Photoconductive Series should be considered.

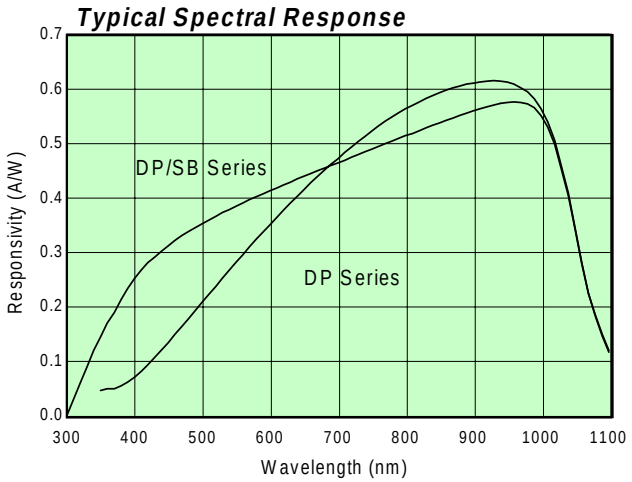
Refer to the *Photovoltaic Mode (PV)* paragraph in the "Photodiode Characteristics" section of this catalog for detailed information on electronics set up.

Typical Shunt Resistance vs Temp

Normalized at 23ºC



Typical Spectral Response



Model No.	Active Area		Responsivity (A/W)						Capacitance (pF)	Shunt Resistance (M-ohm)		NEP (W/√Hz)	Rise Time (ns)	Temp Range (° C)		Package Style ¶
	Area (mm²)	Dimension (mm)	400 nm		632 nm		970 nm		0 V	-10 mV		0V 970 nm	0 V 632 nm 50 ohm	Operating	Storage	
			min	typ	min	typ	min	typ	typ	min	typ	typ	typ			
DP SERIES, METAL PACKAGE																
PIN-2DPI *	1.1	.81 x 1.37	.07	.12	.33	.40	.55	.60	150	1000	10000	2.1 e -15	30	-40 ~ +100	-55 ~ +125	4 / TO-18
PIN-125DPL	1.6	1.27 sq.							160							8 / TO-18
PIN-3CDPI	3.2	1.27 x 2.54							320	750	5000	3.0 e -15	50			4 / TO-18
PIN-3CDP																7 / TO-18
PIN-5DPI	5.1	2.54φ							500	500	4000	3.4e -15	60			2 / TO-5
PIN-5DP																5 / TO-5
PIN-13DPI	13	3.6 sq							1200	350	3500	3.6 e -15	150			2 / TO-5
PIN-13DP																5 / TO-5
PIN-6DPI	16.4	4.57φ							2000	200	3000	3.9e -15	220			3 / TO-8
PIN-6DP																6 / TO-8
PIN-44DPI	44	6.6 sq							4300	100	2000	4.8 e -15	475			3 / TO-8
PIN-44DP																6 / TO-8
PIN-10DPI	100	11.28φ							9800	50	1000	6.8e -15	1000	-10 ~ +60	-20 ~ +70	10 / Lo-Prof
PIN-10DP																11 / BNC
PIN-25DP	613	27.9φ							60000	2	50	3.0 e -14	6600			12 / BNC
DP SERIES, PLASTIC PACKAGE §																
FIL-3V	3.2	1.27 x 2.54	.08	.12	.33	.40	.55	.60	320	750	5000	3.0 e -15	20	-10 ~ +60	-20 ~ +70	14 / Plastic
FIL-5V	5.1	2.54φ							500	500	4000	3.4e -15	60			
FIL-20V	16.4	4.57φ							2000	200	3000	3.9e -15	220			
FIL-44V	44	6.6 sq							4300	100	2000	4.8 e -15	475			15 / Plastic
FIL-100V	100	11.28φ							9800	50	1000	6.8e -15	1000			
PIN-220DP	200	10 x 20							20000	15	300	1.2 e -14	2200			26 / Plastic

SUPER BLUE ENHANCED DP/SB SERIES **(All Specifications @ = 410nm, V_{BIAS} = 0V, R_L = 50)**

Model No.	Active Area/Dimension		Responsivity (A/W)		Capacitance (pF)	Rsh (M-ohm)	NEP (W/√Hz)	Operat. Current (mA)	Rise Time (ns)	**	**	Pakcage Style ¶
	mm²	mm	Min	Typ	Typ	Min	Typ	Max	Typ			
PIN-5DP/SB	5.1	2.54φ	0.15	0.20	450	150	5.2 e -14	2.0	0.2	-10 ~ +60	-20 ~ +70	5 / TO-5
PNI-10DP/SB	100	11.28φ			8800	10	2.0e -13	10.0	2.0			11 / BNC
PIN-10DPI/SB												10 / LoProf
PIN-220DP/SB	200	10 x 20			17000	5	2.9 e -13	10.0	4.0			26 / Plastic

* The I suffix on the model number is indicative of the photodiode chip being isolated from the package by an additional pin connected to the case.
§ The photodiode chips in FIL series are isolated in a low profile plastic package. The have a large field of view as well as in line pins.
** Operating Temperature: -40 to +100 ºC, Storage Temperature: -55 to +125 ºC

For MECHANICAL DRAWINGS Click Here