

Features

- Ultra Low Noise
- High Shunt Resistance
- Wide Dynamic Range
- Blue Enhanced

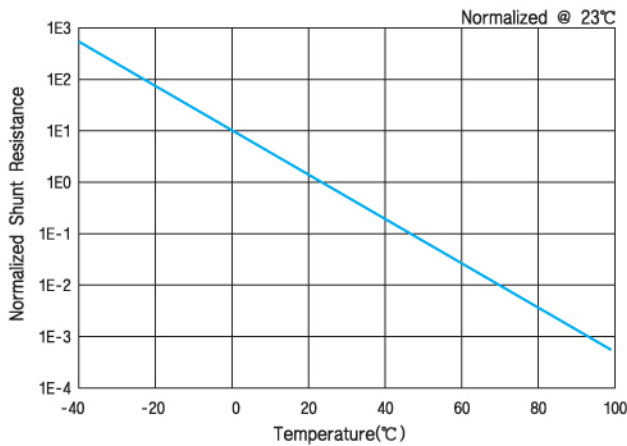
Applications

- Colorimeters
- Photometers
- Spectroscopy Equipment
- Fluorescence

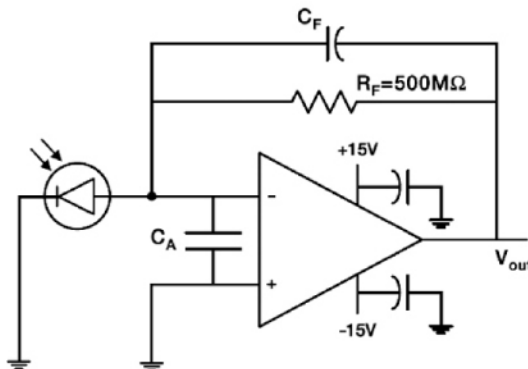
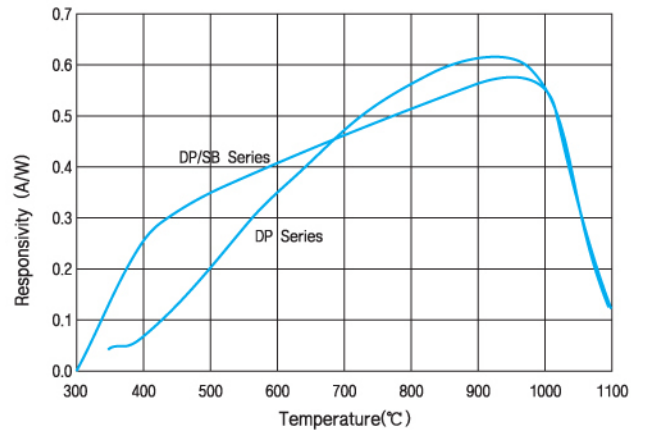


The Photovoltaic Detector series is utilized for applications requiring high sensitivity and moderate response speeds, with an additional sensitivity in the visible-blue region for the blue enhanced series. The spectral response ranges from 350 to 1100 nm, making the regular photovoltaic devices ideal 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/cm²), 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.

Typical Shunt Resistance vs. Temperature



Typical Spectral Response



Photovoltaic mode of operation circuit example: Ultra low level light / low speed

Typical Electro-Optical Specifications at $T_A=23^\circ\text{C}$

Model Number	Active Area		Peak Responsivity Wavelength	Responsivity at λp		Capacitance (pF)	Shunt Resistance ($G\Omega$)		NEP ($W/\sqrt{\text{Hz}}$)	Rise Time (ns)	Temp.* Range ($^\circ\text{C}$)		Package Style \square
	Area (mm^2)	Dimensions (mm)		λp (nm)	(A/W)		0 V	-10 mV			0 V	632 nm	
			typ.	min. typ.	max.	min. typ.	typ.	typ.					

'DP' Series, Metal Package

CD-1705	0.88	0.93 sq	850			70				2000			TO-18		
PIN-2DPI ⁽¹⁾	1.1	081 x 1.37	970	0.55	0.60	150	1.0	10	2.1e-15	30	-40 ~ +100	-55 ~ +125	TO-18		
PIN-125DPL	1.6	1.27 sq				160									TO-18
PIN-3CDPI	3.2	1.27 x 2.54				320	0.5	5.0	3.0e-15	50			TO-18		
PIN-3CDP														TO-18	
PIN-5DPI	5.1	2.54 \emptyset				500	0.4	4.0	3.4e-15	60			TO-5		
PIN-5DP														TO-5	
PIN-13DPI	13	3.6 sq				1200	0.35	3.5	3.6e-15	150			TO-5		
PIN-13DP														TO-5	
PIN-6DPI	16.4	4.57 \emptyset				2000	0.2	2.0	3.9e-15	220			TO-8		
PIN-6DP														TO-8	
PIN-44DPI	44	6.6 sq				4300	0.1	1.0	4.8e-15	475			TO-8		
PIN-44DP														TO-8	
PIN-10DPI	100	11.28 \emptyset				9800	0.05	0.2	6.8e-15	1000			Lo-Prof		
PIN-10DP														BNC	
PIN-25DP	613	27.9 \emptyset				60000	0.002	0.1	3.0e-14	6600			BNC		

'DP' Series, Plastic Package⁽²⁾

PIN-220DP	200	10 x 20	970	0.55	0.60	20000	0.02	0.2	1.2e-14	2200	-10~+60	-20~+70	27 / Plastic
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Super Blue Enhanced 'DP/SB' Series, (All Specification @ $\lambda = 410 \text{ nm}$, $V_{\text{BIAS}} = 0\text{V}$, $R_L = 50\Omega$)

Model No.	Active Area/Dimensions		Responsivity (A/W)		Capacitance (pF)	R_{sh} ($M\Omega$)	NEP ($W/\sqrt{\text{Hz}}$)	Operating Current (mA)	Rise Time (μs)			Package Style
	mm^2	mm	min.	typ.								
PIN-040DP/SB	0.81	1.02 \emptyset	0.15	0.20	60	600	2.0 e-14	0.5	0.02	-10 ~ +60	-20 ~ +70	TO-18
PIN-5DP/SB ⁽³⁾	5.1	2.54 \emptyset			450	150	5.2 e-14	2.0	0.2			TO-5
PIN-10DP/SB	100	11.28 \emptyset			8800	10	2.0 e-13	10.0	2.0			BNC
PIN-10DPI/SB												
PIN-220DP/SB	200	10 x 20			17000	5	2.9 e-13	10.0	4.0			Plastic

'5T' Series, Blue

Model No.	Active Area/Dimensions		Responsivity (A/W) 436nm		Capacitance (pF) 0V	R_{sh} ($M\Omega$)	NEP ($W/\sqrt{\text{Hz}}$)	Dark Current (pA)	Rise Time (μs)			Package Style
	mm^2	mm	min.	typ.								
OSD1-5T	1.0	1.0 sq	0.18	0.21	35	250	2.5e-14	1.0	7	-25 ~ +75	-45 ~ +100	TO-18
OSD3-5T	3.0	2.5 x 1.2			80	100	3.0e-14	2.0	9			TO-18
OSD5-5T	5.0	2.5 \emptyset			130	100	3.3e-14	2.0	9			TO-5
OSD15-5T	15.0	3.8 sq			390	50	5.6e-14	10.0	12			TO-5
OSD60-5T	62.0	7.9 sq			1800	3	2.1e-13	25.0	30			TO-8
OSD100-5TA	100.0	11.3 \emptyset			2500	2	2.5e-13	30.0	45			Special

⁽¹⁾ The '1' suffix on the model number is indicative of the photodiode chip being isolated from the package by an additional pin connected to the case.⁽²⁾ The photodiode chips in "FIL" series are isolated in a low profile plastic package. They have a large field of view as well as "in line" pins.⁽³⁾ Operating Temperature: -40 to +100 $^\circ\text{C}$, Storage Temperature: -55 to +125 $^\circ\text{C}$.

* Non-Condensing temperature and Storage Range, Non-Condensing Environment.