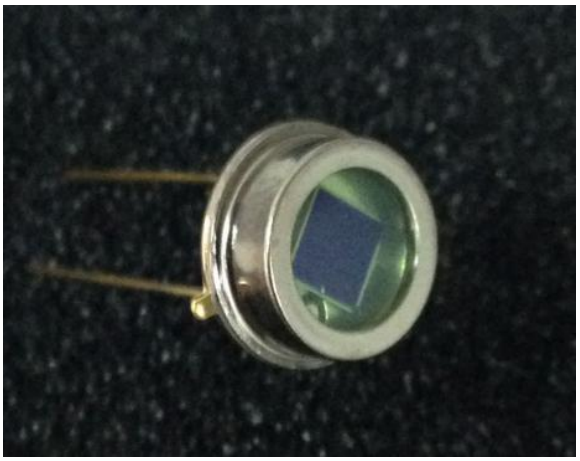
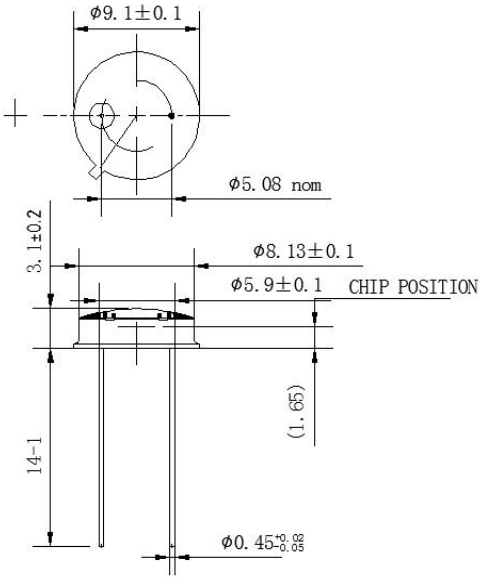
Visible Sensitive Photodiode

BPW21





NOTES:

All dimension are in millimeters.

Description

OTRON BPW21 is a planar Silicon PN photodiode in a Hermetically sealed short TO-5 case, especially designed For high precision linear applications.

It's equipped with a flat glass window with built in color correction filter, Sensitivity approximating eye response achieved by incorporating filter in package with silicon photodiode chip.

Features

* Especially suitable for application from 300nm to 700nm
* Adapted to human eye sensitivity(Vλ)
* Hermetically sealed metal package
* Operating temperature is from -40 to +80℃
* Storage temperature is from -40 to +100℃
* soldering temperature is 260℃ @Max.5 seconds at the position of 2mm from the PIN leg.

General Ratings

* Type Silicon Photodiode
* Chip active area: 3.0mm*3.0mm
* Low dark current

Applications

*Exposure meter for daylight
*Analytical instrument/ Medical equipment
*LED/Alphanumeric Operational Monitor
*Illuminometer/ Luminance meter
*CRT Brightness Control

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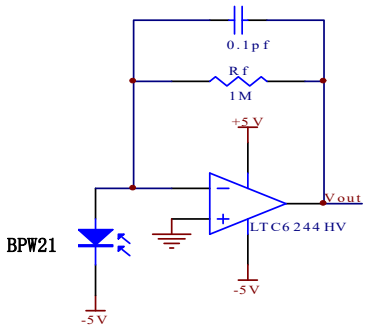
Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Short circuit Current	I_{SC}	Ev=1000lx fc=2856k*		10		μA
Isc Tempereture Coefficient	TC Isc	2856k		1.1		%/℃
Open Circuit Voitage	Voc	Ev=1000lx fc=2856k*		460		mV
Voc Tempereture Coefficient	TC Voc	2856k		-2.2		mV/℃
Dark current	I_D	V_R=10mV			20	pA
		V_R=10V			500	
Rise time	t_R	VR=5V; λ=850nm;RL=50Ω		1		μs
Tempcoeffi-cient of I_D	T_{CID}			0.18		times/℃
Reverse breakdown voltage	$V_{(BR)R}$	I_R=100μA Ev=0lx	35			V
Junction Capacitance	C_J	V_R=0V f=1MHz		37		pF
		V_R=10V f=1MHz		7		
Photo sensitivity	S_R	460nm		0.17		A/W
		550nm		0.21		
Spectral Application Range	λ_{range}		300		700	nm
Spectral Response-Peak	λ_p			550		nm
Shunt resistance	Rsh	V_R=10mV		0.5		GΩ
Rsh Temperature Coefficient	TC Rsh			0.18		%/℃
Angular Resp 50% Resp Pt	$\theta_{1/2}$			±55		Degrees
Noise Equivalent Power	NEP	V_R=10V λ=730nm		6.02×10^{-14}		$W/Hz^{1/2}$
Specific Detectivity	D*	V_R=10V λ=730nm		0.49×10^{13}		$cm(Hz/W)^{1/2}$

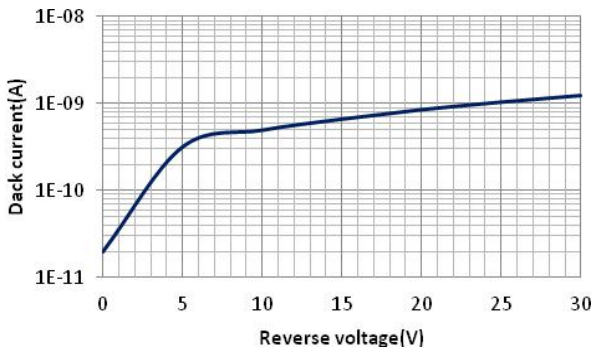
* Ev: Illuminance by CIE standard light source A (tungsten lamp)

■Typical application circuit

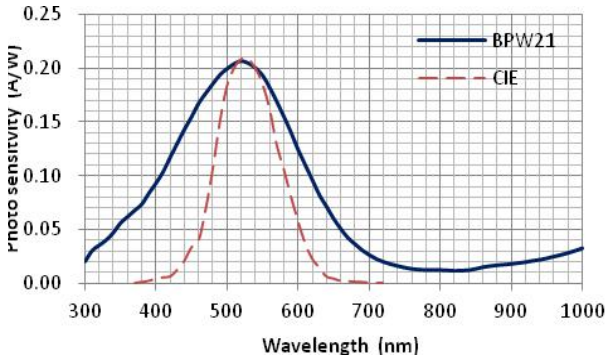


Information in this technical datasheet is believed to be correct and reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject change without notice

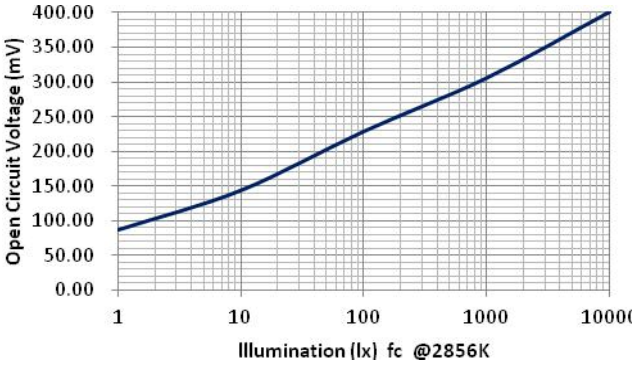
■Dark current vs. reverse voltage



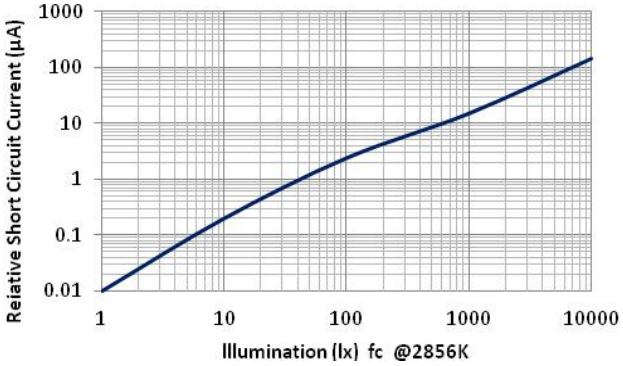
■ Spectral response



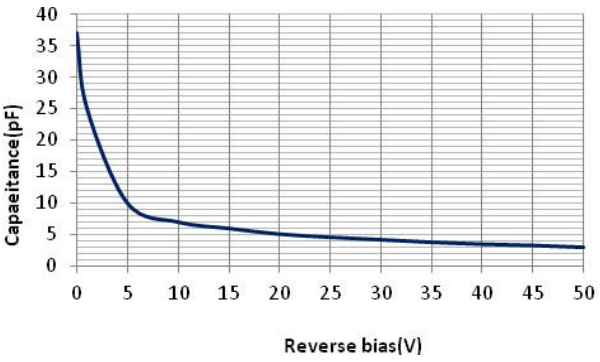
■Open circuit Voltage vs Illumination



■Relative Short Circuit Current vs. Illumination



■Relative Junction Capacitance VS. Voltage



■Quantum efficiency