

# BS530 Series Photodiode for Ultra-violet

T-41-51

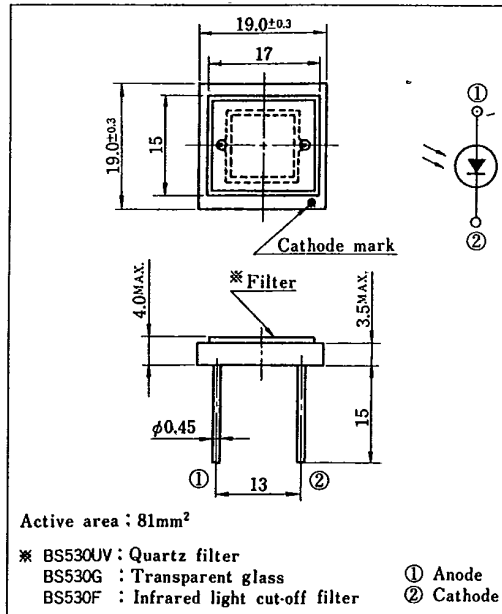
## Features

1. High sensitivity in ultra-violet range (BS530UV)
2. A wide range of sensitivity wavelength (BS530UV :  $\lambda = 200 \sim 1,150\text{nm}$ )
3. High output (BS530UV, BS530G  $I_{sc}$  : MIN.  $35.0\mu\text{A}$  at  $E_v = 100 \ell\text{x}$ )
4. Infrared light cut-off type (BS530F)

## Applications

1. BS530UV : Spectrophotometers
2. BS530F : Color analysis for color copiers
3. BS530G : Illuminance meters

## Outline Dimensions (Unit : mm)



## Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	BS530UV	BS530G	BS530F	Unit
Reverse voltage	$V_R$	5	5	5	V
Operating temperature	$T_{opr}$	$-10 \sim +60$	$-10 \sim +60$	$-10 \sim +60$	°C
Storage temperature	$T_{stg}$	$-20 \sim +80$	$-20 \sim +80$	$-20 \sim +80$	°C
*Soldering temperature	$T_{sol}$	260	260	260	°C

\*1 For 5 seconds

## Electro-optical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	BS530UV			BS530G			BS530F			Unit
			MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
*Open circuit voltage	$V_{oc}$	$E_v = 100 \ell\text{x}$	0.30	0.35	—	0.30	0.35	—	0.25	0.30	—	V
*Short circuit current	$I_{sc}$	$E_v = 100 \ell\text{x}$	35.0	50.0	—	35.0	50.0	—	7.0	10.0	—	$\mu\text{A}$
Dark current	$I_d$	$V_R = 1\text{V}$	—	$5 \times 10^{-9}$	$5 \times 10^{-8}$	—	$5 \times 10^{-9}$	$10^{-7}$	—	$6 \times 10^{-9}$	$5 \times 10^{-8}$	pF
Peak sensitivity wavelength	$\lambda_p$		—	800	—	—	800	—	—	600	—	nm
Sensitivity wavelength width			200	—	1,150	350	—	1,150	400	—	750	nm
Response time	$t_r, t_f$	$R_L = 1\text{k}\Omega$	—	30	—	—	30	—	—	30	—	$\mu\text{s}$

\*2  $E_v$  : Illuminance by CIE standard light source A (tungsten lamp)

SHARP

Fig. 1 Photocurrent vs. Illuminance

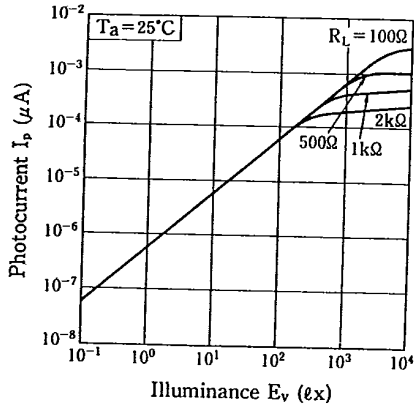


Fig. 2 Photocurrent vs. Forward Voltage

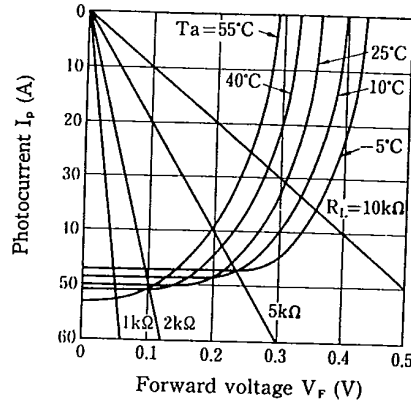


Fig. 3 Dark Current vs. Reverse Voltage

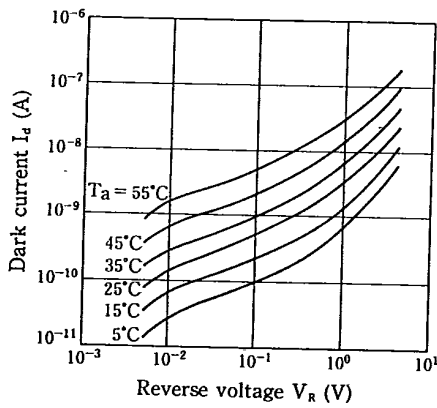
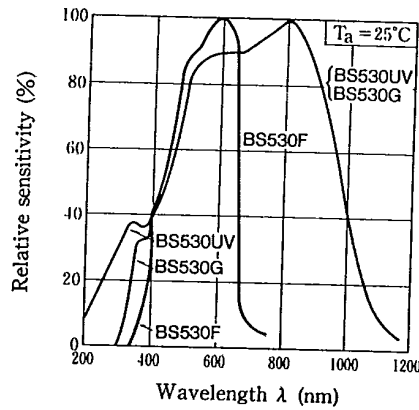
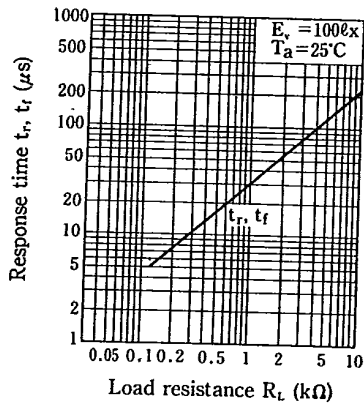


Fig. 4 Spectral Sensitivity



4

Fig. 5 Response Time vs. Load Resistance



Test Circuit for Response Time

