

BS530 Series Photodiode for Ultra-violet

T-41-51

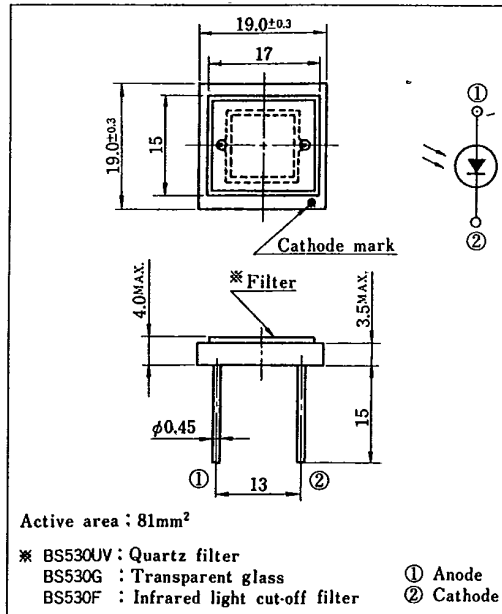
■ Features

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

($T_a = 25^\circ\text{C}$)

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

*1 For 5 seconds

■ Electro-optical Characteristics

($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Conditions	BS530UV			BS530G			BS530F			Unit
			MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
* ¹ Open circuit voltage	V_{oc}	$E_v = 100 \ell\text{x}$	0.30	0.35	—	0.30	0.35	—	0.25	0.30	—	V
* ² Short circuit current	I_{sc}	$E_v = 100 \ell\text{x}$	35.0	50.0	—	35.0	50.0	—	7.0	10.0	—	μA
Dark current	I_d	$V_R = 1\text{V}$	—	5×10^{-9}	5×10^{-8}	—	5×10^{-9}	10^{-7}	—	6×10^{-9}	5×10^{-8}	pF
Peak sensitivity wavelength	λ_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	—	μs

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

SHARP

Fig. 1 Photocurrent vs. Illuminance

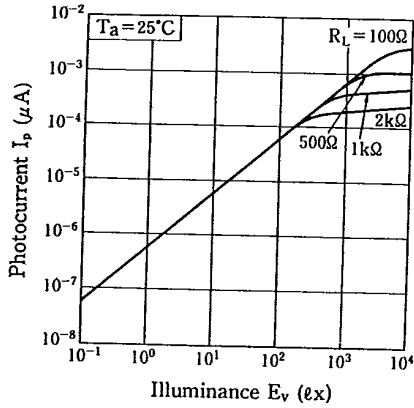


Fig. 2 Photocurrent vs. Forward Voltage

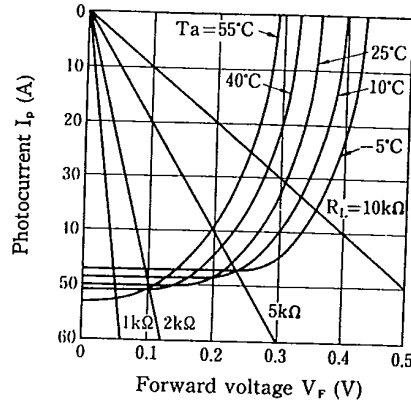


Fig. 3 Dark Current vs. Reverse Voltage

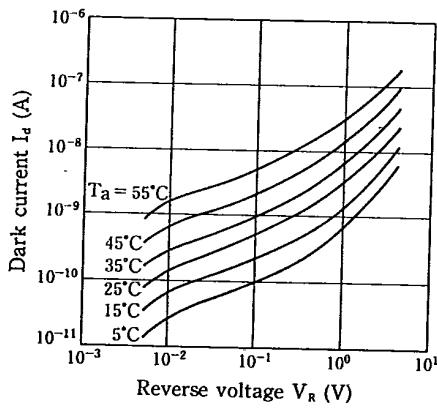
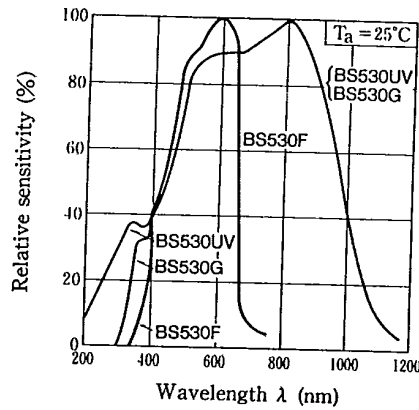
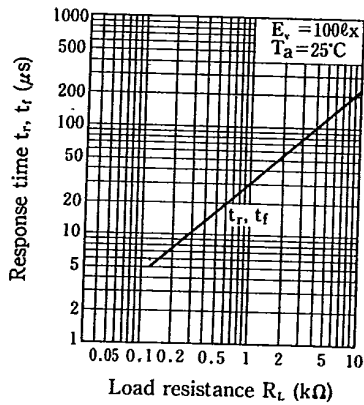


Fig. 4 Spectral Sensitivity



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Fig. 5 Response Time vs. Load Resistance



Test Circuit for Response Time

