

BS500A/BS501A

Wide Wavelength Band
Type Photodiode

T-41-31

Features

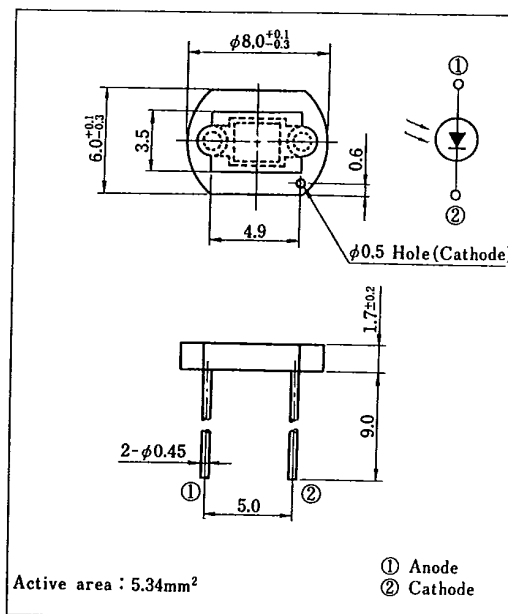
1. High sensitivity (I_{sc} : MIN. $3.3\mu A$ at $E_v = 100\ell x$)
2. Wide dynamic range
3. A wide range of sensitivity wavelength

Applications

1. AE (automatic exposure) system and ES (electronic shutter) system for cameras
2. Stroboscopes
3. Precise optical instruments

Outline Dimensions

(Unit : mm)



Absolute Maximum Ratings

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

Parameter	Symbol	BS500A	BS501A	Unit
Reverse voltage	V_R	10	10	V
Operating temperature	T_{opr}	$-10 \sim +60$	$-10 \sim +60$	$^\circ\text{C}$
Storage temperature	T_{stg}	$-20 \sim +80$	$-20 \sim +80$	$^\circ\text{C}$
*1 Soldering temperature	T_{sol}	260	260	$^\circ\text{C}$

*1 For 5 seconds

Electro-optical Characteristics

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

Parameter	Symbol	Conditions	BS500A			BS501A			Unit
			MIN.	TYP.	MAX.	MIN.	TYP.	MAX.	
*2 Short circuit current	I_{sc}	$E_v = 100\ell x$	3.3	—	5.5	3.3	—	5.5	μA
*2 Short circuit current temperature coefficient	β_T	$E_v = 100\ell x$	—	0.2	—	—	0.2	—	$\%/^\circ\text{C}$
Dark current	I_d	$V_R = 2V$	—	10^{-11}	2×10^{-9}	—	3×10^{-12}	5×10^{-12}	A
Terminal capacitance	C_t	$V_R = 0, f = 1\text{MHz}$	—	600	—	—	600	—	pF
Peak sensitivity wavelength	λ_p		800	850	900	800	850	900	nm

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

SHARP

Fig. 1 Short Circuit Current vs. Illuminance

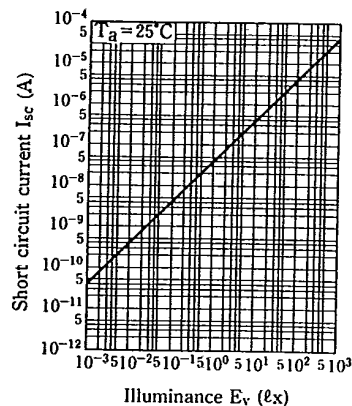


Fig. 2 Relative Short Circuit Current vs. Ambient Temperature
T-41-51

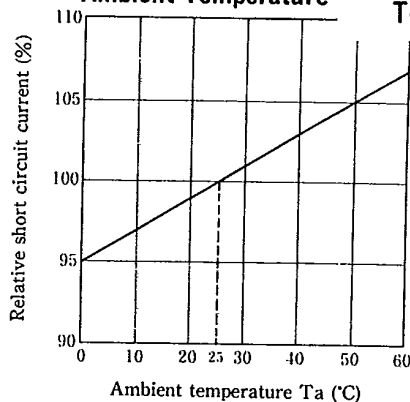


Fig. 3 Dark Current vs. Reverse Voltage

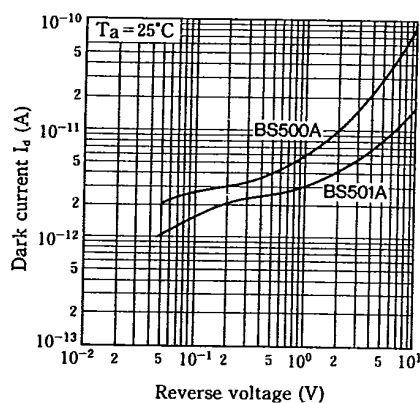
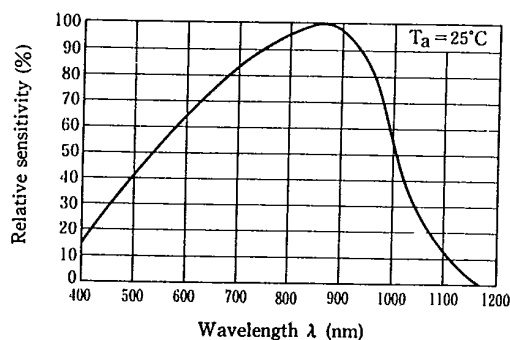
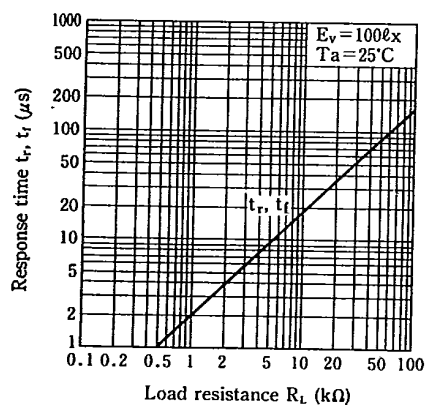


Fig. 4 Spectral Sensitivity



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Fig. 5 Response Time vs. Load Resistance



Test Circuit for Response Time

