

BS100C Photodiode for Visible Light

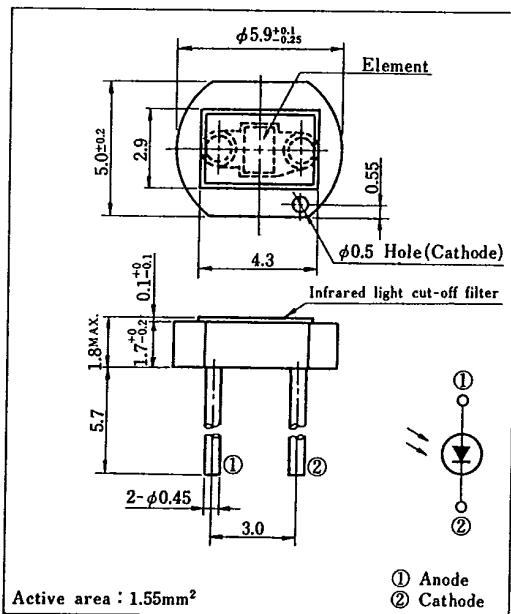
T-41-51

■ Features

1. Wide dynamic range
(Capable of $E_v = 10^{-3} \sim 10^4 \text{lx}$ range measurement)
2. Low dark current
(I_d : MAX. 10^{-11}A at $V_R = 1V$)
3. Infrared light cut-off type

■ Applications

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

■ Outline Dimensions (Unit : mm)

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■ Absolute Maximum Ratings(T_a=25°C)

Parameter	Symbol	Rating	Unit
Reverse voltage	V _R	10	V
Operating temperature	T _{opr}	-20 ~ +60	°C
Storage temperature	T _{sig}	-30 ~ +80	°C
*1 Soldering temperature	T _{sol}	260	°C

*1 For 5 seconds

■ Electoro-optical Characteristics(T_a=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*2 Short circuit current	I _{sc}	$E_v = 100 \text{ lx}$	0.14	0.16	0.21	μA
*2 Short circuit current temperature coefficient	β _T	$E_v = 100 \text{ lx}$	—	0.02	0.07	%/°C
Dark current	I _d	$V_R = 1V$	—	3×10^{-12}	10^{-11}	A
Dark current temperature coefficient	α _T	$V_R = 1V$	—	3.5	5.0	times/10°C
Terminal capacitance	C _t	$V_R = 0, f = 1\text{MHz}$	—	—	500	pF
Peak sensitivity wavelength	λ _p		500	560	600	nm
*3 Spectral sensitivity infrared radiation ratio	ΔI _R		—	6	10	%

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

*3 $\Delta I_R = \frac{I_{sc}(\lambda \geq 700\text{nm})}{I_{sc}(\text{full wavelength})} \times 100\%$

Fig. 1 Short Circuit Current vs. Illuminance

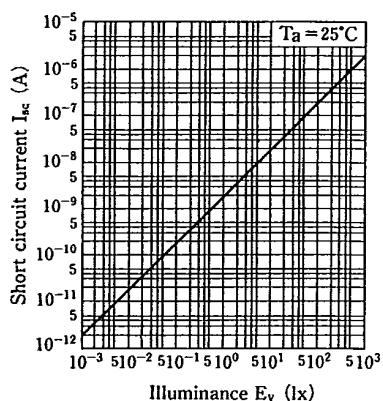


Fig. 2 Short Circuit Current vs. Ambient Temperature

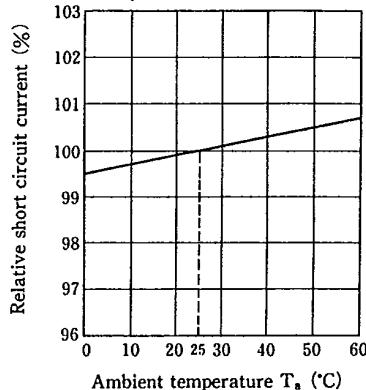


Fig. 3 Dark Current vs. Reverse Voltage

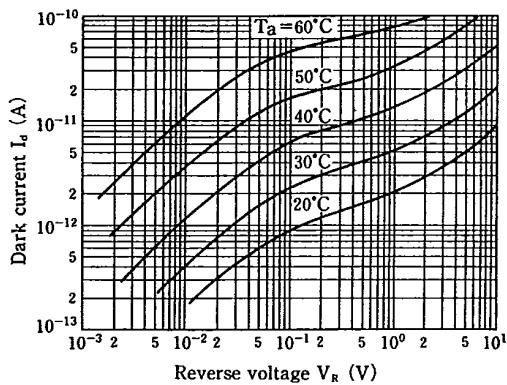


Fig. 4 Spectral Sensitivity

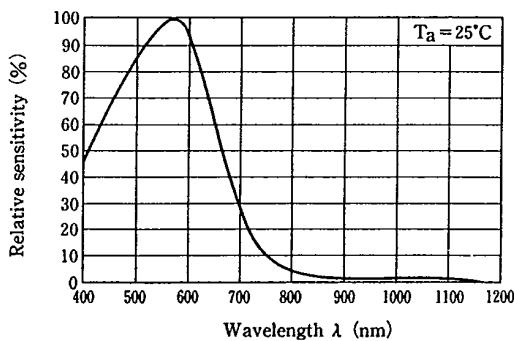
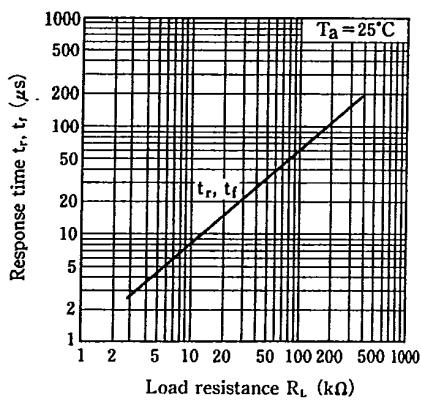


Fig. 5 Response Time vs. Load Resistance



Test Circuit for Response Time

