

# BS100C Photodiode for Visible Light

T-41-51

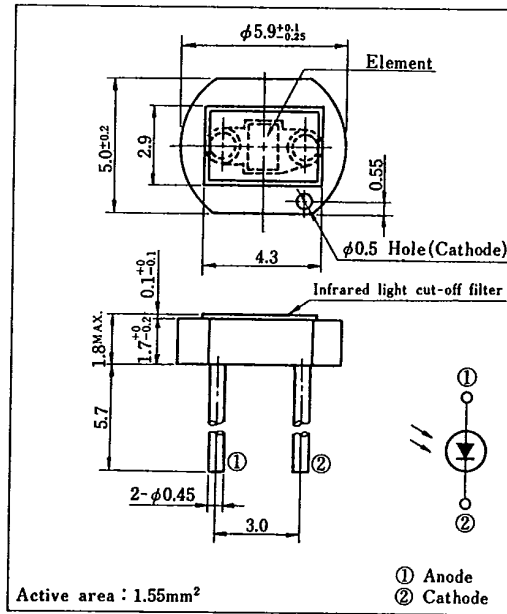
## Features

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

## Applications

- AE (automatic exposure) system and ES (electronic shutter) system for cameras
- Precise optical instruments

## Outline Dimensions (Unit : mm)



4

## Absolute Maximum Ratings (T<sub>a</sub> = 25°C)

Parameter	Symbol	Rating	Unit
Reverse voltage	V <sub>R</sub>	10	V
Operating temperature	T <sub>opr</sub>	-20 ~ +60	°C
Storage temperature	T <sub>stg</sub>	-30 ~ +80	°C
*1 Soldering temperature	T <sub>sol</sub>	260	°C

\*1 For 5 seconds

## Electro-optical Characteristics (T<sub>a</sub> = 25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
**Short circuit current	I <sub>sc</sub>	E <sub>v</sub> = 100 ℓx	0.14	0.16	0.21	μA
**Short circuit current temperature coefficient	β <sub>I</sub>	E <sub>v</sub> = 100 ℓx	—	0.02	0.07	%/°C
Dark current	I <sub>d</sub>	V <sub>R</sub> = 1V	—	3 × 10 <sup>-12</sup>	10 <sup>-11</sup>	A
Dark current temperature coefficient	α <sub>I</sub>	V <sub>R</sub> = 1V	—	3.5	5.0	times/10°C
Terminal capacitance	C <sub>t</sub>	V <sub>R</sub> = 0, f = 1MHz	—	—	500	pF
Peak sensitivity wavelength	λ <sub>p</sub>		500	560	600	nm
**Spectral sensitivity infrared radiation ratio	ΔI <sub>R</sub>		—	6	10	%

\*2 E<sub>v</sub> : Illuminance by CIE standard light source A (tungsten lamp)

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

Fig. 1 Short Circuit Current vs. Illuminance

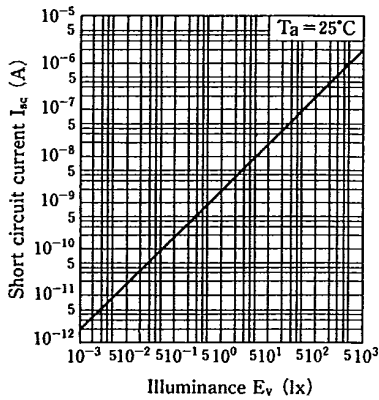


Fig. 2 Short Circuit Current vs. Ambient Temperature

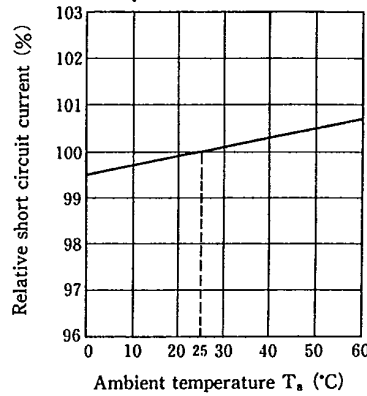


Fig. 3 Dark Current vs. Reverse Voltage

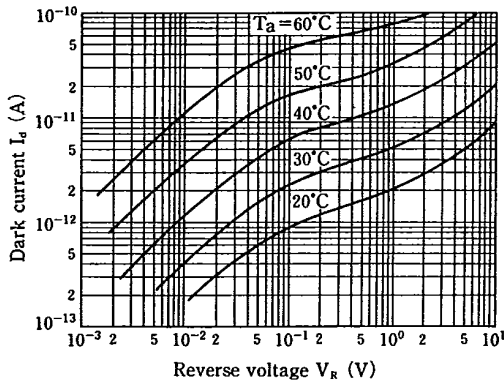


Fig. 4 Spectral Sensitivity

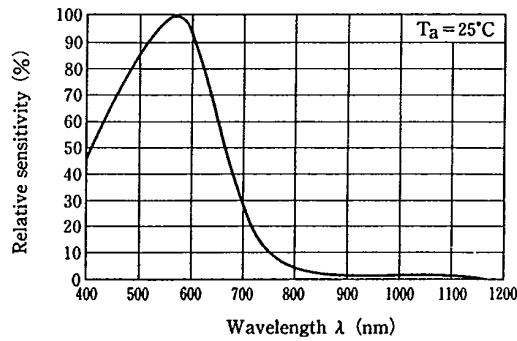
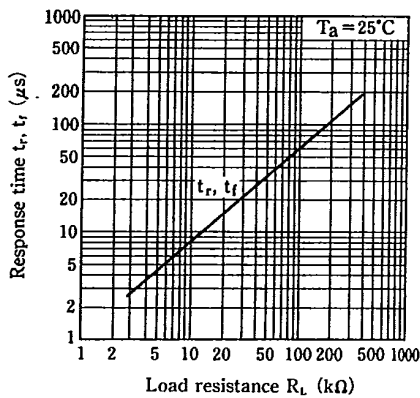


Fig. 5 Response Time vs. Load Resistance



Test Circuit for Response Time

