

BS100C Photodiode for Visible Light

T-41-51

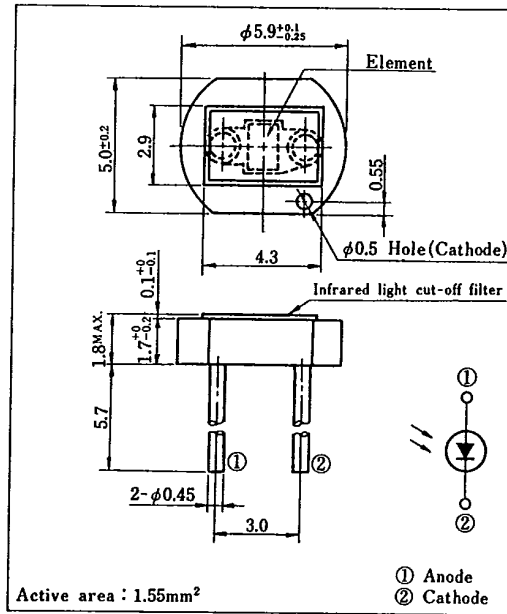
Features

- 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_a = 25°C)

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

*1 For 5 seconds

Electro-optical Characteristics (T_a = 25°C)

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

*2 E_v : 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

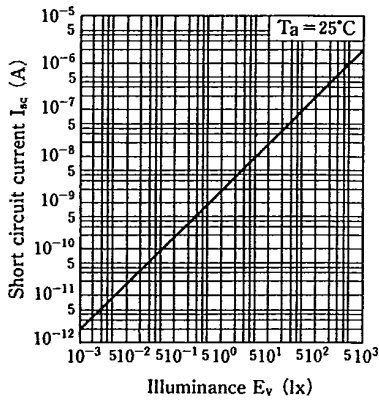


Fig. 2 Short Circuit Current vs. Ambient Temperature

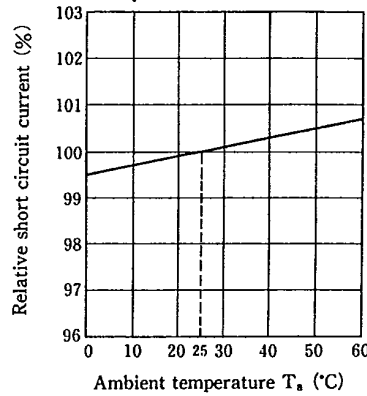


Fig. 3 Dark Current vs. Reverse Voltage

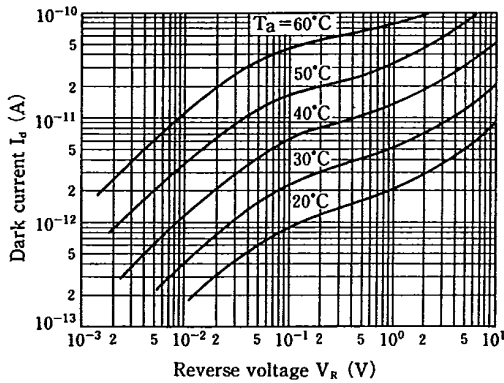


Fig. 4 Spectral Sensitivity

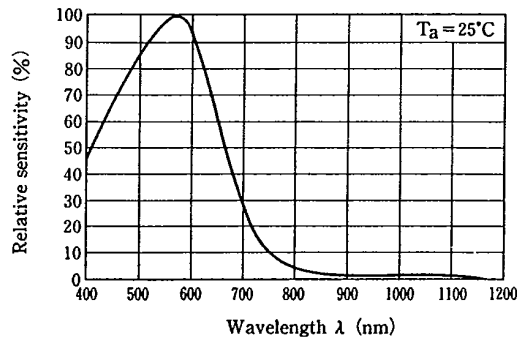
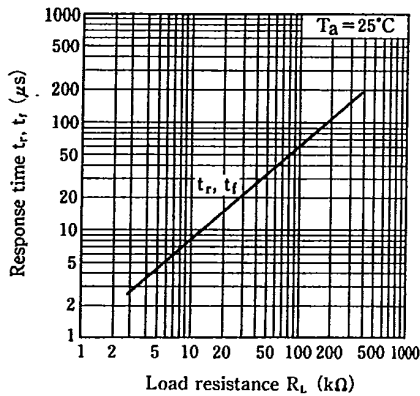
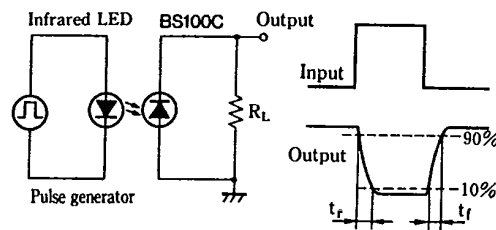


Fig. 5 Response Time vs. Load Resistance



Test Circuit for Response Time



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