BS120

Photodiode for Visible Light

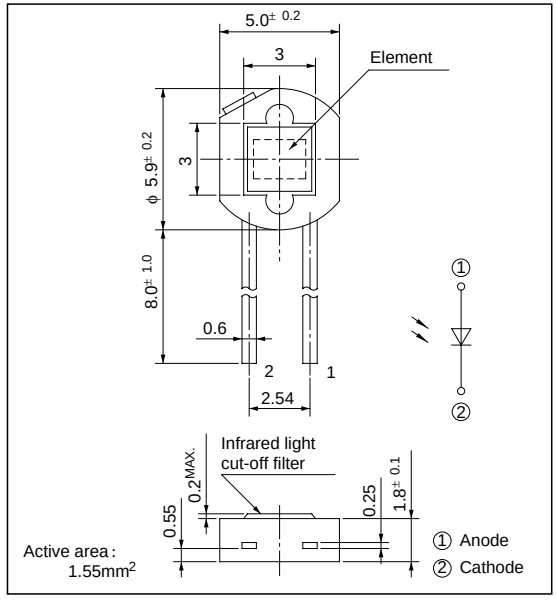
■ Features

1. Spectral sensitivity characteristics akin to that of human eye
2. Compact flat package
3. Low dark current(I_d: MAX. 10^{-11}A at V_R= 1V)
4. Infrared light cut-off type

■ 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 (Ta= 25˚C)

Parameter	Symbol	Rating	Unit
Reverse voltage	V_R	10	V
Operating temperature	T_{opr}	-20 to + 60	˚C
Storage temperature	T_{stg}	-30 to + 80	˚C
*1 Soldering temperature	T_{sol}	260	˚C

*1 For 10 seconds

■ Electro-optical Characteristics (Ta= 25˚C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*2 Short circuit current	I_{SC}	E_V= 100lx	0.14	0.16	0.21	μ A
*2 Short circuit current temperature coefficient	β_T	E_V= 100lx	- 0.03	0.02	0.07	%/˚C
Dark current	I_d	V_R= 1V	-	3 x 10^{-12}	10^{-11}	A
Dark current temperature coefficient	α_T	V_R= 1V	-	3.5	5.0	*3 times/10˚C
Terminal capacitance	C_t	V_R= 0, f= 1MHz	-	-	500	pF
Peak sensitivity wavelength	λ_p	-	500	560	600	nm
*4 Spectral sensitivity infrared radiation ratio	ΔI_R	-	-	6	10	%

*2 E_V: Illuminance by CIE standard light source A(tungsten lamp)
*3 times/10˚C
*4 $\Delta I_R = \frac{I_{SC}(\lambda >= 700nm)}{I_{SC}(\text{full wavelength})} \times 100\%$

Fig. 1 Short Circuit Current vs. Illuminance

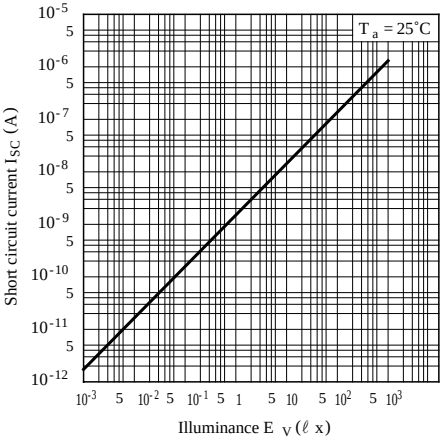


Fig. 2 Relative Short Circuit Current vs. Ambient Temperature

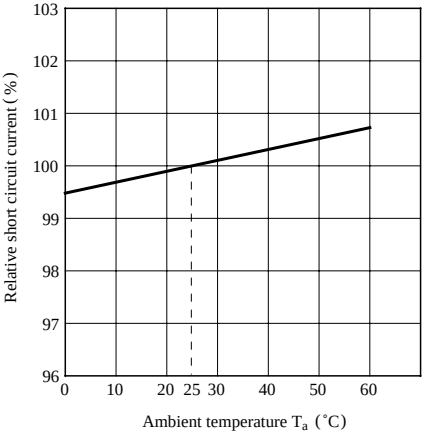


Fig. 3 Dark Current vs. Reverse Voltage

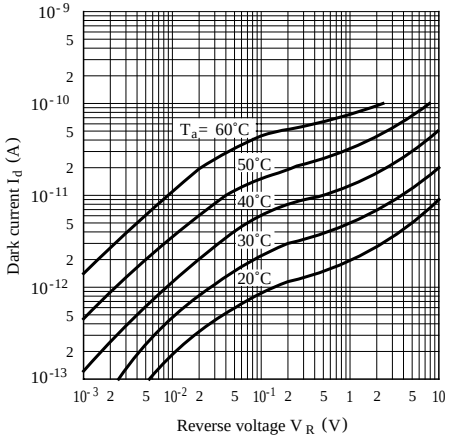


Fig. 4 Spectral Sensitivity

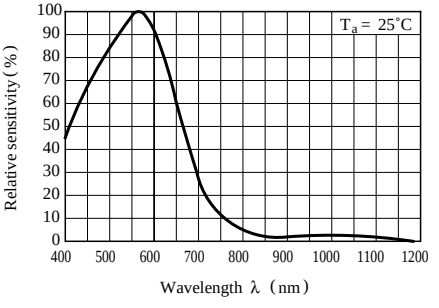
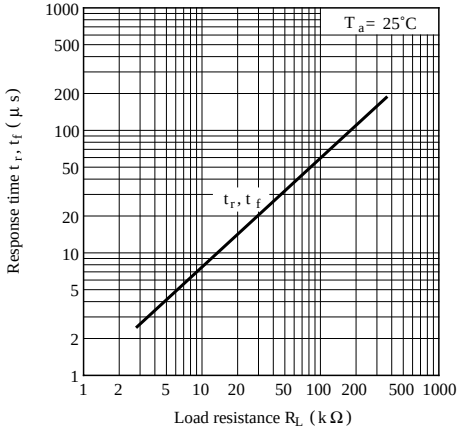
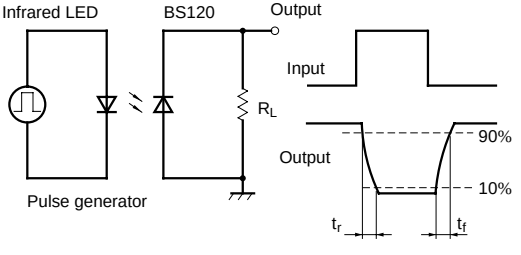


Fig. 5 Response Time vs. Load Resistance



Test Circuit for Response Time



● Please refer to the chapter "Precautions for Use."