

# BS120

## Photodiode for Visible Light

### ■ Features

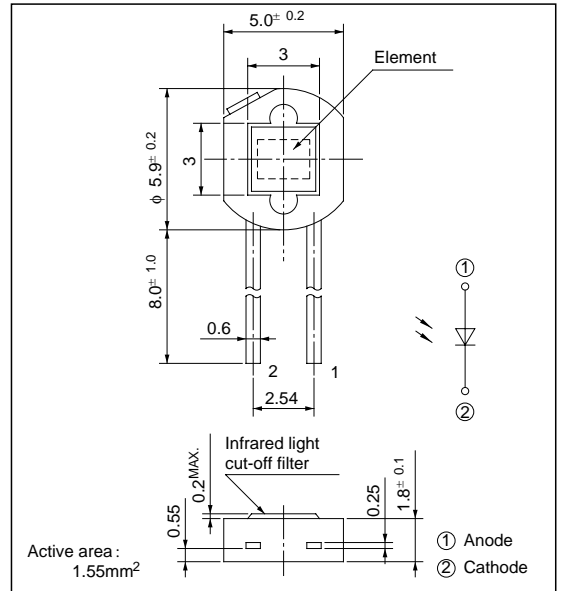
1. Spectral sensitivity characteristics akin to that of human eye
2. Compact flat package
3. Low dark current ( $I_d$ : MAX.  $10^{-11}$  A at  $V_R = 1$  V)
4. Infrared light cut-off type

### ■ 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	$I_{sc}$	$E_v = 100$ lx	0.14	0.16	0.21	$\mu$ A
*2 Short circuit current temperature coefficient	$\beta_T$	$E_v = 100$ lx	- 0.03	0.02	0.07	% /°C
Dark current	$I_d$	$V_R = 1$ V	-	$3 \times 10^{-12}$	$10^{-11}$	A
Dark current temperature coefficient	$\alpha_T$	$V_R = 1$ V	-	3.5	5.0	*3 times/10°C
Terminal capacitance	$C_t$	$V_R = 0, f = 1$ MHz	-	-	500	pF
Peak sensitivity wavelength	$\lambda_p$	-	500	560	600	nm
*4 Spectral sensitivity infrared radiation ratio	$\Delta I_R$	-	-	6	10	%

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

\*3 times/10°C

\*4  $\Delta I_R = \frac{I_{sc}(\lambda \geq 700\text{nm})}{I_{sc}(\text{full wavelength})} \times 100\%$

Fig. 1 Short Circuit Current vs. Illuminance

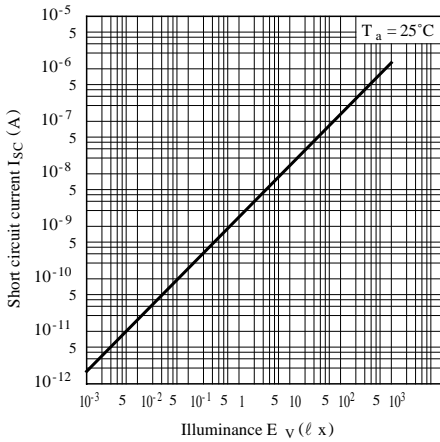


Fig. 2 Relative Short Circuit Current vs. Ambient Temperature

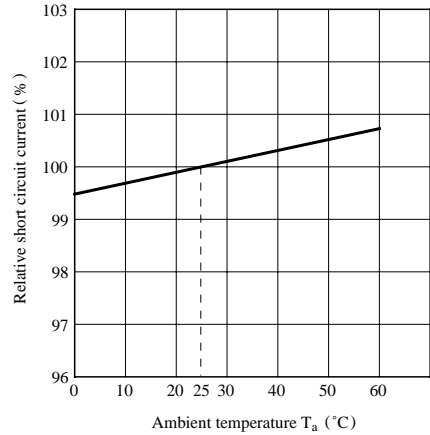


Fig. 3 Dark Current vs. Reverse Voltage

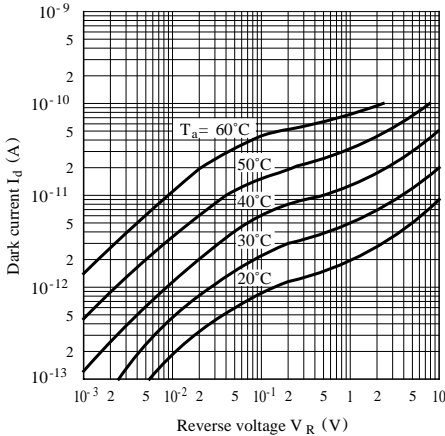


Fig. 4 Spectral Sensitivity

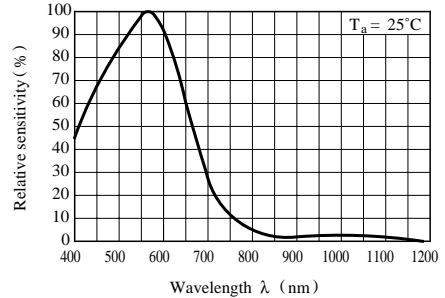
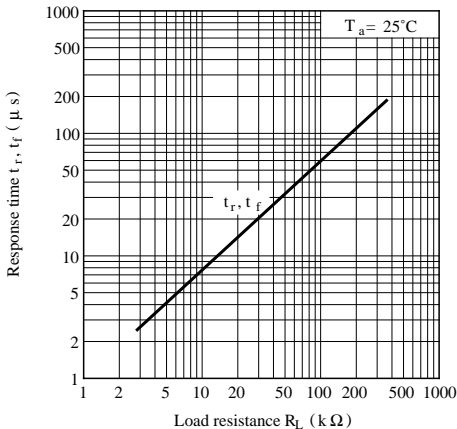


Fig. 5 Response Time vs. Load Resistance



Test Circuit for Response Time

