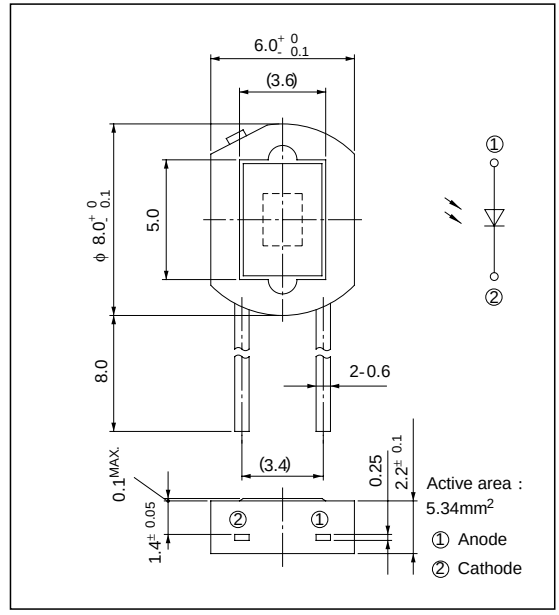
BS520

Photodiode for Visible Light

■ Features

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

■ Outline Dimensions (Unit:mm)



■ Applications

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

■ 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 5 seconds

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

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
*2 Short circuit current	I_{SC}	E_V= 100lx	0.40	0.55	0.65	μA
*2 Short circuit current temperature coefficient	β_T	E_V= 100lx	-	0.02	0.06	%/˚C
Dark current	I_d	V_R= 1V	-	3 x 10 -12	10 -11	A
Dark current temperature coefficient	α_T	V_R= 1V	-	4.0	5.0	times/ 10˚C
Terminal capacitance	C_t	V_R= 0, f= 100kHz	-	600	1 000	pF
Peak sensitivity wavelength	λ_p	-	500	560	600	nm
*3 Spectral sensitivity infrared radiation ratio	ΔI_R	-	-	5	10	%

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

*3 $\Delta I_R = \frac{I_{SC}(\lambda >= 700nm)}{I_{SC}(\text{entire wavelength})} \times 100\%$

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Fig. 1 Short Circuit Current vs. Illuminance

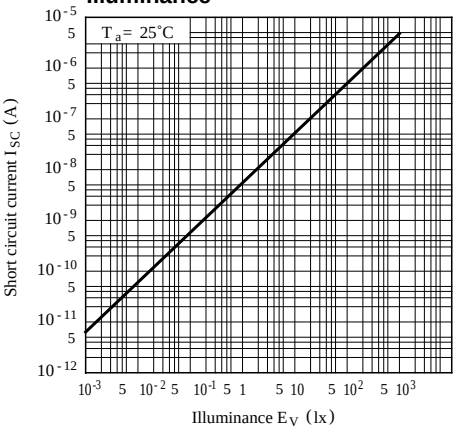


Fig. 2 Relative Short Circuit Current vs. Ambient Temperature

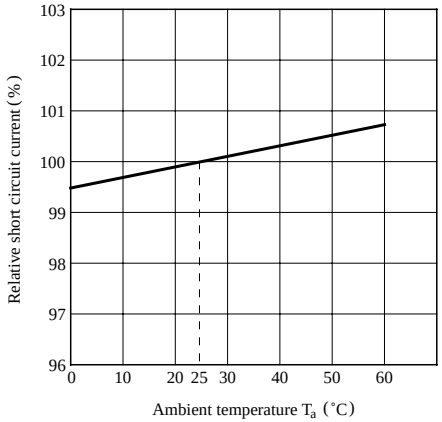


Fig. 3 Dark Current vs. Reverse Voltage

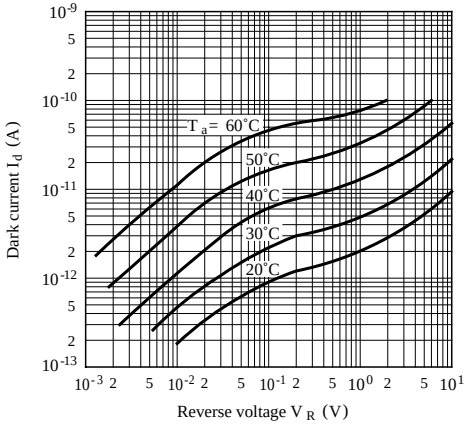


Fig. 4 Spectral Sensitivity

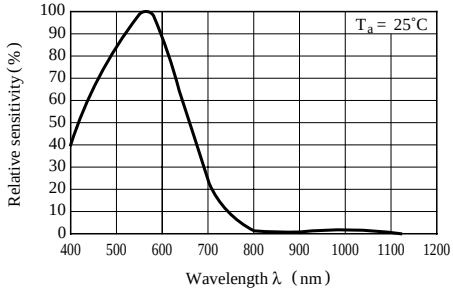
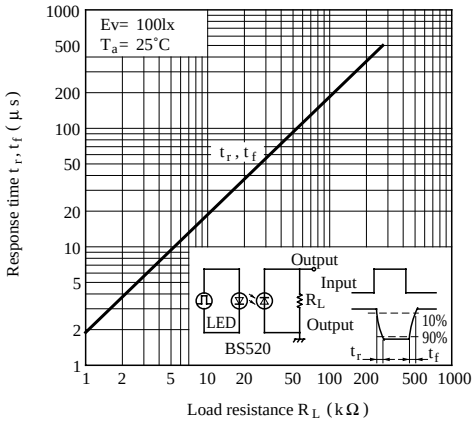


Fig. 5 Response Time vs. Load Resistance



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

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- Office automation equipment
- Telecommunication equipment [terminal]
- Test and measurement equipment
- Industrial control
- Audio visual equipment
- Consumer electronics

(ii) Measures such as fail-safe function and redundant design should be taken to ensure reliability and safety when SHARP devices are used for or in connection with equipment that requires higher reliability such as:
- Transportation control and safety equipment (i.e., aircraft, trains, automobiles, etc.)
- Traffic signals
- Gas leakage sensor breakers
- Alarm equipment
- Various safety devices, etc.

(iii) SHARP devices shall not be used for or in connection with equipment that requires an extremely high level of reliability and safety such as:
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- Telecommunication equipment [trunk lines]
- Nuclear power control equipment
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