

BS500A/BS501A Wide Wavelength Band Type Photodiode T-41-31

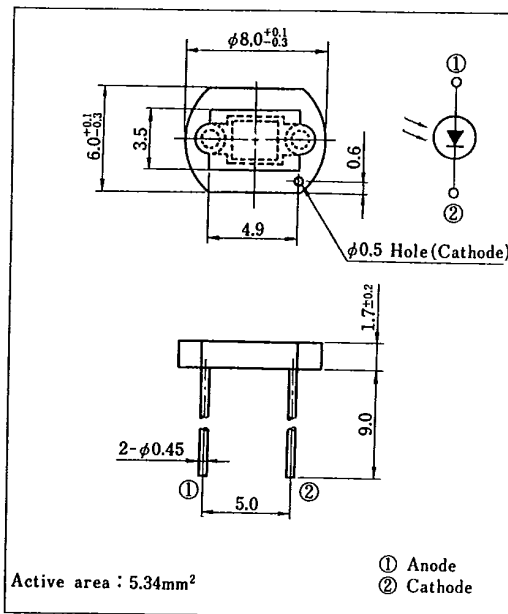
Features

1. High sensitivity (I_{sc} : MIN. $3.3\mu A$ at $E_v = 100 lx$)
2. Wide dynamic range
3. A wide range of sensitivity wavelength

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

($T_a = 25^\circ C$)

| Parameter | Symbol | BS500A | BS501A | Unit |
|--------------------------|-----------|-----------|-----------|------------|
| Reverse voltage | V_R | 10 | 10 | V |
| Operating temperature | T_{opr} | -10 ~ +60 | -10 ~ +60 | $^\circ C$ |
| Storage temperature | T_{stg} | -20 ~ +80 | -20 ~ +80 | $^\circ C$ |
| *1 Soldering temperature | T_{sol} | 260 | 260 | $^\circ C$ |

*1 For 5 seconds

Electro-optical Characteristics

($T_a = 25^\circ C$)

| Parameter | Symbol | Conditions | BS500A | | | BS501A | | | Unit |
|--|-------------|---------------------|--------|------------|--------------------|--------|---------------------|---------------------|---------------|
| | | | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. | |
| *2 Short circuit current | I_{sc} | $E_v = 100 lx$ | 3.3 | — | 5.5 | 3.3 | — | 5.5 | μA |
| *2 Short circuit current temperature coefficient | β_T | $E_v = 100 lx$ | — | 0.2 | — | — | 0.2 | — | %/ $^\circ C$ |
| Dark current | I_d | $V_R = 2V$ | — | 10^{-11} | 2×10^{-9} | — | 3×10^{-12} | 5×10^{-12} | A |
| Terminal capacitance | C_t | $V_R = 0, f = 1MHz$ | — | 600 | — | — | 600 | — | pF |
| Peak sensitivity wavelength | λ_p | | 800 | 850 | 900 | 800 | 850 | 900 | nm |

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

SHARP

Fig. 1 Short Circuit Current vs. Illuminance

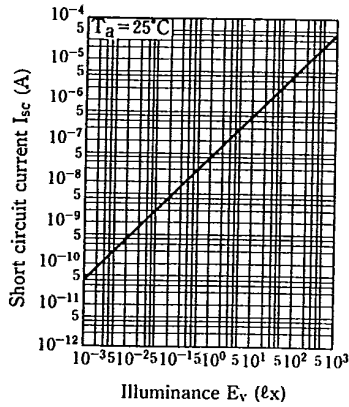


Fig. 2 Relative Short Circuit Current vs. Ambient Temperature

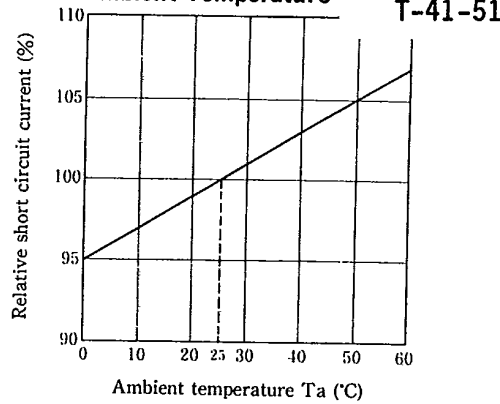


Fig. 3 Dark Current vs. Reverse Voltage

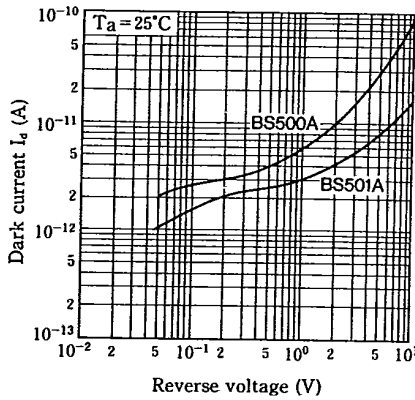
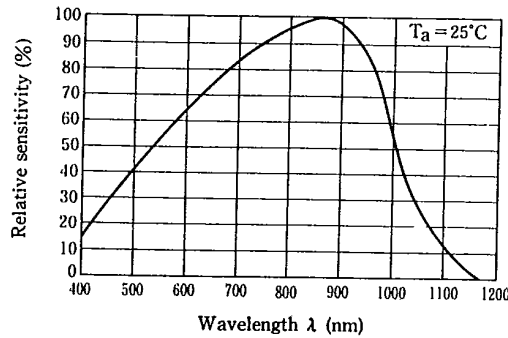
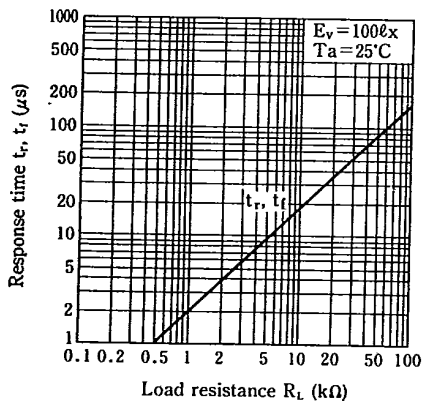


Fig. 4 Spectral Sensitivity



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Fig. 5 Response Time vs. Load Resistance



Test Circuit for Response Time

