

SLD-70BG2

Eye Response Silicon Photodiode

The SLD-70BG2 planar photodiode incorporates a BG filter that rejects infrared wavelengths and approximates the human eye's response. It can operate in either photoconductive or photovoltaic modes. High sensitivity and low dark current allow the use of this device in low irradiance applications. The photodiode active area is 9.8mm² and is mounted on a ceramic base with a clear epoxy dome package.

This device is available with four different dark currents.

Applications

Photometry

Medical Instrumentation

Analytical Chemistry

Features

Low Capacitance

Fast Switching Time

Linear Response VS Irradiance

IR Blocking Filter

Absolute Maximum Ratings

| Parameter | Symbol | Min | Max | Unit |
|-----------------------|-----------------------------------|-----|-----|------|
| Reverse Voltage | V_R | - | 50 | V |
| Wavelength Range | - | 400 | 700 | nm |
| Operating Temperature | T_{OP} | -20 | +85 | °C |
| Storage Temperature | T_{STG} | -20 | +85 | °C |
| Package | 2-pin ceramic with epoxy glob top | | | |

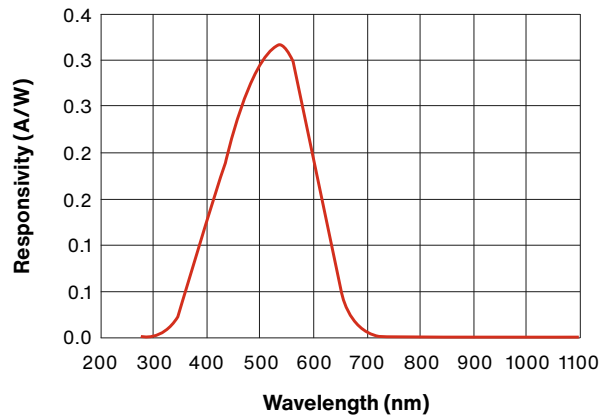
Typical Electro-Optical Specifications at $T_A=23\text{ °C}$

| Parameter | Test Conditions | Symbol | Min | Typ | Max | Unit |
|------------------------------------|-------------------------|-----------------|-----|------|-----|---------|
| Short Circuit Current ¹ | $V_R=0V, E_e=25mW/cm^2$ | I_{SC} | 40 | 55 | - | μA |
| Open Circuit Voltage | $E_e=25mw/cm^2$ | V_{OC} | - | 0.40 | - | V |
| Junction Capacitance | $V_R=5V, E_e=0, f=1MHz$ | C_J | - | 180 | - | pF |
| Rise Time ² | $V_R=5V, RL=1K\Omega$ | T_R | - | 4 | - | μs |
| Fall Time ² | $V_R=5V, RL=1K\Omega$ | T_F | - | 6 | - | μs |
| Temperature Coefficient | - | α | - | +0.2 | - | %/°C |
| Reverse Breakdown Voltage | $I_R=100\mu A$ | V_{BD} | 50 | - | - | V |
| Maximum Sensitivity Wavelength | - | λ_{MAX} | - | 550 | - | nm |
| Sensitivity Spectral Range | - | λ | 400 | - | 700 | nm |
| Acceptance Half Angle | (off center-line) | $\lambda_{1/2}$ | - | 60 | - | °C |
| DARK CURRENT | | | | | | |
| SLD-70BG2A | $V_R=100mV, E_e=0$ | I_D | - | 100 | - | nA |
| SLD-70BG2B | $V_R=5V, E_e=0$ | I_D | - | 100 | - | nA |
| SLD-70BG2C | $V_R=5V, E_e=0$ | I_D | - | 20 | - | nA |
| SLD-70BG2D | $V_R=5V, E_e=0$ | I_D | - | 5 | - | nA |
| SLD-70BG2E | $V_R=5V, E_e=0$ | I_D | - | 1 | - | nA |

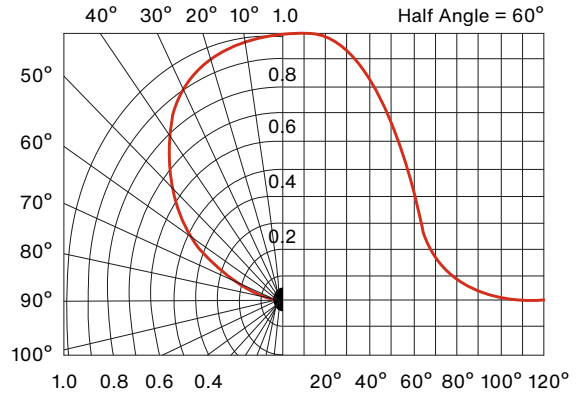
¹ E_e =source @ 2854K

² E_e = source @ $\lambda=580nm$

Spectral Response

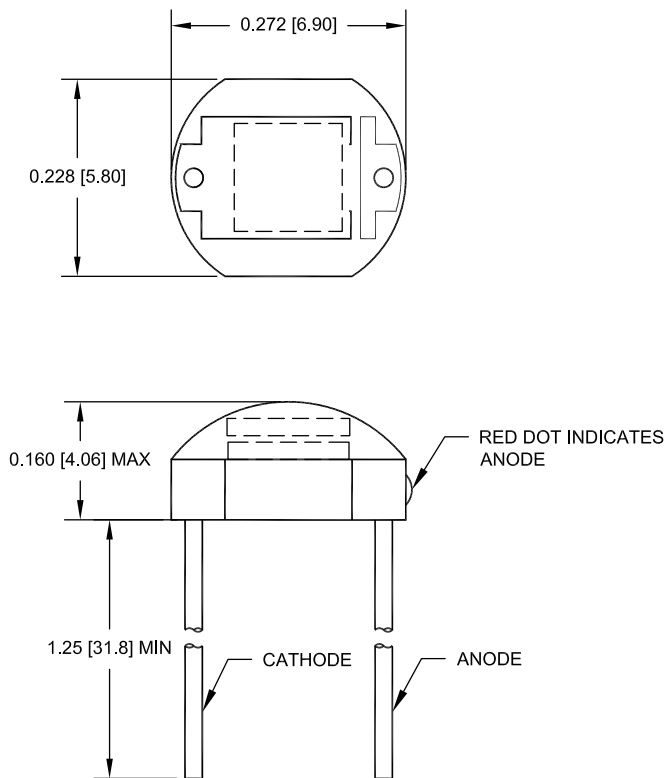


Directional Sensitive Characteristics



Mechanical Specifications

Units are in inches [mm]



Care and handling instructions

Your optoelectronic components are packaged and shipped in opaque, padded containers to avoid ambient light exposure and damage due to shock from dropping or jarring.

Care must be taken to avoid exposure to high ambient light levels, particularly from tungsten sources or sunlight.

- These components can be rendered inoperable if dropped or sharply jarred. The wire bonds are delicate and can become separated from the bonding pads when the component is dropped or otherwise receives a sharp physical blow.
- Most windows on photodiodes are either silicon or quartz. They should be cleaned with isopropyl alcohol and a soft (optical grade) pad.
- Photodiode exposure to extreme high or low storage temperatures can affect the subsequent performance. Maintain a non-condensing environment for optimum performance and lifetime.
- All devices are considered ESD sensitive. The photodiodes are shipped in ESD protective packaging. When unpacking and using these products, anti-ESD precautions should be observed.
- Photodiode packages and/or operation may be impaired if exposed to CHLOROETHENE, THINNER, ACETONE, TRICHLOROETHYLENE or any harsh chemicals.
- Optoelectronic components in plastic packages should be given special care. Clear plastic packages are more sensitive to environmental stress than those of black plastic. Storing devices in high humidity can present problems when soldering. Since the rapid heating during soldering stresses the wire bonds and can cause wire to bonding pad separation, it is recommended that devices in plastic packages to be baked for 24 hours at 85°C.
- The leads on the photodiode SHOULD NOT BE FORMED. If your application requires lead spacing modification, please contact Advanced Photonix Applications group at Techsupport@advancedphotonix.com before forming a product's leads. Product warranties could be voided.
- Most devices are provided with wire or pin leads for installation in circuit boards or sockets. Observe the soldering temperatures and conditions specified below:
 - Soldering Iron: Soldering 30 W or less
 - Temperature at tip of iron 300°C or lower.
 - Dip Soldering: Bath Temperature: 260±5°C.
 - Immersion Time: within 5 Sec.
 - Soldering Time: within 3 Sec.
 - Vapor Phase Soldering, Reflow Soldering: DO NOT USE

Legal Disclaimer

Information in this data sheet is believed to be correct and reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject to change without notice.



Most of our standard catalog products are RoHS Compliant. Please contact us for details.

