SLSD-71N100

11.3mm² Solderable Chip Silicon Photodiode with Wire

The SLSD-71N100 is a 4.9x2.3mm active area solderable Silicon photodiode with wire. The device offers linear short circuit current over a wide range of optical power with high reliability. It is suited for power conversion applications due to their low internal impedance, relatively high shunt impedance, and stability. It is a reliable detector for instrumentation and light beam sensing applications.

Applications

Light Sensing

Power Generation

Features

With 152mm Long Leads

Visible to IR

Low capacitance

11.3mm² Active Area

Advanced Photonix
A Division of OSI Optoelectronics

Absolute Maximum Ratings at T_A=23 ºC

Parameter	Symbol	Min	Max	Unit
Reverse Voltage	V_R	-	20	V
Operating Temperature	T_{OP}	-40	+105	°C
Storage Temperature	T_{STG}	-40	+105	°C
Package			Wire on Die	

Typical Electro-Optical Specifications at T_A=23 ºC

| Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Active Area	-	A.A.	-	11.3	-	mm^2
Active Area Dimensions	-	A.A.$_D$	-	4.9x2.3	-	mm
Spectral Range	Spot Scan	$\Delta\lambda$	400	-	1100	nm
Peak Wavelength	λ=Peak	λ_{Peak}	-	950	-	nm
Acceptance Half Angle	(off center line)	$\theta_{1/2}$	-	60	-	deg
Short Circuit Current	V_R=0V, Ee=25mW/cm^2 **	I_{SC}	0.3	0.4	-	mA
Open Circuit Voltage	Ee=25mW/cm^{2**}	V_{OC}	-	0.40	-	V
Breakdown Voltage	I_R = 100µA	T_F	20	-	-	V
Responsivity	λ=950nm, Flood illumination*	R_λ	-	0.57	-	A/W
Capacitance	V_R =0V, Ee=0, f=1MHz	C_J	-	0.4	-	nF
Dark Current	V_R =5V, Ee=0, T=25°C	I_{RD}	-	-	1.7	µA

*Minimum of 50% of active area illuminated
**Light source@ 2854K

Typical Spectral Response
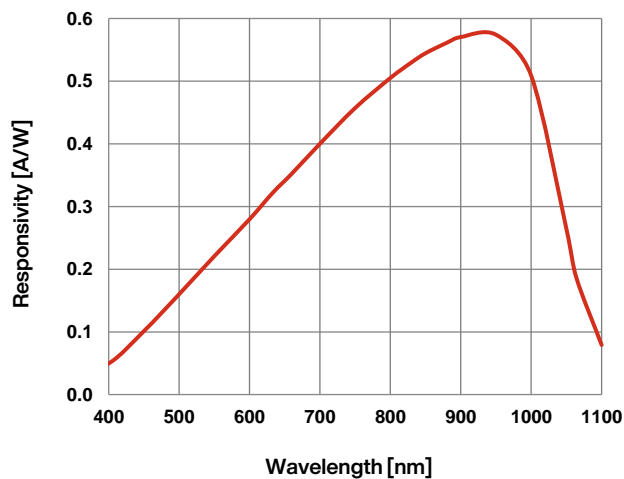
Directional Sensitive Characteristics
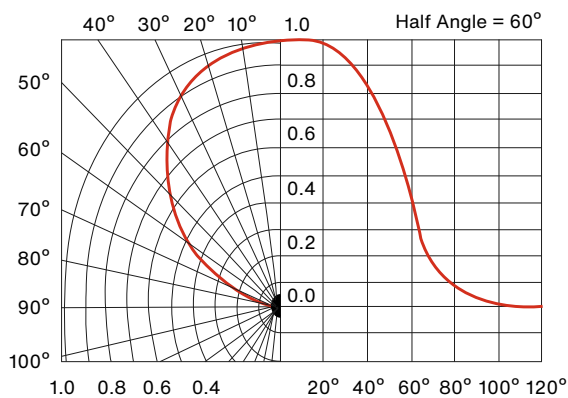
Mechanical Specifications

Units are in inches [mm]

ANODE RED WIRE

CATHODE BLACK WIRE
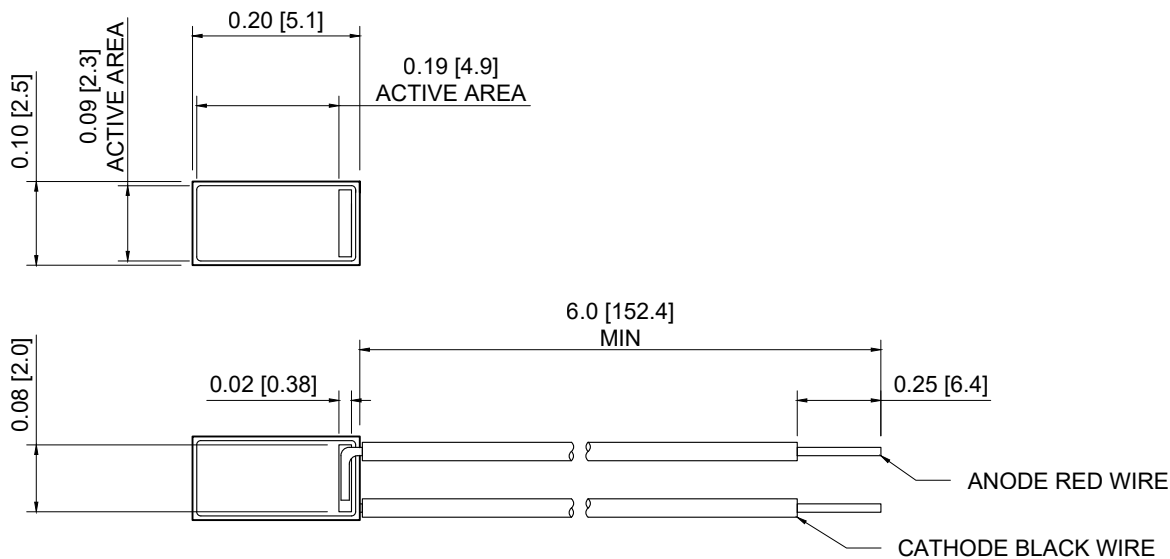
General Care and Handling Instructions

Photodiodes:

Handling and Storage
- Handle Photodiodes gently to prevent damage.
- Avoid exposing Photodiodes to temperatures exceeding the storage temperature rating of the device.
- Maintain a non-condensing environment for optimum performance and lifetime.

Cleaning
- Gently clean the glass (borosilicate or quartz window) using a 50/50 mixture of Methanol and isopropyl alcohol and a soft, optical-grade pad.

Special Considerations for Plastic or Epoxy Encapsulated Photodiodes
- Protect from intense light sources such as direct sunlight.
- Avoid exposure to harsh chemicals like THINNERS, ACETONE, and TRICHLOROETHYLENE.
- Cleaning with a 50/50 mixture of Methanol and isopropyl alcohol (IPA) is recommended. Cleaning in an ultrasonic bath is generally not recommended.

CdS Photocells:

Handling and Storage
- Handle CdS Photocells gently to prevent damage.
- Avoid exposing CdS Photocells to temperatures exceeding the storage temperature rating of the device.
- Maintain a non-condensing environment for optimum performance and lifetime.

Cleaning
- Gently clean the glass or plastic covering using a 50/50
- mixture of Methanol and isopropyl alcohol and a soft, optical-grade pad.

Special Considerations
- DO NOT use Vapor Phase Soldering or Reflow Soldering for CdS components.

Optocouplers and LEDs:

Handling and Storage
- Handle Optocouplers and LEDs gently to prevent damage.
- Avoid exposing the devices to temperatures exceeding the storage temperature rating of the device.
- Maintain a non-condensing environment for optimum performance and lifetime.

Cleaning
- For plastic molded devices, cleaning with a 50/50 mixture of Methanol and isopropyl alcohol is recommended. Cleaning in an ultrasonic bath is generally not recommended.

Special Considerations
- Avoid exposing plastic molded devices or epoxy glob top devices to harsh chemicals like THINNERS, ACETONE, and TRICHLOROETHYLENE.

Electrostatic Discharge (ESD) Sensitivity:
- All devices are considered ESD-sensitive. They are shipped in ESD protective packaging. When unpacking and using these products, anti-ESD precautions should be observed.

Lead Trimming and Bending:
- Standard lead trimming after soldering is an acceptable practice; however, do not attempt to bend or modify the leads incorrectly, as it can damage the glass feed-through or the plastic encapsulant.

Soldering Instructions:
- Use a soldering iron with a tip temperature of 300°C max.
- Consult with your preferred solder manufacturer to determine a solder alloy and flux combination, as well as the reflow profile appropriate for your application.

General Precautions for all Devices

1. **Moisture Prevention:**
   Ensure devices are stored in a dry environment to prevent moisture ingress, which can cause damage during soldering. Refer to J-STD-20 for guidance on proper baking procedures to prevent moisture related damage.

2. **Lead Splaying:**
   If required, carefully splay the leads of the devices according to the specific application needs. Be cautious when splaying leads, as improper techniques may damage the device. Consult technical support or device datasheets for guidance on lead splaying.

3. **Mechanical Stress:**
   Handle devices with care throughout the installation process to prevent damage.

4. **Circuit Protection and Layout:**
   Optimize the circuit design and layout to ensure proper functioning and prevent damage to the devices. Include appropriate protection measures like ESD protection diodes, current-limiting resistors, and voltage regulation.

5. **After-Sale Support:**
   For troubleshooting and device-specific inquiries, please consult with our technical support team. They can offer valuable guidance and suggestions on handling, operation, and application-related questions. To reach them, please contact the Advanced Photonix Applications group at Techsupport@advancedphotonix.com.

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.

RoHS COMPLIANT

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