

PDV-P5003

Light Dependent Resistor (LDR) CdS Photocell

The NSL-P5003 is a light dependent resistor with sensitivity in the visible light region. The CdS photoresistor cell is on a 2-pin ceramic and the device surface is plastic encapsulated for moisture resistance.

Advanced Photonix's CdS Photocells are photoresistor cells for visible light measurement designed to sense light from 400 to 700 nm. Their resistance decreases as the light level increases with efficiency characteristics similar to the human eye. These Light Dependent Resistors (LDR) are available in a wide range of resistance values. They are available in a two leaded plastic-coated ceramic header or hermetically sealed TO metal cans.

Applications

- Industrial
- Audio Compressors
- Night Lights
- Photography Light Meters
- Solar Street Lights
- Flame Detection

Features

- Passive Resistance output
- Ceramic Package
- Available in Hermatically Sealed package
- Available in a wide range of resistance values

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Voltage (peak AC or DC)	V_R	-	350	V
Power Dissipation at 25°C	P_D	-	400	mW
Operating Temperature	T_{OP}	-30	+75	V
Storage Temperature	T_{STG}	-30	+75	V

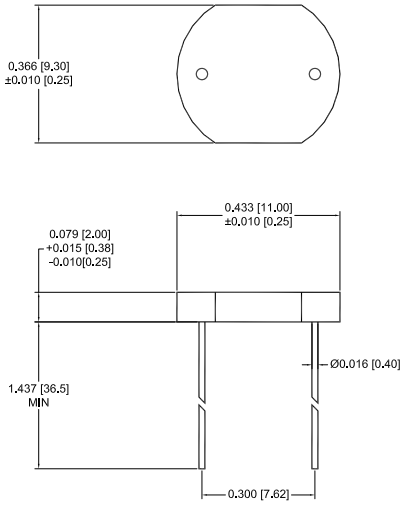
Typical Electro-Optical Specifications at T_A=23 °C

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Dark Resistance	After 10sec. @10Lux @2856°K	R_D	0.5	-	-	MΩ
Illuminating Resistance	10Lux@ 2856°K	R_{IL}	12	-	30	KΩ
Sensitivity	$\frac{\text{Log (R100) - Log (R10)*}}{\text{Log (E100) - Log (E10)**}}$	S	-	0.75	-	Ω/Lux
Spectral Range	Flooded	Δλ	400	520	700	nm
Rise Time	10Lux @ 2856°K	t_R	-	55	-	ms
Fall Time	After 10Lux @2856°K	t_F	-	20	-	ms

*R100, R10: cell resistances at 100Lux and 10Lux at 2856°K respectively.
** E100, E10: luminance at 100Lux and 10Lux 2856°K respectively.

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.



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Advanced Photonix:

PDV-P9203 NSL-32SR3 NSL-5150 NSL-5910 PDB-V615-2 PDV-P5002 PDV-P8006 NORPS-12 NSL-5540 SD200-12-22-041 076-14-21-011 PDV-P9008 019-141-411-G APX-SC0010 NSL-32SR2 NSL-4960 0090-3111-185 019-111-411 118-23-21-021 NSL-19M51 PDV-P9004 PDV-P9200 0050-3111-111 100-12-22-021 PDB-C154SM PDB-C613-2 PDV-P9002 SD019-141-411-G 100-41-21-231 PDV-P8101