

PDV-P8103

Light Dependent Resistor (LDR) CdS Photocell

The PDV-P8103 is a light dependent resistor with sensitivity in the visible light region. The CdS photoresistor photocell is mounted on a 2-pin ceramic and the photocell 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 can.

Applications

- Camera Exposure
- Shutter Controls
- Night Light Controls
- Audio Compressors
- Solar Street Lights
- Flame Detection

Features

- Visible Light Response
- Sintered Construction
- Two-leaded ceramic package
- Available in a Hermetically sealed package
- Available in a wide range of resistance values

Absolute Maximum Ratings at T_A=23 °C

Parameter	Symbol	Min	Max	Unit
Voltage	V_R	-	150	V
Operating Temperature	T_{OP}	-30	+75	°C
Storage Temperature	T_{STG}	-30	+75	°C
Package		Two lead ceramic		

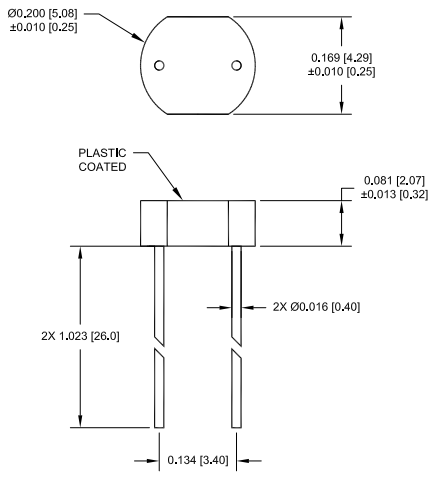
Typical Electro-Optical Specifications at T_A=23 °C

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Dark Resistance	After 10 sec. @10Lux @2856°K	R_D	0.5	-	-	MΩ
Illuminated Resistance	10 Lux @ 2856°K	R_{IL}	16	-	33	KΩ
Sensitivity	$\frac{\text{Log (R100) - Log (R10)**}}{\text{Log (E100) - Log (E10) ***}}$	S	-	0.75	-	Ω/Lux
Spectral Peak	-	λ_P	-	520	-	nm
Rise Time	10Lux @ 2856°K	T_R	-	60	-	ms
Fall Time	After 10Lux @ 2856°K	T_F	-	25	-	ms

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

