

# PDB-C171SM

#### SMD Si Photodiode

The PDB-C171SM is a 7.7mm<sup>2</sup> BLUE enhanced PIN silicon photodiode assembled in a compact water clear surface-mount package. The device ideal for high-speed response applications with moisture sensitivity classification level of 4.

## **Applications**

Photointerrupters

Oximeter Sensors

Barcode

Glucometers

Compact Surface Mount

High Speed

Photocunductive

Available in Tape and Reel

**Features** 





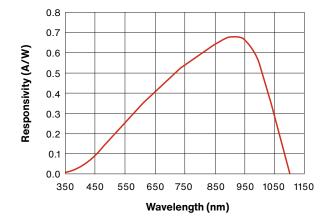
## **Absolute Maximum Ratings**

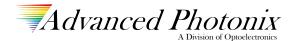
Parameter	Symbol	Min	Max	Unit
Reverse Voltage	$V_{_{\mathrm{R}}}$	-	60	V
Operating Temperature	T <sub>OP</sub>	-40	+80	°C
Storage Temperature	T <sub>STG</sub>	-40	+100	°C
Package			-	

## Typical Electro-Optical Specifications at T<sub>A</sub>=23 °C

Parameter	Test Conditions	Symbol	Min	Тур	Max	Unit
Breakdown Voltage	I <sub>bias</sub> =10μΑ	$V_{_{\mathrm{BD}}}$	60	-	-	V
Responsivity	λ=900nm	R <sub>950</sub>	0.60	0.68	-	A/W
Responsivity	λ=1050nm	R <sub>1050</sub>	-	0.3	-	A/W
Wavelength Range	-	λ	400	-	1050	nm
Dark Current	V <sub>bias</sub> =10V	I <sub>D</sub>	-	2	30	nA
Capacitance	V <sub>bias</sub> =3V; f=1MHz	С	-	25	-	pF
Rise Time	RL= 1K $\Omega$ , V <sub>R</sub> =10V, $\lambda$ =820nm	$T_{_{R}}$	-	100	-	ns
Noise Equivalent Power	950nm V <sub>R</sub> =10V	NEP	-	4x10 <sup>-14</sup>	-	W/ √ Hz

### **Spectral Response**

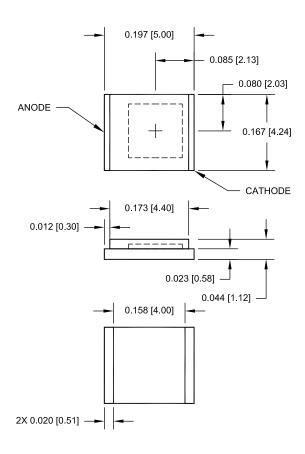




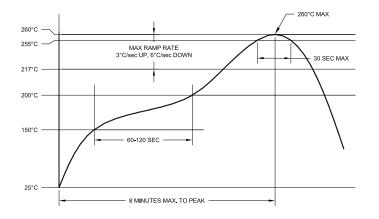


## **Mechanical Specifications**

Units are in mm

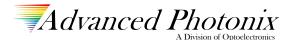


#### **Reflow Profile**



## **Soldering**

Recommendation						
Wave	Not Advised	-				
IR Oven Reflow	Allowed	See Reflow Profile				
Forced Convection Reflow	Recommended	See Reflow Profile				
Convection Reflow	Recommended	See Reflow Profile				
Vapor Phase Reflow	Recommended	See Reflow Profile				
Manual	Allowed	260°C for 3 seconds max				
Moisture Sensitivity Level	4	J-STD-033				





#### **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.
- **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.

- 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

