

## PR5001 – Dual Photo Diode

The PR5001 is a dual-element Si photo diode molded into a very small plastic leadless optical package. The photo diodes offer a very good symmetry, low dark current and high sensitivity.

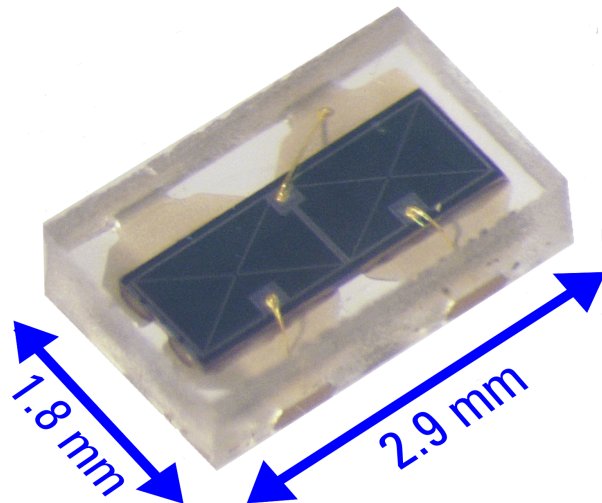
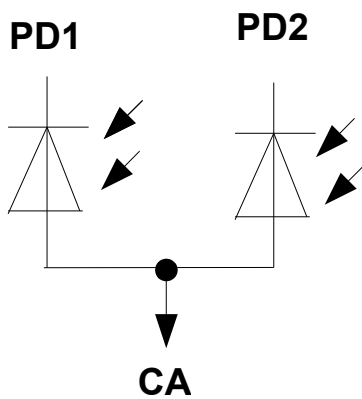
### Features

- Low dark current
- Low capacity
- High sensitivity

### Typical Application

- Laser beam alignment
- Opto encoders
- Position detection

### Circuit



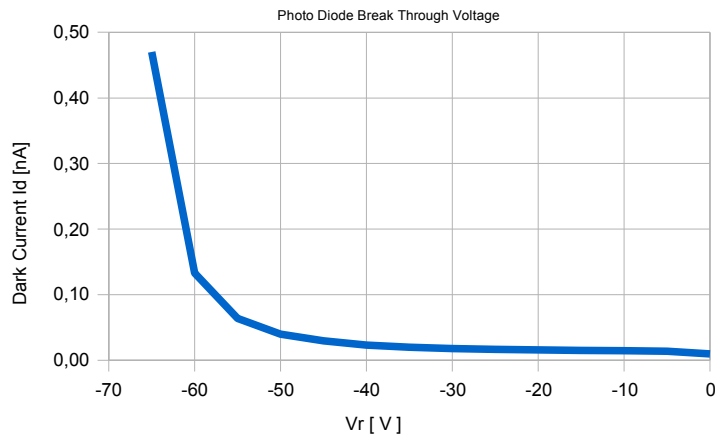
### Absolute Maximum Ratings

Parameter	Min	Typ	Max	Units
Operating Temperature Range	-20		85	°C
Storage Temperature Range	-55		150	°C

### Electrical Characteristics

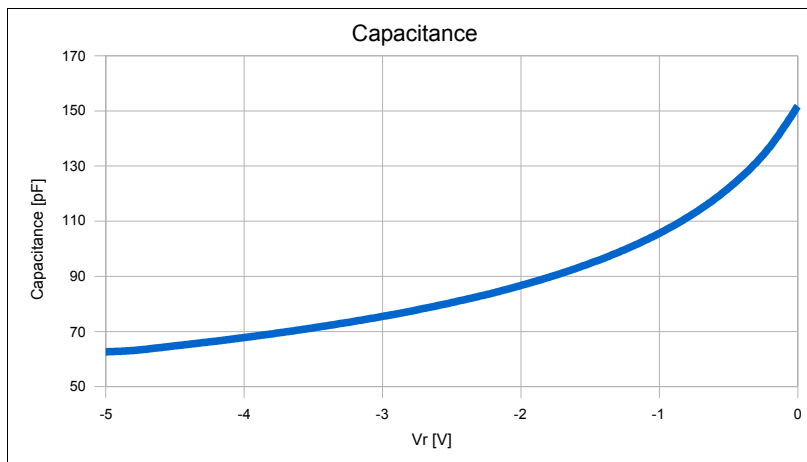
Parameter	Conditions	Min	Typ	Max	Units
Spectral response range $\lambda$		500		1000	nm
Dark current $I_D$	$T = 25^\circ\text{C}$		10		pA
Temperature coefficient of $I_D$	$V_r = 10\text{V}$		1.10		Times /°C
Terminal capacitance $C_t$	$V_r = 10\text{V}, f = 1\text{ MHz}$		60		pF

## Dark current vs. reverse voltage

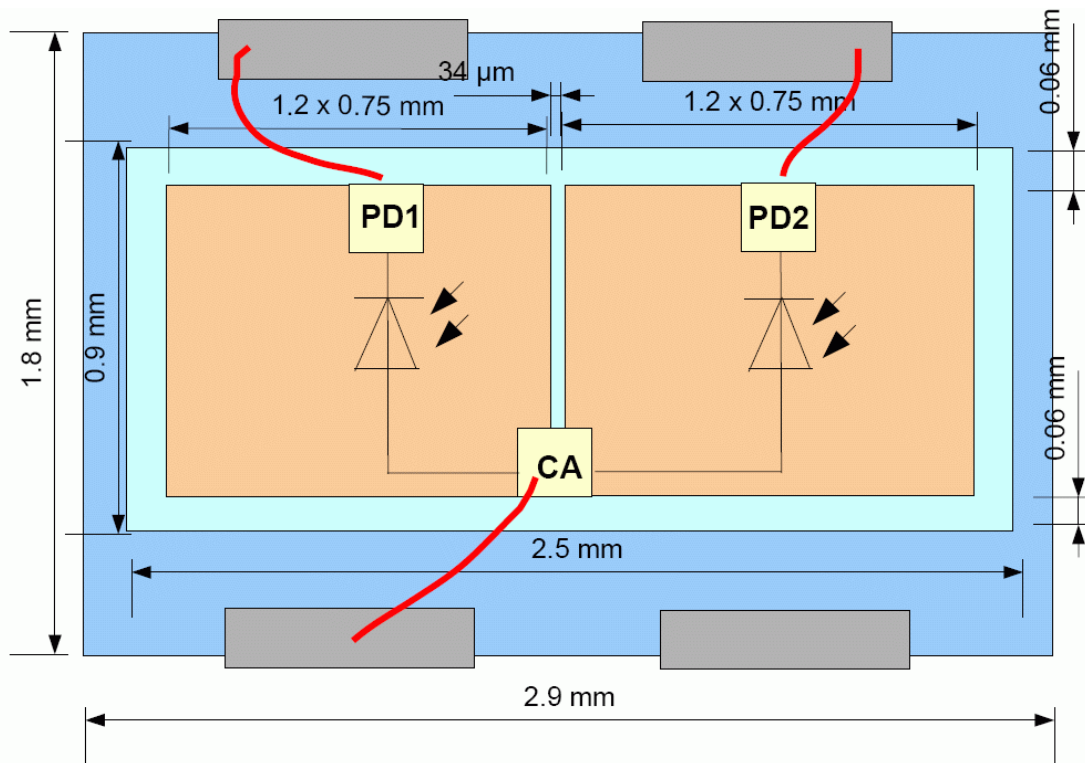


## Capacitance

f = 1 MHz





**Dimensional Outlines and Layout**



 = pad area (178x192 μm)

 = active area (0.75x1.2 mm)

 = die (0.9x2.5mm)

 = clear package (leadless)

PD1= Photodiode 1  
 PD2= Photodiode 2  
 CA= Common Anode  
 red lines = bond wires

**Pin Description**

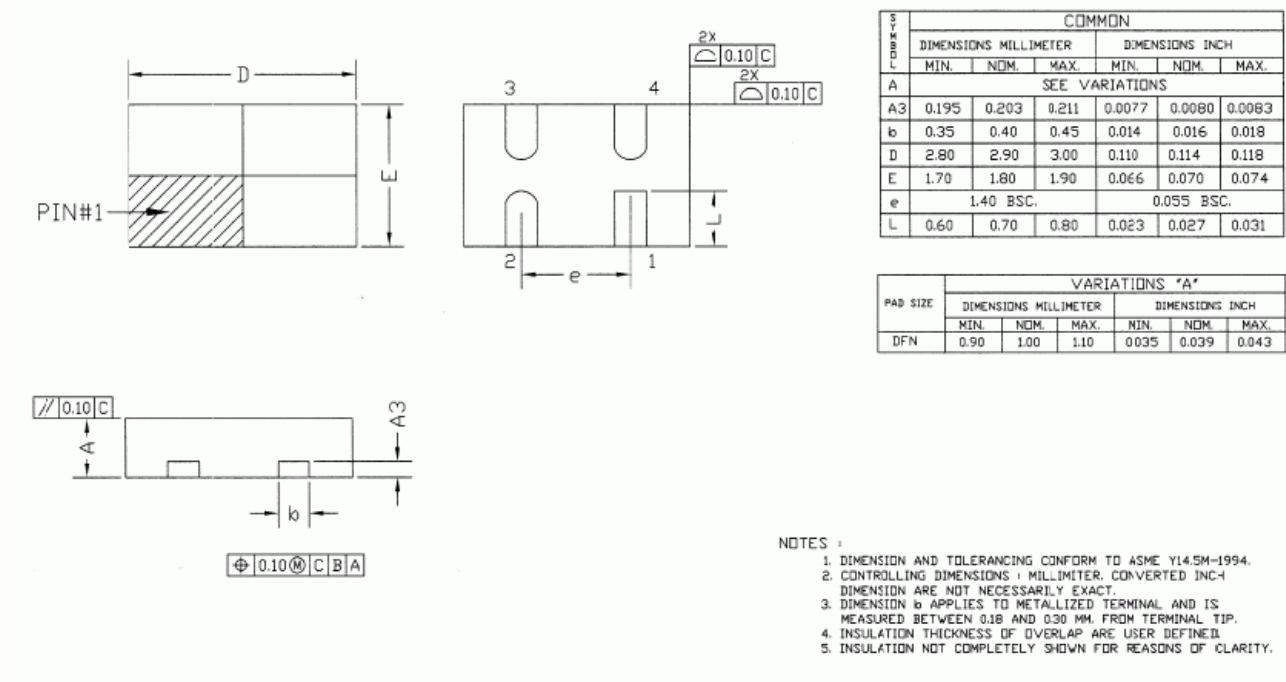
Pin No.	Pin Name	PIN Function Description
1	CA	Common Anode
2		Not connected
3	PD2	Cathode photo diode 2
4	PD1	Cathode photo diode 1

# PR5001 – Dual Photo Diode

## Preliminary



### Package



- NOTES :
1. DIMENSION AND TOLERANCING CONFORM TO ASME Y14.5M-1994.
  2. CONTROLLING DIMENSIONS IN MILLIMETER. CONVERTED INCH DIMENSIONS ARE NOT NECESSARILY EXACT.
  3. DIMENSION b APPLIES TO METALLIZED TERMINAL AND IS MEASURED BETWEEN 0.18 AND 0.30 MM FROM TERMINAL TIP.
  4. INSULATION THICKNESS OF OVERLAP ARE USER DEFINED.
  5. INSULATION NOT COMPLETELY SHOWN FOR REASONS OF CLARITY.

#### Disclaimer

Information provided by PREMA is believed to be accurate and correct. However, no responsibility is assumed by PREMA for its use, nor for any infringements of patents or other rights of third parties which may result from its use. PREMA reserves the right at any time without notice to change circuitry and specifications.

#### Life Support Policy

PREMA Semiconductors products are not authorized for use as critical components in life support devices or systems without the express written approval of PREMA Semiconductor. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

### PREMA Semiconductor GmbH

Robert-Bosch-Str. 6

55129 Mainz Germany

Phone: +49-6131-5062-0

Fax: +49-6131-5062-220

Email: [prema@prema.com](mailto:prema@prema.com) Web site: [www.prema.com](http://www.prema.com)