

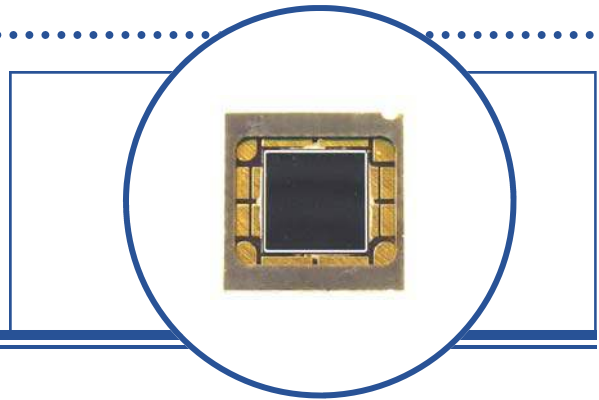
# Surface Mount PIN Photodiode

## OPR5910, OPR5913, OPR5915



### Features:

- Surface mountable
- High temperature operation
- Circular active area (OPR5910)
- Large area photodiode (OPR5913)
- 880 nm peak responsivity offers maximum coupling with OPTEK's GaAIAs LEDs (OPR5910, OPR5915)



### Description:

Each **OPR5910**, **OPR5913** and **OPR5915** device is a silicon PIN photodiode enclosed in a compact polyamide chip carrier and is designed for open air communications and ambient light detection circuits.

The custom opaque package shields the photodiodes from stray light and can withstand multiple exposures to the most demanding soldering conditions, while the wraparound gold-plated solder pads offer exceptional storage and wetting characteristics.

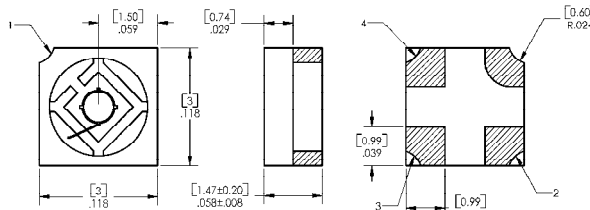
See Application Bulletin 237 for Handling Instructions.

### Applications:

- Encoder applications
- Control applications

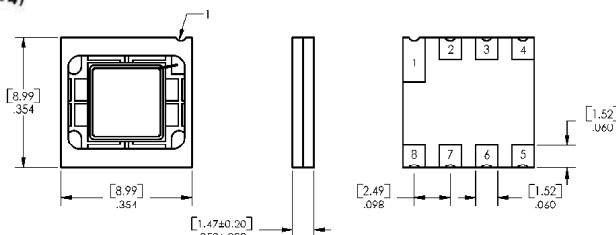
Ordering Information						
Part Number	Receiver Type	# of Elements	Responsivity (mA/mW) Min.	Reverse Voltage Min.	Active Area (mm <sup>2</sup> )	Packaging
OPR5910	Photodiode	1	0.45	35	0.75	Chip Tray
OPR5910T			0.45	35	0.75	Tape & Reel
OPR5913			0.40	10	26.00	Chip Tray
OPR5915			0.45	35	7.80	Tube

#### OPR5910



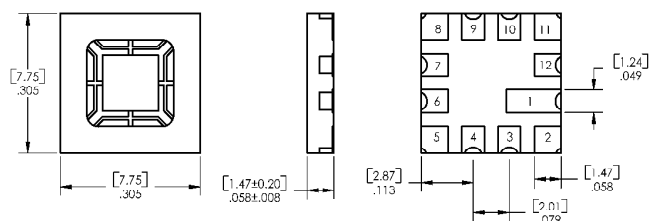
Pin #	Description
1	Cathode
2	Anode
3	NC
4	NC

#### OPR5913



Pin #	Description	Pin #	Description
1	Anode	5	NC
2	Cathode	6	Cathode
3	Cathode	7	Cathode
4	NC	8	NC

#### OPR5915



Pin #	Description	Pin #	Description
1	Anode	7	NC
2	Cathode	8	Cathode
3	NC	9	NC
4	NC	10	NC
5	Cathode	11	Cathode
6	NC	12	NC



**Warning:** Front Window is pressure sensitive. Do not apply pressure or high vacuum to window.



TOLERANCE IS ± .005 [0.13] DIMENSIONS ARE IN: [MILLIMETERS] INCHES

OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

# Surface Mount PIN Photodiode

## OPR5910, OPR5913, OPR5915



### Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

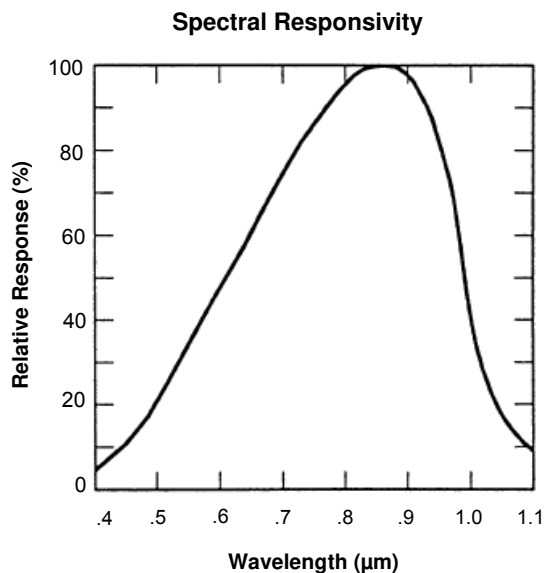
Storage and Operating Temperature	-55° C to +125° C
Reverse Breakdown Voltage OPR5910, OPR5915 OPR5913	35 V / minute 10 V / minute
Solder reflow time within 5°C of peak temperature is 20 to 40 seconds <sup>(1)</sup>	250° C

### Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
R	Responsivity OPR5910, OPR5915 OPR5913	0.45 0.40	- -	- -	A/W	$E_e = 10\ \mu\text{W}$ , $\lambda = 890\ \text{nm}$ , $V = 0\ \text{V}$
$V_{BR}$	Reverse Breakdown Voltage OPR5910, OPR5915 OPR5913	35 10	- -	- -	V	$I_R = 100\ \mu\text{A}$
$I_D$	Reverse Dark Current OPR5910, OPR5915 OPR5913	- -	- -	30 100	nA	$V_R = 10\ \text{V}$ $V_R = 0.5\ \text{V}$
$C_T$	Capacitance OPR5910 OPR5913 OPR5913 OPR5915	- - - -	25 1000 250 125	- - - -	pf	$V_R = 0\ \text{V}$ $V_R = 0\ \text{V}$ $V_R = 10\ \text{V}$ $V_R = 0\ \text{V}$
Lx W	Active Area OPR5910 OPR5913 OPR5915	- - -	0.75 26 7.8	- - -	mm <sup>2</sup>	(0.86 mm x 0.86 mm) (5.1 mm x 5.1 mm) (2.8 mm x 2.8 mm)

Notes:

- (1) Solder time less than 5 seconds at temperature extreme.



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