

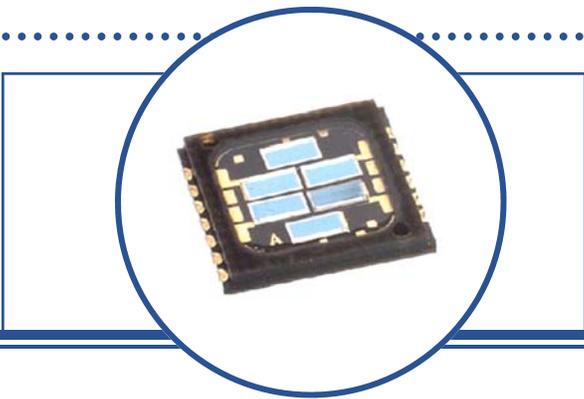
# Six-Element SMD Photodiode Array

## OPR2100, OPR2100T, OPR2100HS, OPR2100HST



### Features:

- Six-PIN photodiode array
- High-temperature chip carrier
- Closely matched responsivity between elements
- Choice of low or high speed
- Easily mountable in any configuration
- Suitable for harsh industrial operating conditions



### Description:

Each **OPR2100** device is a six-element photodiode that is designed to meet the needs of motor encoder applications. Designed specifically for *industrial* encoder applications, the **OPR2100** features a high temperature SMD chip carrier, a temperature range and a low leakage current that can withstand extreme operating conditions.

These devices have an opaque chip carrier that encloses six individual chips, which are mounted on isolated cathode contacts to allow external connection in any desired configuration. The opaque polyimide package shields the photodiodes from stray light and can withstand multiple exposures to the most demanding soldering conditions, while the gold-plated wraparound solder pads provide exceptional storage and wetting characteristics.

See Application Bulletin 237 for handling instructions.

### Applications:

- Motor encoder applications
- Industrial encoder applications

Ordering Information							
Part Number	Sensor	# of Elements	Responsivity (mA/mW) Min	Reverse Voltage Breakdown	Active Area mm <sup>2</sup> (each)	Bandwidth	Packaging
OPR2100	Photodiode Array	6	0.45	50	3.45	55kHz	Tube
OPR2100T	Photodiode Array	6	0.45	50	3.45	55kHz	Tape & Reel
OPR2100HS	Photodiode Array	6	0.45	50	3.45	200kHz	Tube
OPR2100HST	Photodiode Array	6	0.45	50	3.45	200kHz	Tape & Reel



**ESD**  
(Human Body Model)



**MOISTURE**  
(Level-4)



**Pb-Free**  
(RoHS)

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

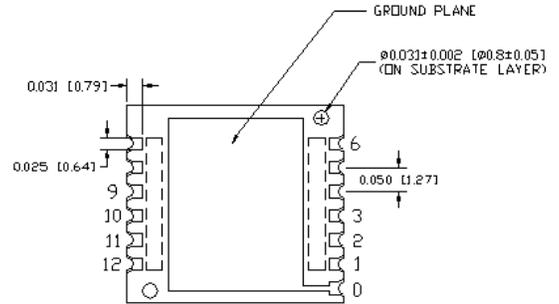
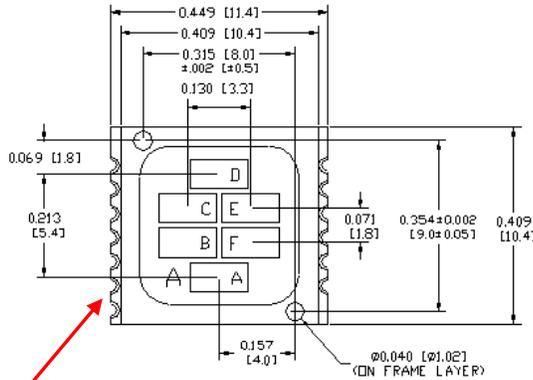
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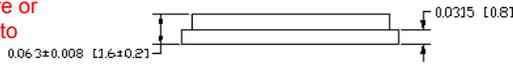


Pin #	Description
0	Ground Plane
1	Cathode A
2	Cathode B
3	Anode B
4	Anode C
5	Cathode C
6	Cathode D
7	Anode D
8	Cathode E
9	Anode E
10	Anode F
11	Cathode F
12	Anode A

### OPR2100



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



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

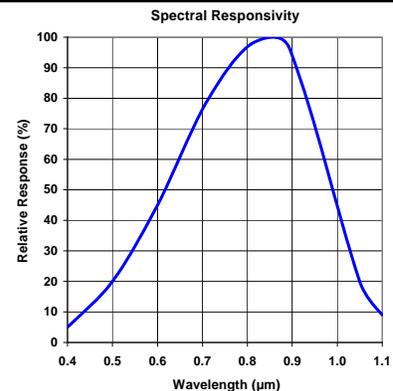
Storage and Operating Temperature	-55° C to +125° C
Reverse Breakdown Voltage	50 V / minute
Solder reflow time within 5° C of peak temperature is 20 to 40 seconds <sup>(1)</sup>	250° C

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
R	Responsivity	0.45	-	-	A/W	$E_e = 10 \mu\text{W}$ , $\lambda = 890 \text{ nm}$ , $V = 0 \text{ V}$
$V_{BR}$	Reverse Breakdown Voltage	50	-	-	V	$I_R = 10 \mu\text{A}$
$I_D$	Reverse Dark Current	-	-	10	nA	$V_R = 10 \text{ V}$ , $E_e = 0$
$B_W$	Bandwidth	-	-	200	kHz	$T_A \leq 125^\circ\text{C}$
$C_T$	Capacitance	-	10	-	pF	$V_R = 10 \text{ V}$
Lx W	Active Area (per diode)	-	3.45	-	mm <sup>2</sup>	2.73 mm x 1.34 mm

#### Notes:

- Solder time less than 5 seconds at temperature extreme.
- Package thermal resistance is 142° C / W



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