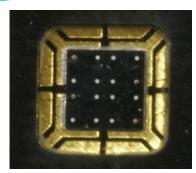
Surface Mount Quad Photodiode

Electronics

OPR5911

Features:

- Surface mountable
- Closely matched responsivity
- High temperature operation
- Common cathode connections



Description:

Each OPR5911 device is a four-element photodiode that is enclosed in a compact polyimide chip carrier and designed for a variety of encoder and control applications. The single chip construction ensures excellent matching and very tight dimensional tolerances between active areas. 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 exceptions storage and wetting characteristics.

All cathodes in the OPR5911 are bonded together, which enables the elements to act in unison with limited external circuitry.

See Application Bulletin 237 for handling considerations.

Applications:

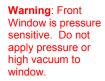
- Encoder applications
- Control applications

Ordering Information							
Part Number	Receiver Type # of Elements		Responsivity (mA/mW) Min.	Reverse Voltage Min.	Active Area (mm²)	Packaging	
OPR5911	Photodiode Array	4	0.45	14	1.61 (each)	Chip Tray	

OPR5911

0.063

8X 0.1125 +

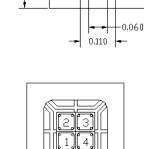




ESD (Human Body Model)

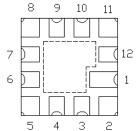






0.305

0.305



0.060 0.110

Pin#	Function	Pin #	Function
1	Anode 1	7	Anode 3
2	Common Cathode	8	Common Cathode
3	N. C. / N.C.	9	N. C. / N.C.
4	N. C. / N.C.	10	N. C. / N.C.
5	Common Cathode	11	Common Cathode
6	Anode 2	12	Anode 4

8X 0.049

8X 0.059

General Note

-SYMBOLIZATION AREA

UNLESS OTHERWISE

SPECIFIED, ALL TOLERANCES ARE

±.005"

Surface Mount Quad Photodiode



Electrical Specifications

Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)

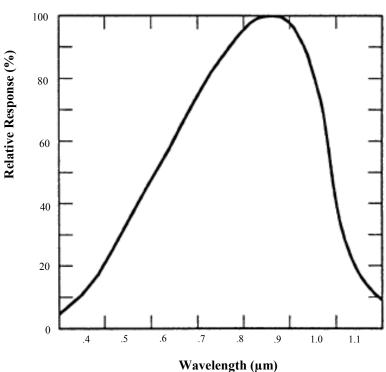
Storage and Operating Temperature	-55° C to +125° C
Reverse Breakdown Voltage	14 V / minute
Solder reflow time within 5°C of peak temperature is 20 to 40 seconds ⁽¹⁾	250° C

Electrical Characteristics (T_A = 25° C unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
R	Responsivity	0.45	ı	-	A/W	$E_e = 10 \mu W$, $\lambda = 850 \text{ nm}$, $V_R = 0$
V_{BR}	Reverse Breakdown Voltage	14	-	1	V	Ι _R = 100 μΑ
I _D	Reverse Dark Current	_	_	30	nA	V _R = 10 V
C _T	Capacitance	_	10	_	pF	V _R = 10 V
LXW	Active Area (per diode)	_	1.61	-	mm²	(1.27 mm x 1.27 mm)

Notes:

Spectral Responsivity



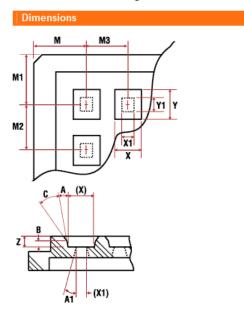
^{1.} Solder time less than 5 seconds at temperature extreme.

Surface Mount Quad Photodiode



Packaging

Bare Die/CSP Tray Detail



POCKET LOCATIONS

M = 0.592" ±0.005"

M1 = 0.592" ±0.005"

M2 = 0.401" ±0.005"

M3 = 0.401" ±0.005"

Array = 8x8 (64)

POCKET DETAILS

X = 0.361" ±0.005" pocket size
Y = 0.361" ±0.005" pocket size
Z = 0.100" ±0.005" pocket depth
A = 5° ±1/2° pocket draft angle
No Cross Slots

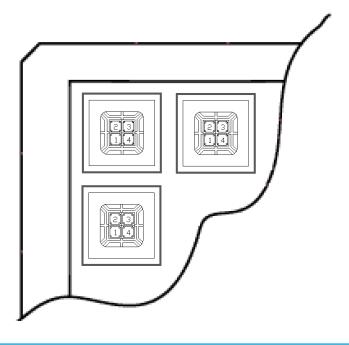
OVERALL TRAY SIZE

Size = 3.990" ±0.010" Height = 0.315" +0.005" -0.005" Flatness = 0.020"

H44-359-62C02



Orientation



Surface Mount Quad Photodiode



Issue	Change Description	Approval	Date
	Initial Release		08/1996
А	Put in new format		08/14/2006
A.1	Add Application Bulletin 237 note. Add pressure sensitivity warning. Add packaging to Ordering Information chart.	Harry Whitford	4/17/2009
A.2	Separate OPR5911 and OPR5925. Add new photo	Harry Whitford	4/28/2009
В	Change Φ_E to E_e ; R_λ to R and $V_{(BR)R}$ to V_{BR} in the Electrical Characteristics table. Change 1 to 1.27 for the L X W, TYP on the Electrical Characteristics table. Change 1 to 1.61 under Active Area on the Ordering Information table.	Harry Whitford	3/20/2012
С	Update to TTE format. Correct die array pitch from .075 to .060. Correct L X W from 1.00 mm x 1.00 mm (1.27 mm 2) to 1.27 mm x 1.27 mm (1.61 mm 2).	Harry Whitford	6/10/2012