

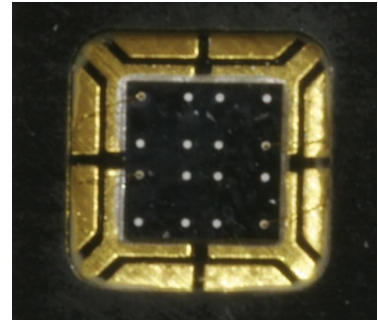
Surface Mount Quad Photodiode



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 exceptional storage and wetting characteristics.

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

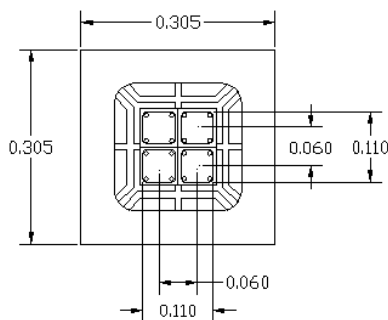
See Application Bulletin 237 for handling considerations.

Applications:

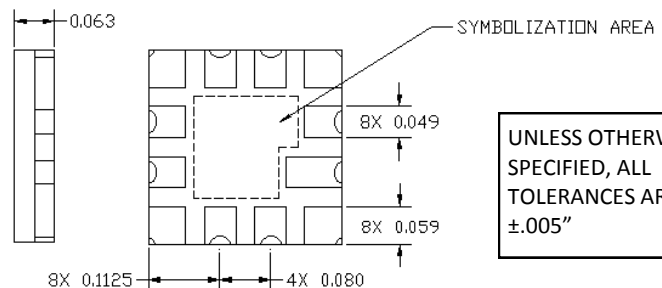
- Encoder applications
- Control applications

Ordering Information						
Part Number	Receiver Type	# of Elements	Responsivity (mA/mW) Min.	Reverse Voltage Min.	Active Area (mm ²)	Packaging
OPR5911	Photodiode Array	4	0.45	14	1.61 (each)	Chip Tray

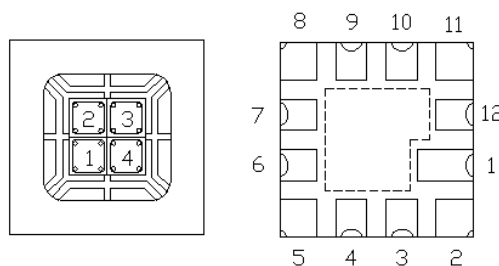
Warning: Front Window is pressure sensitive. Do not apply pressure or high vacuum to window.



OPR5911



UNLESS OTHERWISE SPECIFIED, ALL TOLERANCES ARE ±.005"



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

General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

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Electrical Specifications

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ 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

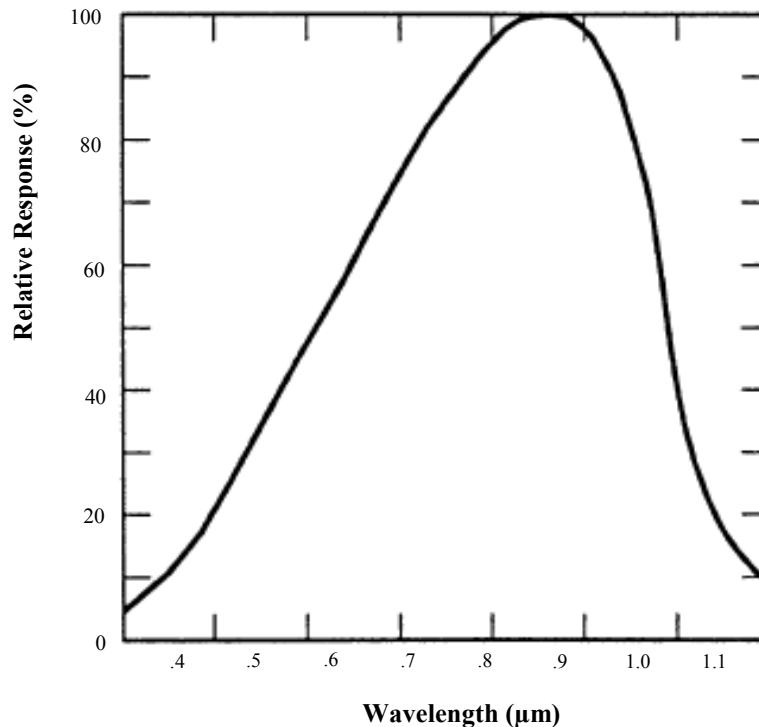
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
R	Responsivity	0.45	—	—	A/W	$E_e = 10\ \mu\text{W}$, $\lambda = 850\ \text{nm}$, $V_R = 0$
V_{BR}	Reverse Breakdown Voltage	14	—	—	V	$I_R = 100\ \mu\text{A}$
I_D	Reverse Dark Current	—	—	30	nA	$V_R = 10\ \text{V}$
C_T	Capacitance	—	10	—	pF	$V_R = 10\ \text{V}$
L X W	Active Area (per diode)	—	1.61	—	mm ²	(1.27 mm x 1.27 mm)

Notes:

1. Solder time less than 5 seconds at temperature extreme.

Spectral Responsivity



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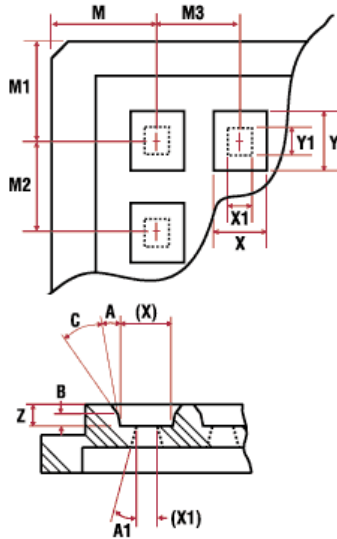


Packaging

Bare Die/CSP Tray Detail

H44-359-62C02

Dimensions



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" <i>pocket size</i>
Y	= 0.361" ±0.005" <i>pocket size</i>
Z	= 0.100" ±0.005" <i>pocket depth</i>
A	= 5° ±1/2° <i>pocket draft angle</i>

No Cross Slots

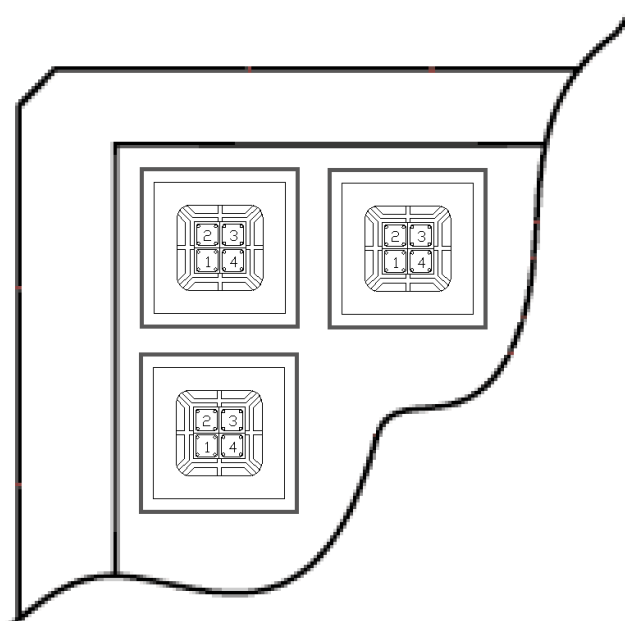
OVERALL TRAY SIZE

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

UNIT OF MEASURE

- English
- Metric

Orientation



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Issue	Change Description	Approval	Date
	Initial Release		08/1996
A	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
B	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
C	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

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