

GENERAL PURPOSE PHOTOSENSORS – CHIP FORM

Specifications subject to change without notice for product revisions and improvements.

General Purpose Photosensors – Chip Form

General purpose photosensors are supplied in five configurations for a wide variety of industrial and scientific applications. The devices are available in planar or mesa structures with the options for blue enhancement, high speed and low noise. All are available with or without leads. Additional geometry sizes are available upon request.

The designer should specify as many of the listed parameters as possible in order to be assured of meeting the requirements of your application:

- 1) Required voltage and current at the operational load
- 2) Operating temperature
- 3) Area and means for mounting
- 4) Lead orientation and color coding if desired
- 5) The intensity and spectral distribution of the light source

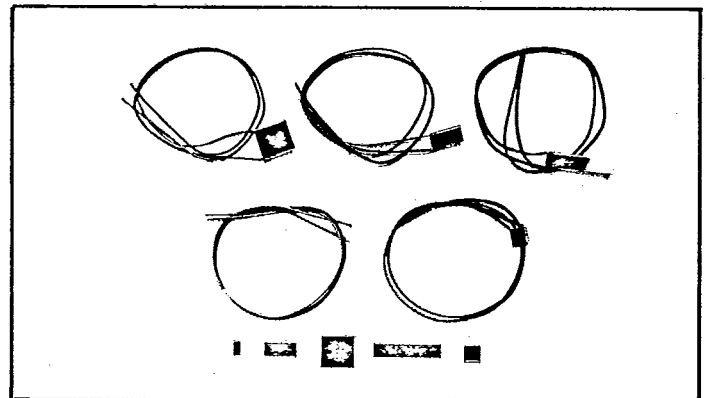
Handling Techniques

Unmounted cells are fragile. Cells are nominally .015 inches thick. The front and back electrodes are a special gold or silver-coated metalization suitable for soldering (as well as ultrasonic and thermo-compression wire bonding). The electrodes may be soldered using 60/40 tin-lead solder with an active flux capable of making a solder point quickly to minimize heating. It is recommended that all soldering be done by Advanced Detector Corporation since it is possible to degrade the device characteristics with excessive heat. Handling these devices with metal tweezers or hard tools may cause damage. The junctions are extremely shallow and are readily subject to mechanical damage if the active surface is scratched. It is suggested that plastic tools be used when handling these devices.

Nominal Overall Dimensions		
TYPE NUMBER	Thickness	
	.038 Centimeters	.015 Inches
	Centimeters	Inches
58 Planar	.5 × .224	.197 × .088
55 Planar	.5 × .478	.197 × .188
51 Planar	.5 × .986	.197 × .388
52 Planar	.5 × 2.000	.197 × .788
110 Planar	1.0 × 1.000	.394 × .394

Nominal Overall Dimensions		
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	.038 Centimeters	.015 Inches
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58 Mesa	.5 × .224	.197 × .088
55 Mesa	.5 × .478	.197 × .188
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110 Mesa	1.0 × 1.000	.394 × .394

Note: All chip devices described here are available with wire leads, #32 AWG. – 6" long. Add postscript "L" to the part no. max. I_{DR} will be slightly higher.



SILICON PLANAR DIFFUSED PHOTOSENSORS

Type No.	Effective Photosensor Surface cm^2	I_{DR} @ -1V, 25°C		Reverse Breakdown Voltage (V_{BR})		Junction Capacitance nf	Output @ 10mw/cm ² , 2800°K	
		Typ (nA)	Max (nA)	Typ (Volts)	Min (Volts)		I_{SC} (Min) mA	V_{oc} (Min) mV
58PV	.085	4	10	20	12	.8	.19	360
55PV	.193	10	25	12	8	1.8	.42	360
51PV	.409	20	50	8	6	3.9	.90	360
52PV	.839	35	90	5	4	7.9	1.84	360
110PV	.903	40	100	5	4	8.5	2.00	360

GENERAL PURPOSE PHOTODIODES – CHIP FORM**SILICON PLANAR DIFFUSED HIGH SPEED PHOTODIODES**

Type No.	Effective Photodiode Surface cm ²	I _{DR} @ -1V, 25°C		Reverse Breakdown Voltage (V _{BR})		Junction Capacitance nf	Output @ 10mw/cm ² , 2800°K	
		Typ (nA)	Max (nA)	Typ (Volts)	Min (Volts)		I _{SC} (mA)	V _{OC} (mV)
58PH	.085	4	10	25	15	.16	.254	375
55PH	.193	10	25	15	10	.36	.540	375
51PH	.409	20	50	12	8	.77	1.150	375
52PH	.839	35	90	9	6	1.58	2.350	375
110PH	.903	40	100	7	5	1.75	2.500	375

SILICON PLANAR DIFFUSED BLUE ENHANCED PHOTODIODES

Type No.	Effective Photodiode Surface cm ²	I _{DR} @ -1V, 25°C		Reverse Breakdown Voltage (V _{BR})		Junction Capacitance nf	Output @ 10mw/cm ² , 2800°K	
		Typ (nA)	Max (nA)	Typ (Volts)	Min (Volts)		I _{SC} (mA)	V _{OC} (mV)
58BH	.085	5	12	20	12	.8	.17	360
55BH	.193	12	30	12	8	1.8	.38	360
51BH	.409	24	60	8	6	3.9	.80	360
52BH	.839	40	100	5	4	7.9	1.60	360
110BH	.903	45	150	5	4	8.5	1.80	360

GENERAL PURPOSE RED ENHANCED MESA PHOTODIODES

Type No.	Effective Photodiode Surface cm ²	Reverse Breakdown Voltage Volts (V _{BR})		Junction Capacitance @ 0 Volts		Output @ 100mw/cm ² , 2800°K			
		Typ (Volts)	Min (Volts)	Typ (nf)	Max (nf)	I _{SC} (mA)		V _{OC} (mV)	
						Typ	Min	Typ	Min
58MR	.09	20	12	.63	.8	3	2.4	510	490
55MR	.21	12	8	1.40	1.8	6	5.0	530	500
51MR	.43	8	6	3.00	3.9	12	10.5	550	510
52MR	.87	5	4	6.20	7.9	25	22.0	550	510
110MR	.92	5	3	6.70	8.5	28	22.5	550	510

GENERAL PURPOSE BLUE ENHANCED MESA PHOTODIODES

Type No.	Effective Photodiode Surface cm ²	Reverse Breakdown Voltage Volts (V _{BR})		Junction Capacitance @ 0 Volts		Output @ 100mw/cm ² , 2800°K			
		Typ (Volts)	Min (Volts)	Typ (nf)	Max (nf)	I _{SC} (mA)		V _{OC} (mV)	
						Typ	Min	Typ	Min
58MB	.09	20	12	.63	.8	.30	.2	400	360
55MB	.21	10	8	1.40	1.8	.70	.4	400	360
51MB	.43	8	6	3.00	3.9	1.55	1.0	400	360
52MB	.87	5	4	6.20	7.9	2.20	1.6	500	360
110MB	.92	5	3	6.70	8.5	2.80	2.0	400	360

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