

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

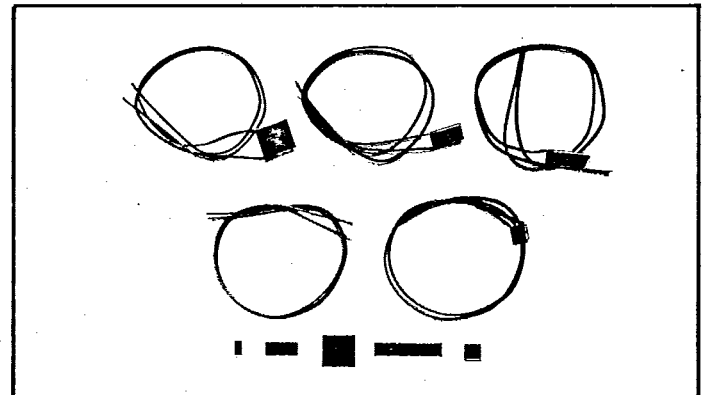
Handling Techniques

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		
TYPE NUMBER	Thickness	
	.038 Centimeters	.015 Inches
	Centimeters	Inches
58 Mesa	.5 × .224	.197 × .088
55 Mesa	.5 × .478	.197 × .188
51 Mesa	.5 × .986	.197 × .388
52 Mesa	.5 × 2.000	.197 × .788
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 PHOTODETECTORS – CHIP FORM

SILICON PLANAR DIFFUSED HIGH SPEED PHOTODETECTORS

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
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 PHOTODETECTORS

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
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 PHOTODETECTORS

Type No.	Effective Photosensor 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)	
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 PHOTODETECTORS

Type No.	Effective Photosensor 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)	
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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STANDARD PHOTSENSORS

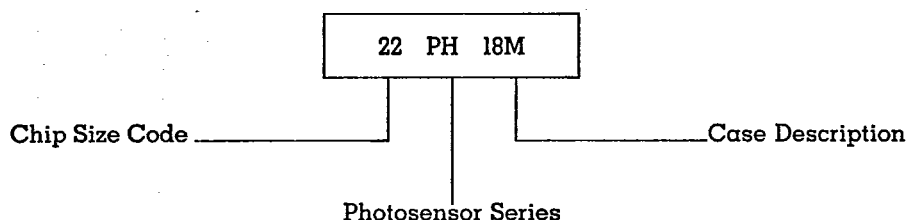
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**STANDARD PHOTSENSORS – HERMETICALLY SEALED
IN STANDARD "TO" CASES
EFFECTIVE AUGUST 1, 1985**

NOTE: Former Series: AS Replaced by AD
PD Replaced by PH
PB Replaced by BH
PBF not available as standard product

Standard Photosensor Part No. Designation

Example:

**Photosensor Chip Size**

CHIP CODE	SIZE CM	SIZE IN
11	.134 × .134	.053 × .053
22	.185 × .185	.073 × .073
33	.260 × .260	.103 × .103
44	.450 × .450	.177 × .177
68	.678 × .870	.267 × .343
110	1.0 × 1.0	.397 × .397

Standard Case Code

CODE	CASE TYPE
18M	TO-18
05M	TO-5
08M	TO-8
09M	TO-9

STANDARD PHOTSENSORS – CHIP FORM

NOTE: Former Series: P replaced by PH
PB replaced by PBH
C replaced by MR

Replacement series are directly equivalent but have improved speed of response.

Parts with "L" suffix have wire leads – 6" long – 32 Awg. with insulation.

Chip Size Example: **Standard Chip Form Part No. Designation**

L = Leads
HB = Photosensor Series
M = Mesa
P = Planar

55PHBL

CHIP CODE**CHIP SIZE
CM****CHIP SIZE
IN.**

58	0.5 × 0.22	0.197 × 0.088
55	0.5 × 0.5	0.197 × 0.188
51	0.5 × 1.0	0.197 × 0.388
52	0.5 × 2.0	0.197 × 0.788
110	1.0 × 1.0	0.394 × 0.394

PRICE LIST STANDARD PHOTODIODES - "TO" CASES AUGUST 1, 1985**SERIES PH (REPLACING PD) -
GENERAL PURPOSE HIGH SPEED PLANAR SILICON PHOTODIODES**

Part No.	Quantity:	1-10	11-50	51-100	101-500	501-1000	1001-5000
11PH18M		9.60	7.40	6.20	5.15	4.30	3.45
22PH18M		9.90	7.60	6.30	5.25	4.35	3.50
33PH05M		13.50	10.40	8.65	7.20	6.20	4.95
44PH05M		15.95	12.25	10.20	8.50	7.10	5.70
68PH08M		24.50	18.86	10.25	8.60	7.15	5.57
110PH9M		94.60	72.80	56.80	47.35	39.45	31.55

SERIES PS - HIGHER SPEED PLANAR PHOTODIODES

11PS18M	10.55	8.15	6.80	5.65	4.75	3.80
22PS18M	10.90	8.35	6.95	5.80	4.80	3.85
33PS05M	14.90	11.45	9.50	7.90	6.80	5.45
44PS05M	17.55	13.50	11.25	9.35	7.80	6.30
68PS08M	26.95	20.75	11.30	9.45	7.90	6.30
110PS9M	104.00	80.00	62.50	52.00	43.50	34.80

SERIES AS - VERY HIGH SPEED PHOTODIODES

AD101	29.50	23.00	16.80	13.50	8.90	6.80
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SERIES PV - LOW COST PHOTODIODES

11PV18M	8.65	6.65	5.60	4.65	3.90	3.10
22PV18M	8.90	6.85	5.40	4.70	3.95	3.15
33PV05M	12.15	9.35	7.80	6.55	5.60	4.50
44PV05M	14.35	11.00	9.20	7.65	6.40	5.10
68PV08M	22.05	17.00	9.25	7.75	6.45	5.15
110PV9M	85.15	65.50	51.10	42.60	35.50	28.40

SERIES BH - (REPLACING PB) BLUE ENHANCED HIGH SPEED PHOTODIODES

11BH18M	10.55	8.15	6.80	5.65	4.75	3.80
22BH18M	10.90	8.35	6.95	5.80	4.80	3.85
33BH05M	14.90	11.45	9.50	7.90	6.80	5.45
44BH05M	17.55	13.50	11.25	9.35	7.80	6.25
68BH08M	26.95	20.75	11.30	9.45	7.90	6.30
110BH9M	104.00	80.00	62.50	52.00	43.50	34.80

DUAL AND QUAD ELEMENT PHOTODIODES-TO-5 CASE

25PDU05M	28.00	22.00	13.00	10.00	8.00	6.00
45PQU05M	40.00	32.00	19.00	16.00	12.00	10.00

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PRICE LIST AUGUST 1, 1985**UV SILICON PHOTODIODES**

Part No.	Quantity:	1-10	11-50	51-100	101-500	501-1000	1001-5000
ADC-UVII		75.00	50.00	45.00	42.75	40.60	36.50
ADC-UVIIQ		94.50	63.00	56.70	53.85	51.20	46.00
ADC-UV09M		90.00	60.00	54.00	51.30	46.20	41.50
ADC-UV05M		42.00	28.00	25.20	23.90	22.70	20.50

ADC MULTI ELEMENT ARRAYS

ADC-1000	275.00	250.00	225.00	203.00	CF	CF
ADC-1050	320.00	288.00	260.00	234.00	CF	CF
ADC-2000	325.00	293.00	263.00	203.00	CF	CF
ADC-2050	350.00	315.00	284.00	256.00	CF	CF
ADC-3000	350.00	315.00	284.00	234.00	CF	CF
ADC-3050	395.00	355.00	320.00	288.00	CF	CF
ADC-4000	415.00	375.00	338.00	304.00	CF	CF
ADC-4050	CF	CF	CF	CF	CF	CF

ADC LONG LINE STRIP DETECTORS

ADC-5000	390.00	351.00	316.00	285.00	CF	CF
ADC-5050	585.00	527.00	474.00	426.00	CF	CF
ADC-6000	430.00	387.00	348.00	313.00	CF	CF
ADC-6050	625.00	563.00	506.00	456.00	CF	CF
ADC-7000	405.00	365.00	328.00	295.00	CF	CF
ADC-7050	600.00	540.00	486.00	437.00	CF	CF

NOTE: CF = CONSULT FACTORY FOR PRICING

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PRICE LIST STANDARD PHOTSENSORS - CHIP FORM AUGUST 1, 1985**SERIES PH - GENERAL PURPOSE PHOTSENSORS HIGH SPEED**

Part No.	Quantity:	1-10	11-50	51-100	101-500	501-1000	1001-5000
58PH		3.80	3.25	2.35	1.65	1.05	.40
58PHL		6.80	5.25	4.35	3.65	3.05	2.40
55PH		4.40	3.70	2.80	2.00	1.30	.65
55PHL		7.40	5.70	4.80	4.00	3.30	2.65
51PH		7.45	6.05	4.70	3.60	2.65	1.75
51PHL		10.45	8.05	6.70	5.60	4.65	3.75
52PH		12.15	9.65	7.75	6.10	4.75	3.40
52PHL		15.15	11.65	9.75	8.10	6.75	5.40
110PH		12.75	10.10	8.10	6.40	5.00	3.60
110PHL		15.75	12.10	10.10	8.40	7.00	5.60

SERIES PBH - PLANAR BLUE ENHANCED PHOTSENSORS

58PBH	4.50	3.75	2.85	1.95	1.30	.65
58PBHL	7.50	5.75	4.85	3.95	3.30	2.65
55PBH	5.20	4.30	3.20	2.40	1.60	.90
55PBHL	8.20	6.30	5.20	4.40	3.60	2.90
51PBH	8.50	6.85	5.30	4.10	3.10	2.10
51PBHL	11.50	8.85	7.30	6.10	5.10	4.10
52PBH	13.60	10.75	8.60	6.80	5.50	4.00
52PBHL	16.60	12.75	10.60	8.80	7.50	6.00
110PBH	14.55	11.50	9.20	7.25	5.70	4.15
110PBHL	17.55	13.50	11.20	9.25	7.70	6.15

SERIES PV - PLANAR LOW COST PHOTSENSORS

58PV	2.20	2.00	1.35	.80	.50	.30
58PVL	5.20	4.00	3.35	2.80	2.30	1.85
55PV	2.75	2.40	1.65	1.05	.55	.35
55PVL	5.75	4.40	3.65	3.05	2.50	2.00
51PV	5.30	4.40	3.30	2.45	1.70	.95
51PVL	8.30	6.40	5.30	4.45	3.70	2.95
52PV	9.35	7.50	5.90	4.60	3.50	2.40
52PVL	12.35	9.50	7.90	6.60	5.50	4.40
110PV	9.87	7.90	6.25	4.85	3.70	2.50
110PVL	12.87	9.90	8.25	6.85	5.70	4.50

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PRICE LIST STANDARD PHOTOSENSORS - CHIP FORM AUGUST 1, 1985
SERIES MR - MESA CHIP FORM PHOTOSENSORS

Part No.	Quantity:	1-10	11-50	51-100	101-500	501-1000	1001-5000
58MR		4.30	3.75	2.85	2.10	1.55	.85
58MRL		7.30	5.75	4.85	4.10	3.55	2.85
55MR		4.90	4.30	3.30	2.50	1.80	1.05
55MRL		7.90	6.30	5.30	4.50	3.80	3.05
51MR		7.95	6.55	5.20	4.10	3.15	2.10
51MRL		10.95	8.55	7.20	6.10	5.15	4.10
52MR		12.65	10.15	8.25	6.60	5.25	4.20
52MRL		15.65	12.15	10.25	8.60	7.25	6.20
110MR		13.25	10.60	8.60	6.90	5.50	4.00
110MRL		16.25	12.60	10.60	8.90	7.50	6.00

SERIES MB - MESA CHIP FORM PHOTOSENSORS - BLUE ENHANCED

58MB	5.00	4.25	3.35	2.60	2.05	1.25
58MBL	8.00	6.25	5.35	4.60	4.05	3.25
55MB	5.70	4.80	3.80	3.00	2.30	1.45
55MBL	8.70	6.80	5.80	5.00	4.30	3.45
51MB	9.00	7.05	5.70	4.60	3.65	2.50
51MBL	12.00	9.05	7.70	6.60	5.65	4.50
52MB	14.10	10.65	8.75	7.10	5.75	4.20
52MBL	17.10	12.65	10.75	9.10	7.75	6.20
110MB	15.05	11.10	9.10	7.40	6.00	4.40
110MBL	18.05	13.10	11.10	9.40	8.00	6.40

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