

BI-CELL AND QUADRANT PHOTODIODES

SPECIFICATIONS (PER ELEMENT)

Responsivity: 0.32 A/W minimum, 0.36 A/W typical @ 632.8nm; 0.50 A/W minimum, 0.55 A/W typical @ 900nm

Series Resistance: 100Ω maximum (measured by applying +10mA to photodiode and measuring voltage across anode and cathode)

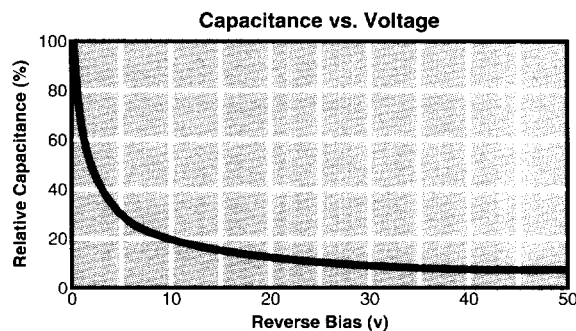
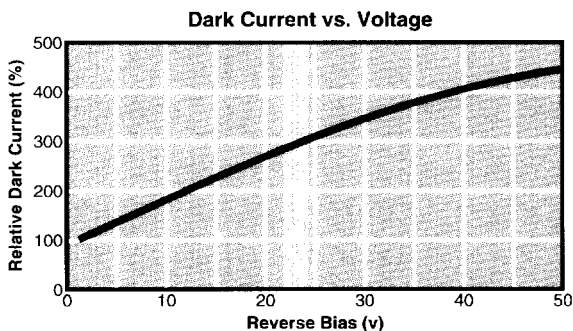
Non-uniformity between elements: 5% deviation maximum, 1% typical

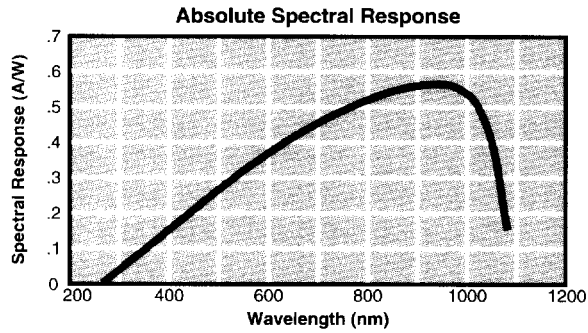
Part Number	Total Area per Element	Storage & Operating Temp.	Shunt ¹ Resistance	Dark Current ¹ at 5V		Breakdown Voltage ² @ 10μA	Capacitance ³ (typ)		NEP ⁴ @632.8nm	NEP ⁵ @950nm	Light ⁶ Power Density	Response Time ⁷ @ 10V
				(min)	Typ.		Max.	(typ)				
	(mm ²)	(°C)	(M-Ohm)	(nA)	(nA)	(V)	(pF)	(pF)	(W/ Hz)	(W/√Hz)	(mW/cm ²)	(nsec)
Bi-Cell (Two Element Detectors)												
SD 066-24-21-011	0.67	-40 to 110	500	0.2	1.0	50	15	3	2.1x10 ⁻¹⁴	1.2x10 ⁻¹⁴	10	7
SD 113-24-21-021	3.10	-40 to 110	250	0.9	5.0	50	60	13	4.3x10 ⁻¹⁴	2.5x10 ⁻¹⁴	10	8
SD 160-24-21-021	2.3	-40 to 110	300	0.7	3.5	50	45	9	4.3x10 ⁻¹⁴	2.5x10 ⁻¹⁴	10	7
SD 385-24-21-041	18.5	-40 to 110	40	6.0	31.0	50	390	85	5.0x10 ⁻¹⁴	2.9x10 ⁻¹⁴	10	32

Quadrant (Four Element Detectors)												
SD 055-23-21-011	0.25	-40 to 110	800	0.1	0.4	50	15	3	2.1x10 ⁻¹⁴	1.2x10 ⁻¹⁴	10	7
SD 085-23-21-021	2.25	-40 to 110	350	0.6	3.5	50	45	9	4.3x10 ⁻¹⁴	2.5x10 ⁻¹⁴	10	7
SD 118-23-21-021	1.61	-40 to 110	450	0.5	2.5	50	35	7	4.3x10 ⁻¹⁴	2.5x10 ⁻¹⁴	10	7
SD 197-23-21-041	4.79	-40 to 110	175	1.4	7.5	50	100	20	4.3x10 ⁻¹⁴	2.5x10 ⁻¹⁴	10	8
SD 225-23-21-040	5.4	-25 to 100	100	1.2	6.5	50	102	24	4.3x10 ⁻¹⁴	2.5x10 ⁻¹⁴	10	8
SD 380-23-21-051	17.8	-40 to 110	100	5.0	27.0	50	375	75	5.2x10 ⁻¹⁴	3.0x10 ⁻¹⁴	10	30

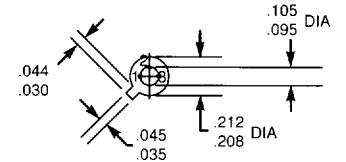
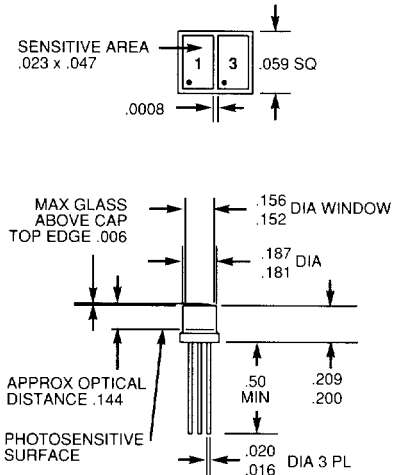
All specifications are per element.

1. Dark Current and Shunt Resistance vary with temperature as follows; for $T > 23^{\circ}\text{C}$, $I_D = 1.09^{\Delta T} I_{D23}$, $R_{SH} = 0.9^{\Delta T} R_{SH23}$ and for $T < 23^{\circ}\text{C}$, $I_D = I_{D23} / 1.09^{\Delta T}$, $R_{SH} = R_{SH23} / 0.9^{\Delta T}$, where ΔT is the temperature difference from 23°C , and I_{D23} and R_{SH23} are the dark current and shunt resistance at 23°C .
2. Typical values listed. Minimum value shall be 50% of typical.
3. Typical values are listed in the table. Maximum value is 20% higher than the typical value.
4. Test conditions are $V_B = 10\text{mV}$ and 632.8nm.
5. Test conditions are $V_B = 10\text{mV}$ and 950nm.
6. Above this value, a 10% deviation from linearity is expected. Saturation will occur at 10 times this level.
7. Response times were measured at 950nm with a 50Ω load. Shorter wavelengths will result in faster rise and fall times.

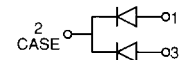




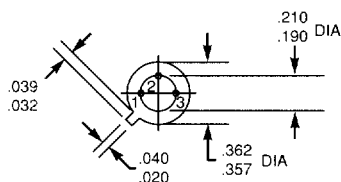
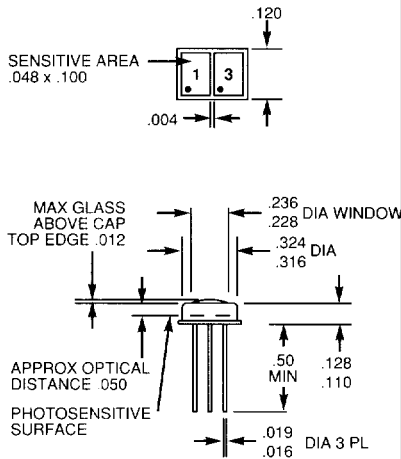
SD 066-24-21-011



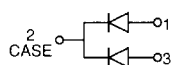
BOTTOM VIEW



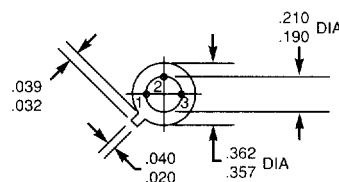
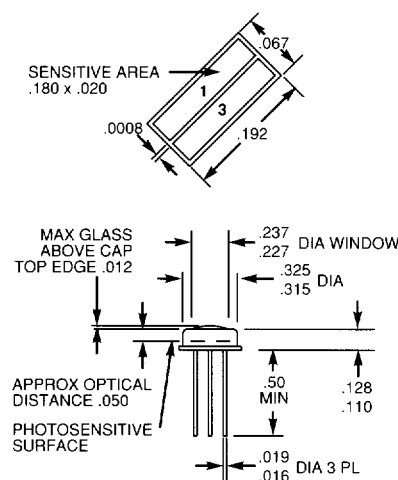
SD 113-24-21-021



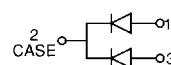
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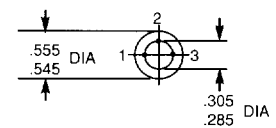
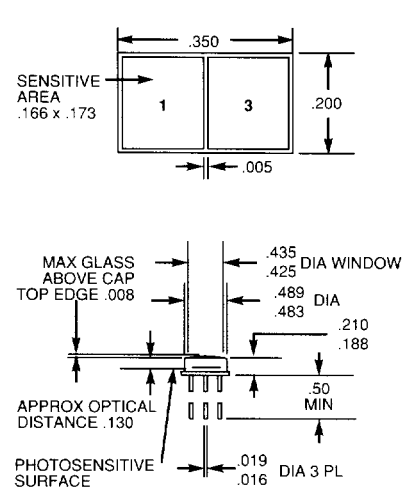
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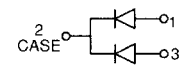
BOTTOM VIEW



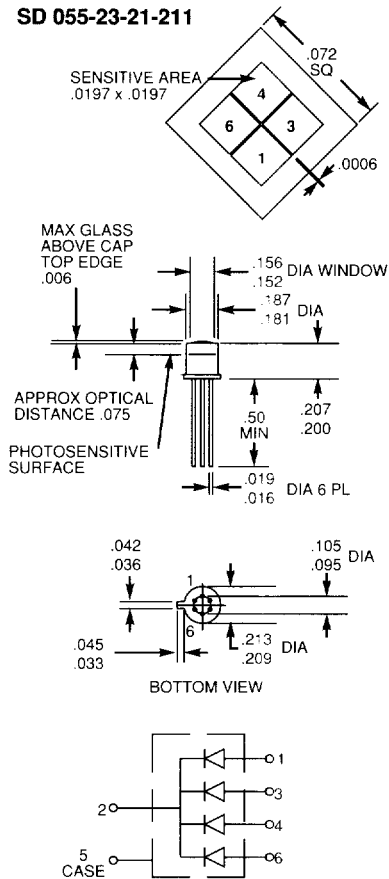
SD 385-24-21-041



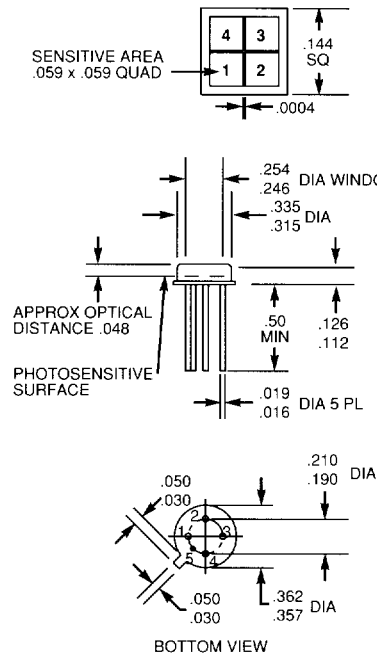
BOTTOM VIEW



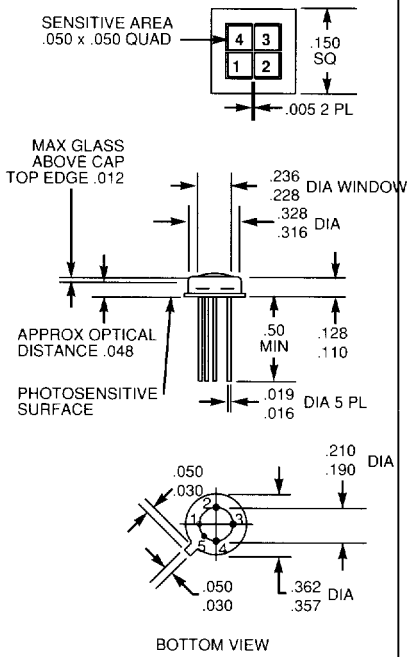
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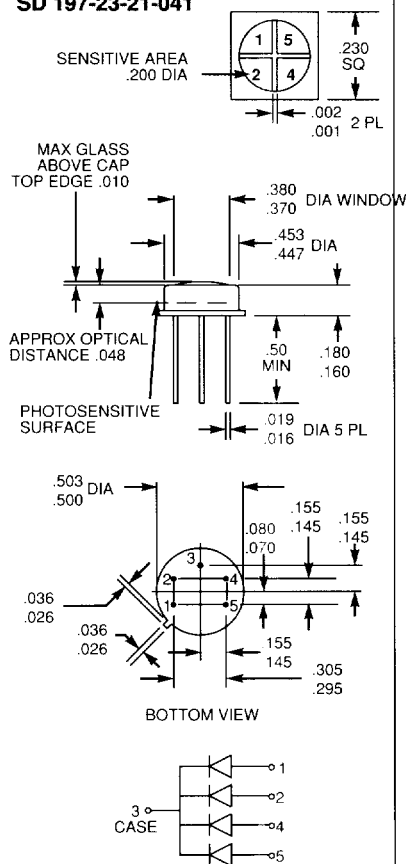
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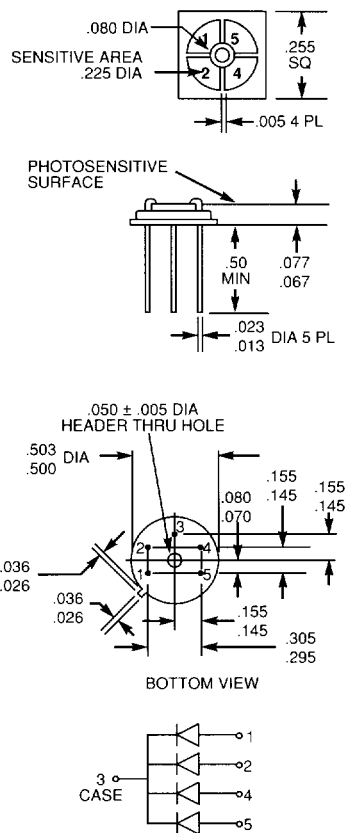
SD 118-23-21-021



SD 197-23-21-041



SD 225-23-21-040



SD 380-23-21-051

