Ultra-Low Noise PIN Photodiodes

Specifications

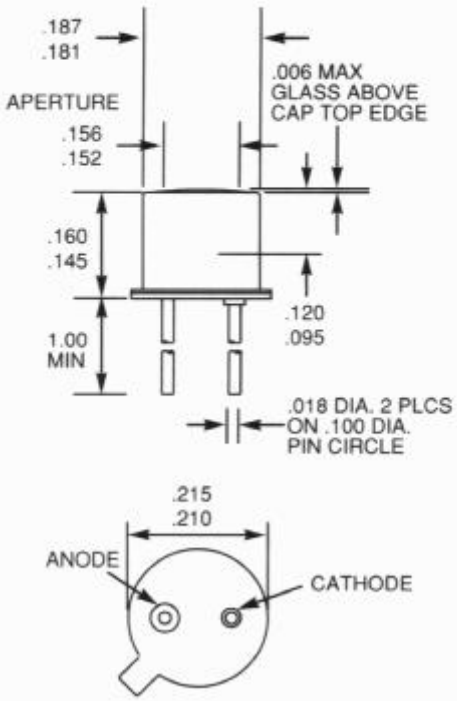
Responsivity: 0.50 A/W minimum, 0.55 A/W typical @ 900nm
Series Resistance: 100Ω maximum (measured by applying +10mA to photodiode and measuring voltage across anode and cathode)

Part Number	Active Area	Storage & Operating Temp.	Shunt Resistance	Dark Current[1] @ 5V		Breakdown Voltage[2] @ 10µ A	Capacitance[3] (typ)		NEP[4]	Max. Linear Current[5]	Response Time[6] @ 5V
	in (mm)	(C°)	(min) (M-Ohm)	typ (nA)	max (nA)	(typ) (V)	@ 0V (pF)	@ 5V (pF)	(typ) (W/√ Hz)	(typ) (mA)	(typ) (nsec)
SD 057-14-21-011	0.051 x 0.051 (1.3 x 1.3)	-40 to 110	1600	0.1	0.5	50	28	9	$1.0x10^{-14}$	0.17	10
SD 076-14-21-011 (isolated) -211	0.105 x 0.043 (2.66 x 1.09)	-40 to 110	900	0.2	0.9	50	50	15	$1.4x10^{-14}$	0.29	11
SD 100-14-21-021 (isolated) -221	0.100 (dia.) (2.54mm dia.)	-40 to 110	600	0.3	1.6	50	87	26	$1.8x10^{-14}$	0.51	15
SD 172-14-21-021 (isolated) -221	0.185 x 0.125 (4.7 x 3.18)	-40 to 110	200	1.0	5.0	50	255	76	$3.0x10^{-14}$	1.5	30
SD 200-14-21-041 (isolated) -241	0.200 (dia.) (5.08 dia.)	-40 to 110	140	1.3	6.5	50	345	102	$3.8x10^{-14}$	2.03	45
SD 290-14-21-041 (isolated) –241	0.300 x 0.220 (7.62 x 5.58)	-40 to 110	65	2.5	13	50	725	217	$5.6x10^{-14}$	4.76	70
SD 445-14-21-305	0.394 x 0.394 (10 x 10)	-20 to 75	30	6.0	30	50	1700	500	$8.6x10^{-14}$	10.0	200

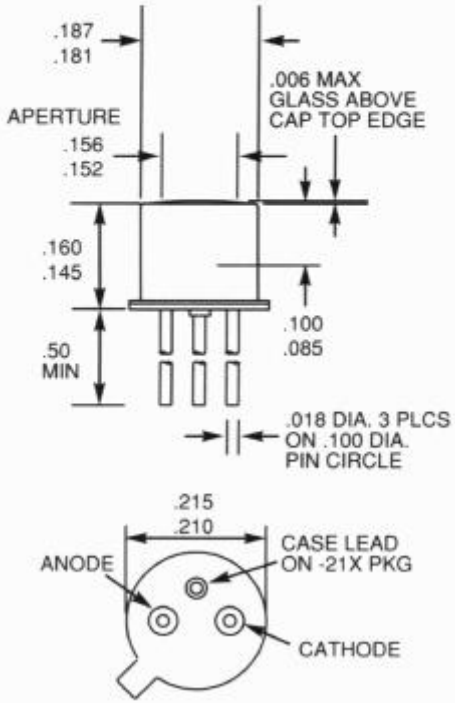
1. Dark Current and Shunt Resistance vary with temperature as follows: for T>23° C, $I_D=1.09^{\Delta T} I_{D23}$, $R_{SH}=0.9^{\Delta T} R_{SH23}$ and for T<23°C, $I_D=I_{D23}/1.09^{\Delta T}$, $R_{SH}=R_{SH23}/0.9^{\Delta T}$, where Δ T is the temperature difference from 23° C, and I_{D23} and R_{SH23} 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=5V and 950nm.
5. Maximum linear current specifies the level above which the output current deviates more than 10%. Short circuit current saturates at approximately 10 times this level.
6. Response times listed are for the rising or falling edge, and were measured at 830nm with a 50Ω load. Shorter wavelengths will result in faster rise and fall times.

SD 057-14-21-011

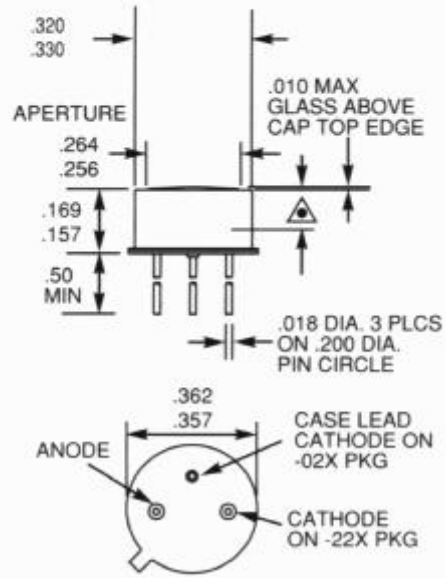
SD 076-14-21-011



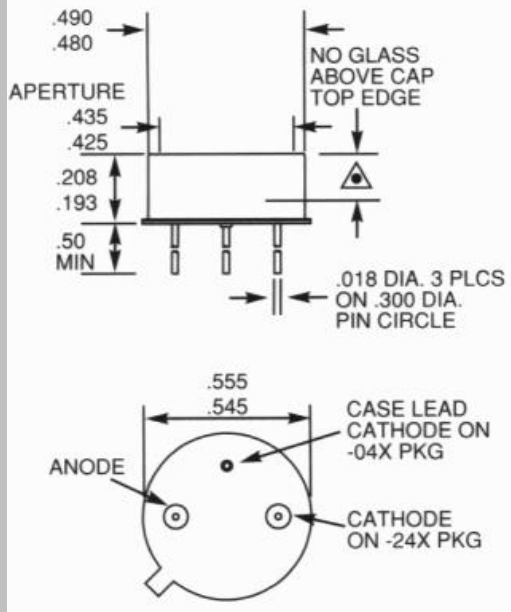
SD 076 14-21-211



	△
SD 100-14-21-021	.111 .095
SD 100-14-21-221	.098 .078
SD 172-14-21-021	.111 .095
SD 172-14-21-221	.098 .078



	△
SD 200-14-21-041	.136 .095
SD 200-14-21-241	.111 .115
SD 290-14-21-041	.136 .095
SD 290-14-21-241	.111 .115



SD 445-14-21-305