

X00158

SPD1511-X-XX

SSDI

RADIATION DETECTOR PIN DIODE

14849 FIRESTONE BLVD.
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CASE STYLE

T0-18

T0-39



FEATURES

- ▶ HIGH PHOTOCURRENT SENSITIVITY
- ▶ FAST RISE TIME
- ▶ HIGH RELIABILITY CONSTRUCTION
- ▶ WIDE DYNAMIC RANGE
- ▶ LOW OPERATING VOLTAGE
- ▶ HARDNESS TO NEUTRON BOMBARDMENT
- ▶ PLANAR EPITAXIAL PROCESS

RATING	SYMBOL	VALUE	UNIT
Reverse Voltage	VR	120	Volt
Photocurrent	IP	250	mA
Operating and Storage Temperature	TJ, Tstg	-65 to +200	°C

SPECIFICATION (@ 25 °C)	SYMBOL	MIN	TYP	MAX	UNIT
Photocurrent ($10^8 \frac{\text{rad}(\text{si})}{\text{Sec.}}$ Gamma RAD)	IP	30	40	50	mAdc
Capacitance (VR = 50V, f = 1 MHz) SPD ~~SDP~~ 1511-X * SPD ~~SDP~~ 1511-X-01 SPD ~~SDP~~ 1511-X-11 SPD ~~SDP~~ 1511-X-21	CJ	10 10 14 12	12	17 13 17 15	PF
Capacitance Ratio (f = 1MHz) $\frac{CJ (-30V)}{CJ (-5V)}$		85	93		%
Reverse Current (VR = 50V)	IR			200	nAdc
Breakdown Voltage (IR = 100 uA)	BVR	90**			Vdc
Reverse Recovery Time (0.5A - 1A - 0.25A)	trr		175		nsec

*) Key:

(1) (2)(3)
SPD1511 - X - X X

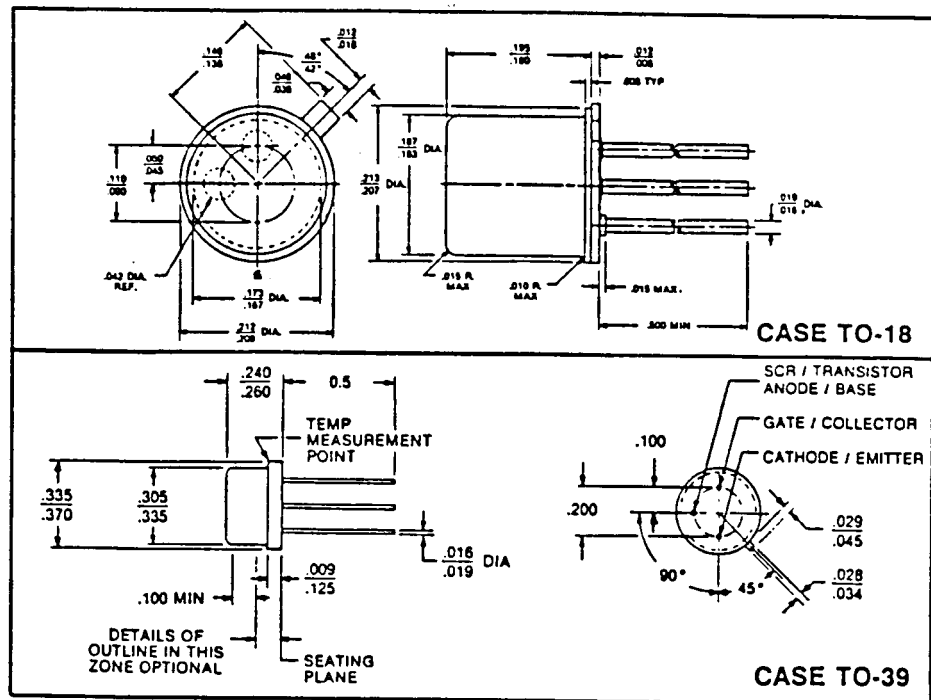
(1) = Package type
(2) = Capacitance range
(3) = Number of chips in a package

**) Higher Voltages available.

Rev. 9/89

Note: All specifications subject to change without notice.

PHYSICAL DIMENSIONS



These Silicon PIN Radiation Detectors are extremely effective detectors of nuclear and electromagnetic radiation, including gamma radiation, electrons, and X-ray detection.

SSDI's series of radiation detectors utilize high sensitivity epi-materials which permit good control of saturation voltage, response time, and capacitance of the device. Thus the construction of the device yields a wide operating temperature range and minimized the permanent damage caused by neutrons or electromagnetic radiation. Unlike other PIN Radiation Detectors, these devices are not restricted to low temperature usages.

SSDI's series of radiation detectors are manufactured using silicon planar technology which enables versatile packaging possibilities. Devices are offered as a chip mounted on a moly, in a TO-5 package, in a TO-18 package, or other package configurations. SSDI's manufacturing process allows depletion region thickness (controlled by the epi-thickness) to be tailored to optimize the sensitivity range, capacitance, and other electrical requirements. This process versatility enables SSDI to meet any number of customer requirements and specifications.

Please consult our Component Specialists for engineering assistance.