



**DESCRIPTION**

The **SD 394-70-74-591** is a cooled large area silicon avalanche photodiode (APD) that provides high gain and low noise, in a hermetic TO-3 package.

**FEATURES**

- Low Noise
- Small Size
- High Speed
- Low Cost

**RELIABILITY**

Contact Luna for recommendations on specific test conditions and procedures.

**APPLICATIONS**

- Industrial
- Medical
- Military

**ABSOLUTE MAXIMUM RATINGS**

SYMBOL	MIN		MAX	UNITS	
Gain	-	-	350	-	$T_a = 23^{\circ}\text{C}$ UNLESS OTHERWISE NOTED
Storage Temperature	-55	to	+70	$^{\circ}\text{C}$	-
Operating Temperature	+1	to	+40	$^{\circ}\text{C}$	-
Soldering Temperature*	-	-	+240	$^{\circ}\text{C}$	-
TEC Voltage	-	-	4.3	V	-
TEC Current	-	-	2.0	A	-
APD Die Power Diss.	-	-	0.2	W	-

\* 1/16 inch from case for 3 seconds max

**OPTO-ELECTRICAL PARAMETERS**

T<sub>a</sub> = 23°C UNLESS NOTED OTHERWISE

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
Dark Current	-	-	15	35	nA
Junction Capacitance	f = 1 MHz	-	50	-	pF
Noise Current Spectral Density	f = 100 kHz	-	1.5	2.5	pA/√Hz
Spectral Application Range	Spot Scan	350	-	1050	nm
Responsivity	λ = 500 nm, V <sub>R</sub> = 0 V	-	35	-	A/W
Operating Voltage	-	1700	-	2000	V
Response Time**	RL = 50Ω, λ = 675nm	-	12	18	nS
TEC Quiescent Current	Case Temp = 35°C	-	0.95	-	A

\*\*Response time of 10% to 90% is specified at 675nm wavelength light.  
All specifications are with the APD internally cooled to 0°C and a gain of 300.

**TYPICAL PERFORMANCE**

**DIRECTIONAL SENSITIVITY**

