

FEATURES

- Low noise
- Small size
- High Speed
- Low cost

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.

APPLICATIONS

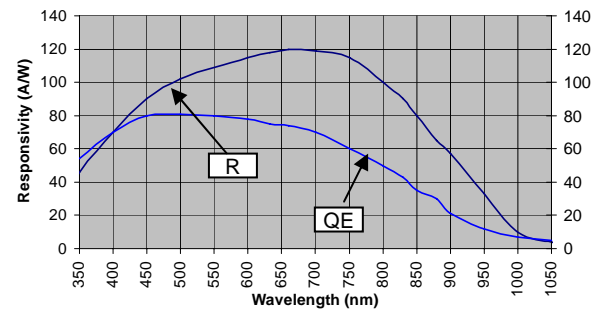
- Military
- Industrial
- Medical

ABSOLUTE MAXIMUM RATING (TA)= 23°C UNLESS OTHERWISE NOTED

| SYMBOL | PARAMETER | MIN | MAX | UNITS |
|------------------|------------------------|-----|------|-------|
| M | Gain | | 350 | |
| T _{STG} | Storage Temperature | -55 | +70 | °C |
| T _O | Operating Temperature | +1 | +40 | °C |
| T _S | Soldering Temperature* | | +240 | °C |
| V _{TEC} | TEC voltage | | 4.3 | V |
| I _{TEC} | TEC Current | | 2.0 | A |
| P | APD Die Power Diss. | | 0.2 | W |

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

SPECTRAL RESPONSE M = 300



ELECTRO-OPTICAL CHARACTERISTICS RATING (TA)= 23°C UNLESS OTHERWISE NOTED

| SYMBOL | CHARACTERISTIC | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|-------------------|--------------------------------|----------------------------------|------|------|------|--------|
| I _D | Dark Current | | | 15 | 35 | nA |
| C _J | Junction Capacitance | f = 1 MHz | | 50 | | pF |
| I _N | Noise Current Spectral Density | f = 100 kHz | | 1.5 | 2.5 | pA/√Hz |
| λ range | Spectral Application Range | Spot Scan | 350 | | 1050 | nm |
| R | Responsivity | λ = 500 nm, V _R = 0 V | | 35 | | A/W |
| V _{op} | Operating voltage | | 1700 | | 2000 | V |
| t _r | Response Time** | RL = 50 Ω, λ = 675nm | | 12 | 18 | nS |
| I _{QTEC} | 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.

Information in this technical datasheet is believed to be correct and reliable. However, no responsibility is assumed for possible inaccuracies or omission. Specifications are subject to change without notice.

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