

Sensitivity Wavelength Range: 250-1100nm

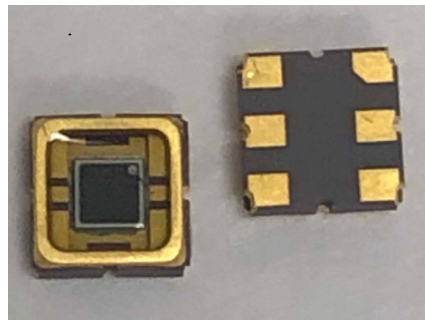
The MT03-021 is a square (1.1 x1.1) 1.2mm² active area Silicon Photodiode in a surface mount package with clear encapsulation. It is optimized for applications requiring high sensitivity in the 300 to 500nm region (UVA, Blue & Green).

Features

- > Ultra Low Noise
- > High Shunt Resistance
- > Wide Dynamic Range
- > 365nm & Blue/Green Enhanced

Applications

- > Flame Detection
- > Currency Authentication
- > Spectroscopy Equipment
- > Fluorescence



Absolute Maximum Ratings



| Items | Symbol | Rating | Unit |
|------------------------------|------------------|------------|------|
| Reverse Voltage | V _R | 50 | V |
| Operating Temperature Range | T _{opr} | -40 ~ +100 | °C |
| Storage Temperature Range | T _{stg} | -55 ~ +125 | °C |
| Lead Soldering Temperature*1 | T _{ls} | 260 | °C |

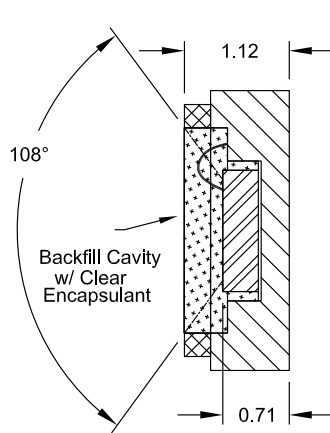
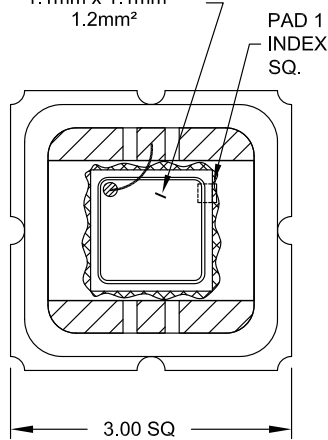
*1: Time 5 Sec max, Position: Up to 3mm from the body.

Electrical & Optical Characteristics (T_a = 23°C)

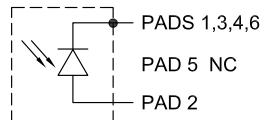
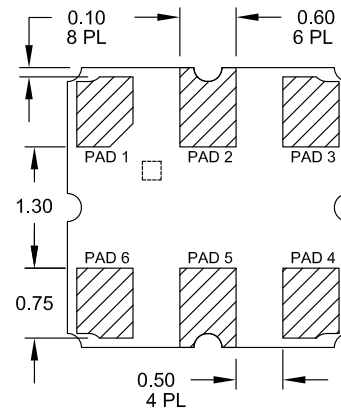
| Items | Symbol | Conditions | MIN | TYP | MAX | Unit |
|-------------------------|-------------------|---|-----|----------|-----|------|
| Dark Current | I _d | V _R =5V | -- | 0.2 | 1.0 | nA |
| Breakdown Voltage | V _(BR) | I _R =10μA | 50 | -- | -- | V |
| Spectral Sensitivity | λ | -- | -- | 250-1100 | -- | nm |
| Peak Sensitivity | λ _p | -- | -- | 950 | -- | nm |
| Wavelength Responsivity | R | V _R =0V, λ=365nm | -- | 0.22 | -- | A/W |
| Responsivity | R | V _R =0V, λ=633nm | -- | 0.40 | -- | A/W |
| Response Time @635nm | T _r | R _L =50Ω, V _R =5V | -- | 20 | -- | ns |
| Junction Capacitance | C _j | @ 1MHz, V _R =0V | -- | 20 | -- | pF |
| Junction Capacitance | C _j | @ 1MHz, V _R =5V | -- | 6 | 8 | pF |
| Shunt Resistance | R _{sh} | V _R =10mV | 500 | 800 | -- | |

SMD Package Dimensions (6 Pads)

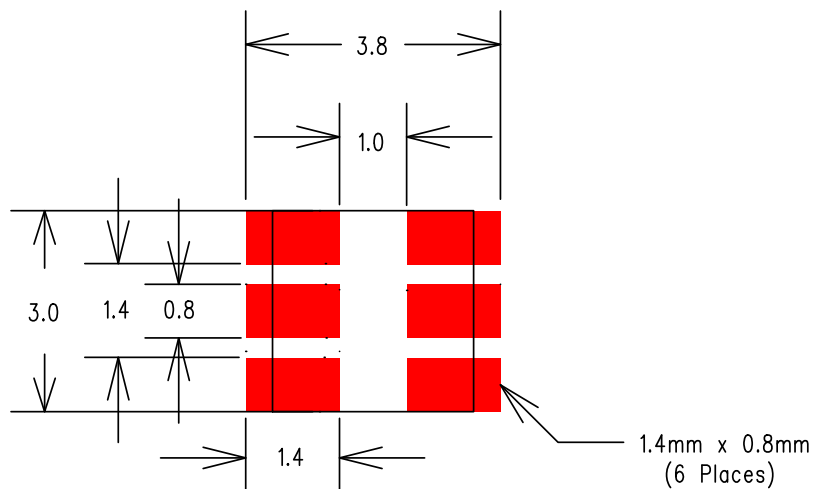
Photodiode Active Area:
1.1mm x 1.1mm
1.2mm²



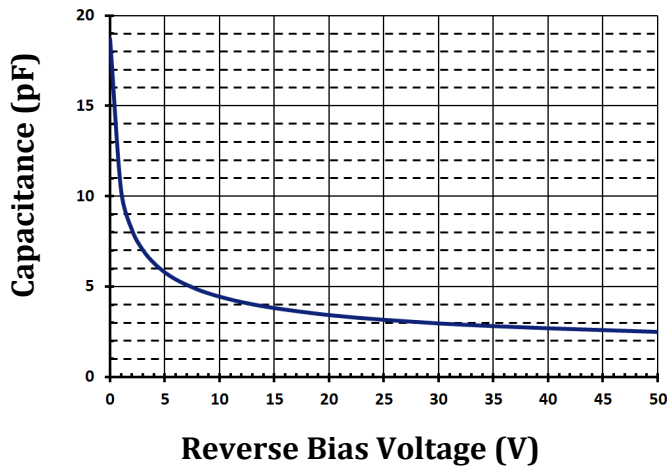
Optional Marking on backside of ceramic:
MT03021 &/or Date Code



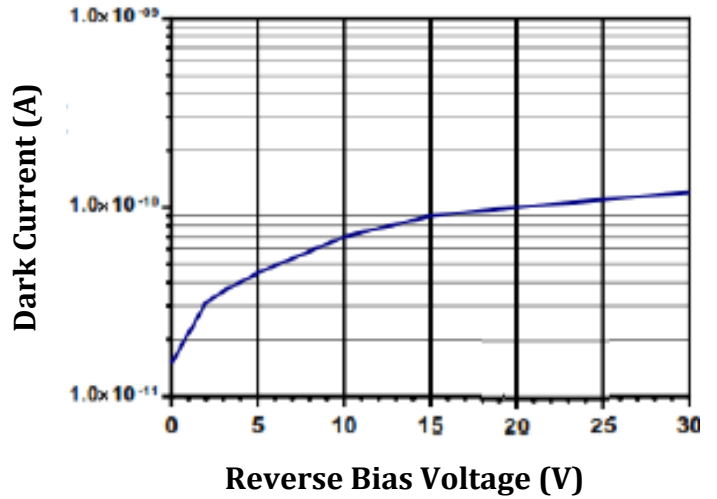
Recommended Soldering Pattern (mm)



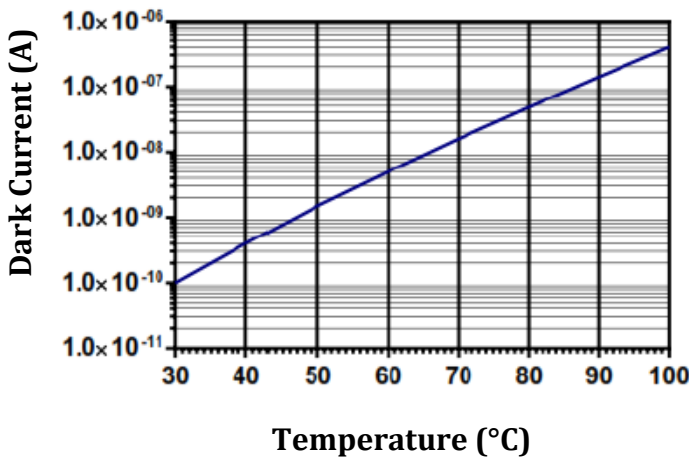
Capacitance vs Reverse Bias



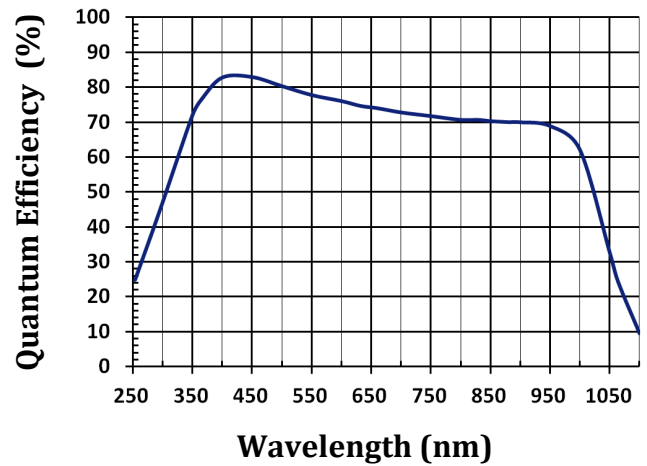
Dark Current vs Reverse Bias (23°C)



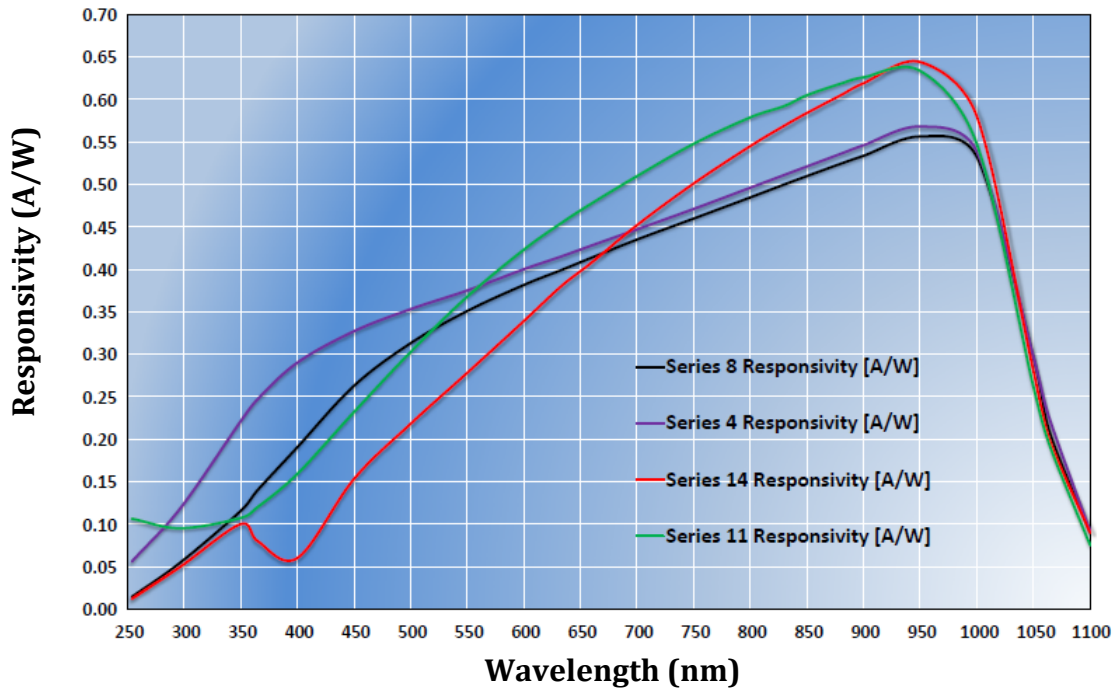
Dark Current vs Temperature ($V_R=10V$)



Series 4 Quantum Efficiency (23°C)



Photodiode Responsivity by Series



The information contained herein is subject to change without notice.

2023-12-18