

## Enhanced Sensitivity Wavelengths: 250nm-1750nm

The MT03-047 is a Multi Spectral Photodiode in a **ceramic SAW** package.

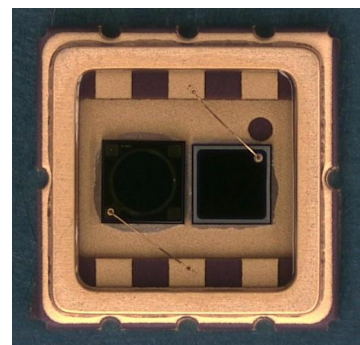
It is specifically designed for use with wavelengths ranging from 250nm Ultraviolet (UV) to 1750nm Short Wave Infrared (SWIR).

### FEATURES

- > Ultra low noise
- > High Shunt Resistance
- > Wide Dynamic Range
- > 365nm Enhanced Silicon/1300nm InGaAs SWIR

### APPLICATIONS

- > Medical
- > Industrial
- > Communications
- > Security



## Absolute Maximum Ratings



| ITEMS                       | SYMBOL | RATINGS    | UNIT |
|-----------------------------|--------|------------|------|
| Reverse Voltage             | Vr     | 50         | V    |
| Operating Temperature Range | Topr   | -40 ~ +100 | °C   |
| Storage Temperature Range   | Tstg   | -55 ~ +125 | °C   |

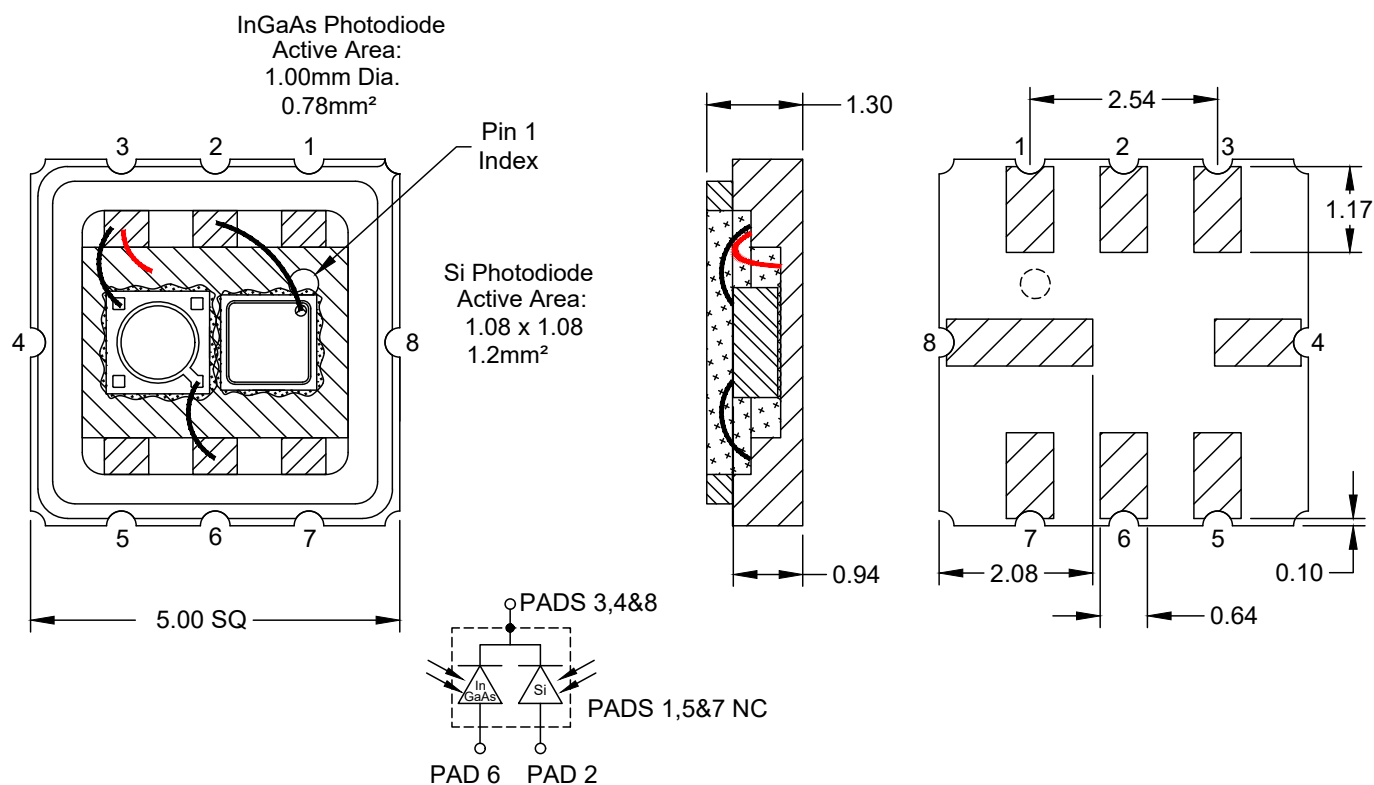
## Electrical & Optical Characteristics (1.2mm Silicon-PD) Ta = 23°C)

| ITEMS                       | SYMBOL      | CONDITIONS              | MIN  | TYP  | MAX  | UNIT       |
|-----------------------------|-------------|-------------------------|------|------|------|------------|
| Dark Current                | Id          | Vr=5V                   | --   | 0.1  | 1.0  | nA         |
| Forward Voltage             | Vf          | If=2mA                  | --   | --   | 0.8  | V          |
| Breakdown Voltage           | Vb          | Ir=10uA                 | 3.0  | --   | --   | V          |
| Spectral Sensitivity Range  | $\lambda$   | --                      | 250  | --   | 1100 | nm         |
| Peak Sensitivity Wavelength | $\lambda_p$ | --                      | --   | 950  | --   | nm         |
| Responsivity                | Rt          | Vr=0V, $\lambda=400$ nm | 0.20 | 0.28 | --   | A/W        |
| Responsivity                | Rt          | Vr=0V, $\lambda=633$ nm | --   | 0.40 | --   | A/W        |
| Rise Time @ 365nm           | Vf          | Vr=0V, RI=1k $\Omega$   | --   | 100  | --   | ns         |
| Junction Capacitance        | Cj          | at 1MHz, Vr=0V          | --   | 20   | --   | pF         |
| Junction Capacitance        | Cj          | at 1MHz, Vr=5V          | --   | 6    | 8    | pF         |
| Shunt Resistance            | Rsh         | Vr=10mV                 | 1000 | 2000 | --   | m $\Omega$ |

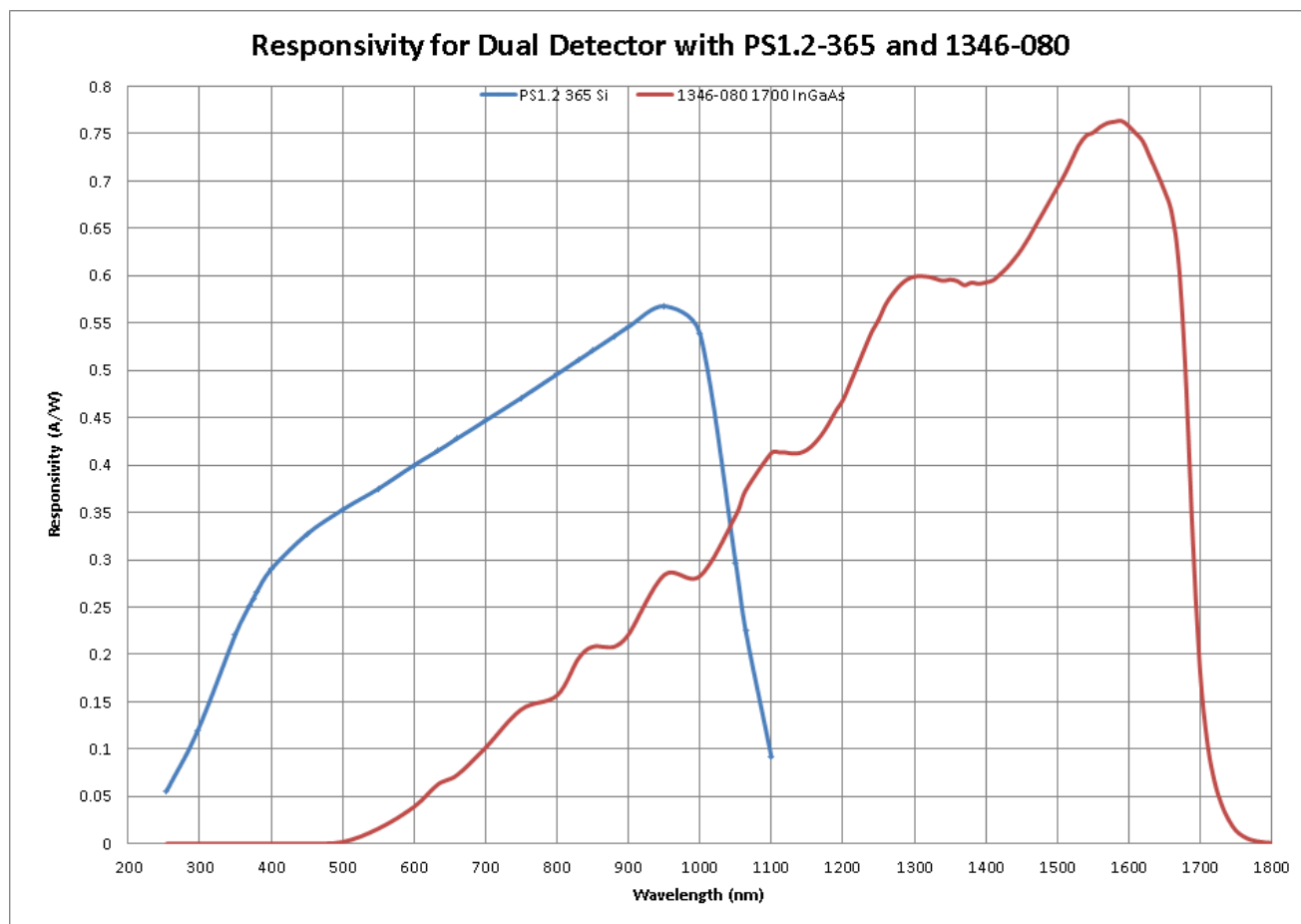
### Electrical & Optical Characteristics (1.0mm InGaAs-PD) Ta = 25°C)

| ITEMS                       | SYMBOL      | CONDITIONS               | MIN | TYP  | MAX  | UNIT |
|-----------------------------|-------------|--------------------------|-----|------|------|------|
| Dark Current                | $I_d$       | $V_r=2V$                 | --  | --   | 2000 | nA   |
| Forward Voltage             | $V_f$       | $I_f=10mA$               | --  | 0.6  | --   | V    |
| Breakdown Voltage           | $V_b$       | $I_r=10\mu A$            | 5   | --   | --   | V    |
| Spectral Sensitivity Range  | $\lambda$   | --                       | 600 | --   | 1750 | nm   |
| Peak Sensitivity Wavelength | $\lambda_p$ | --                       | --  | 1590 | --   | nm   |
| Responsivity                | $R_t$       | $V_r=0V, \lambda=950nm$  | --  | 0.4  | --   | A/W  |
| Responsivity                | $R_t$       | $V_r=0V, \lambda=1550nm$ | --  | 0.7  | --   | A/W  |
| Junction Capacitance        | $C_j$       | $V_r=0V$                 | --  | 60   | --   | pF   |
| Rise Time @ 950nm           | $V_f$       | $V_r=0V, R_l=1k\Omega$   | --  | 1.0  | --   | ns   |

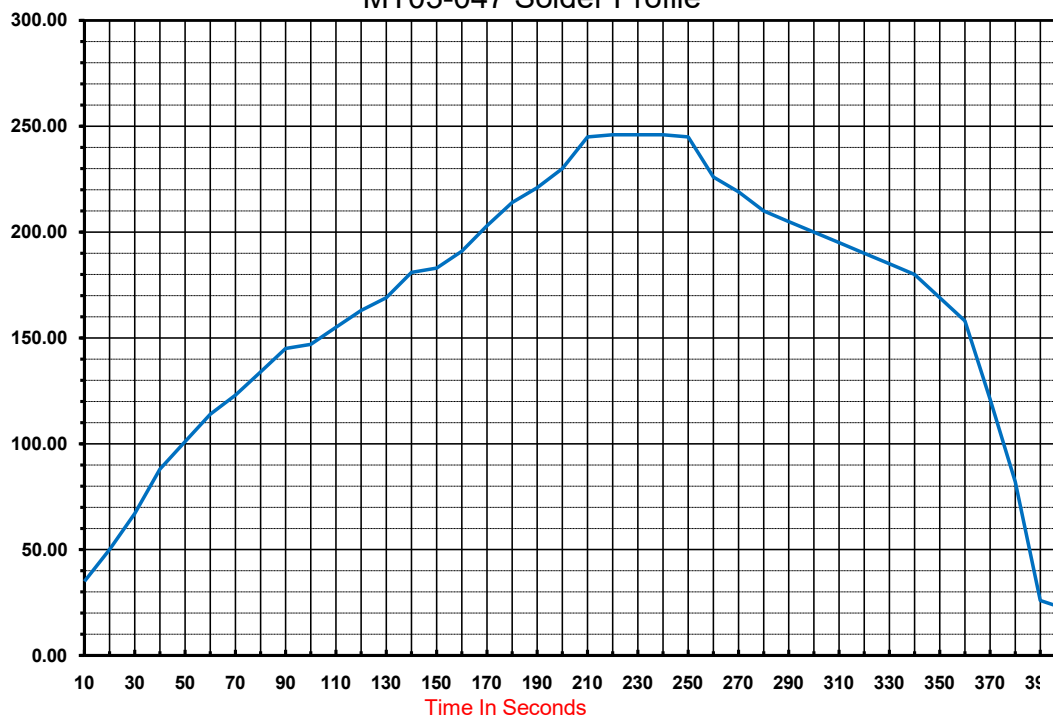
### Package Dimensions



## Responsivity



**Time/Temp Reflow**  
**MT03-047 Solder Profile**



**Recommended Soldering Pattern [mm]**

