

## Sensitivity Wavelength Range: 600nm ~ 1750nm

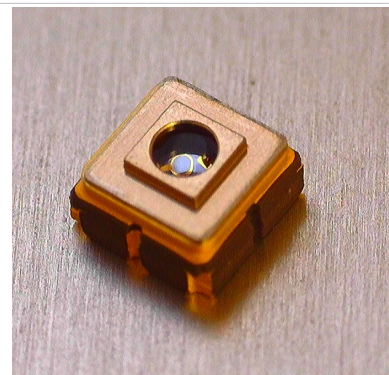
The 1346 series from Marktech, a high sensitivity and high reliability product series, is ideally suited for Optical Communication devices. Custom packaging options for this die are also available.

### FEATURES

- > High Speed Response (Max: 2Gbps)
- > Seam Welded Surface Mount Package
- > Active Area of 0.3mm / High Sensitivity
- > Spectral Range: 600nm - 1750nm
- > Hermetically Sealed

### APPLICATIONS

- > High Speed Optical Communications
- > Industrial Controls
- > Optical Switches
- > LIDAR
- > Medical



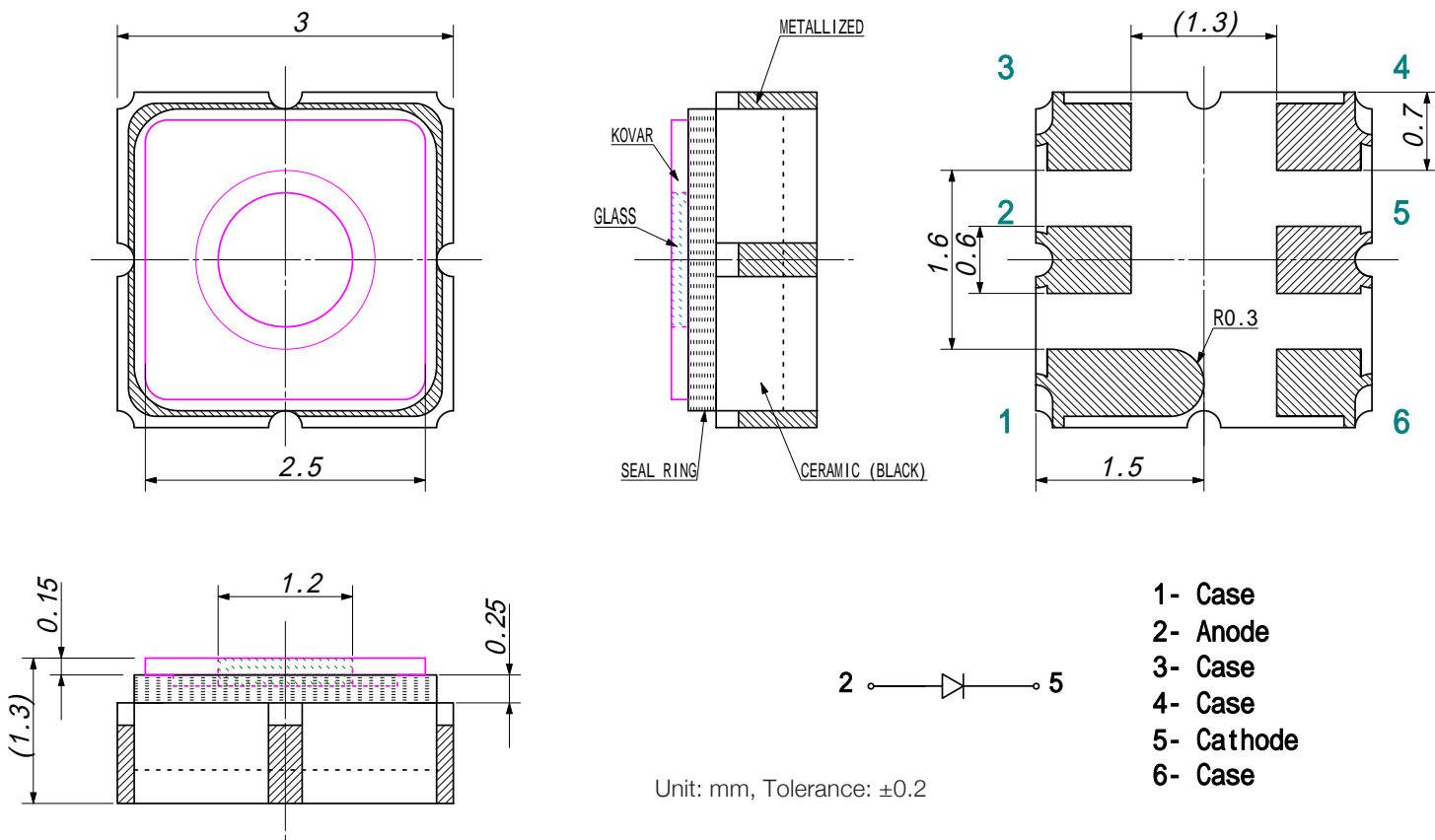
## Absolute Maximum Ratings (Ta=25°C)

| ITEMS                       | SYMBOL           | RATINGS     | UNIT |
|-----------------------------|------------------|-------------|------|
| Active Area                 | Φ                | 0.3         | mm   |
| Operating Temperature Range | T <sub>opr</sub> | -40 to +85  | °C   |
| Storage Temperature Range   | T <sub>stg</sub> | -40 to +125 | °C   |

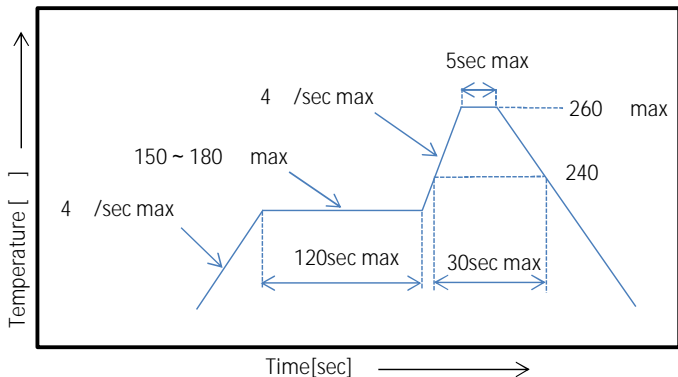
**Note: Also available on PCB - Starboard MTSM1346SMF1-030S (See Page 3)**

## Electrical & Optical Characteristics (Ta = 25°C)

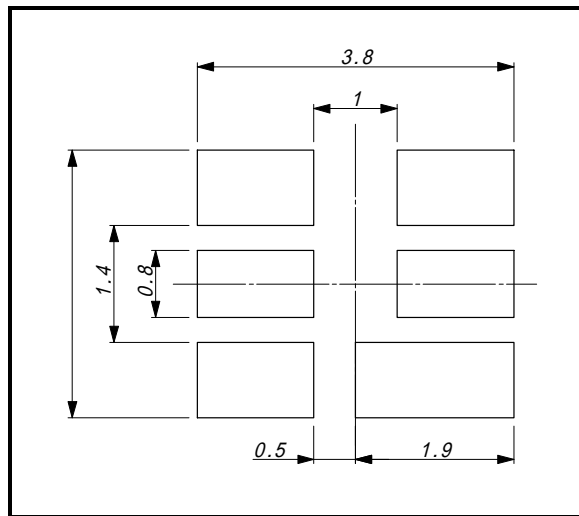
| ITEMS                   | SYMBOL | CONDITIONS | MIN | TYP   | MAX  | UNIT |
|-------------------------|--------|------------|-----|-------|------|------|
| Breakdown Voltage       | VR     | IR=10uA    | --  | --    | 1    | V    |
| Sensitivity Range       | λ      | VR=0V      | 600 | --    | 1750 | nm   |
| Dark Current            | ID     | VR=0V      | --  | 0.025 | --   | nA   |
| Dark Current            | ID     | VR=1V      | --  | 16    | --   | nA   |
| Junction Capacitance    | C      | VR=0V      | --  | 12    | --   | pF   |
| Junction Capacitance    | C      | VR=1V      | --  | 10    | --   | pF   |
| Responsivity            | R      | λ=1650nm   | --  | 0.74  | --   | A/W  |
| Quantum Efficiency      | QE     | λ=1660nm   | --  | 55    | --   | %    |
| Shunt Resistance        | RSH    | VR=10mV    | --  | 12    | --   | MΩ   |
| Light Current @λ=1300nm | IL     | If=10mA    | --  | 35    | --   | μA   |
| Light Current @λ=1300nm | IL     | If=20mA    | --  | 65    | --   | μA   |



Reflow Soldering Temperature-Profile [Pb free Soldering] (Recommend condition)



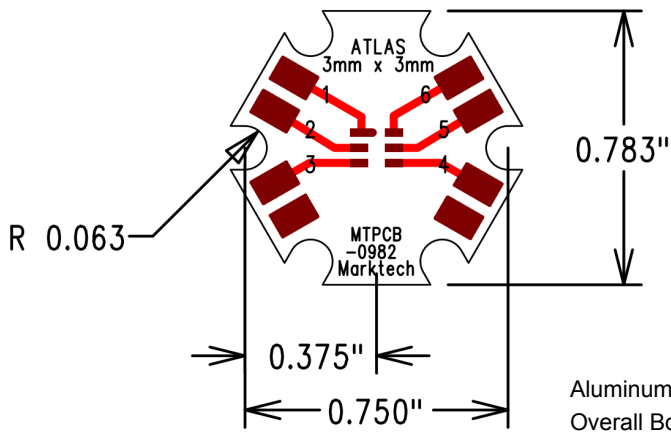
Recommended Soldering Pattern [mm]



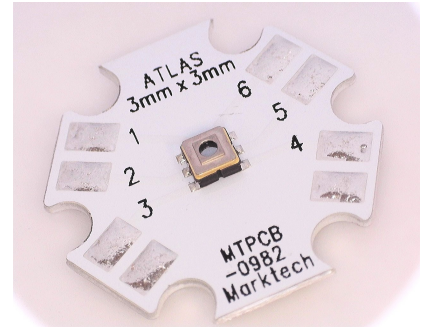
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Starboard Dimensions



- |       |         |
|-------|---------|
| Pin 1 | Case    |
| Pin 2 | Anode   |
| Pin 3 | Case    |
| Pin 4 | Case    |
| Pin 5 | Cathode |
| Pin 6 | Case    |



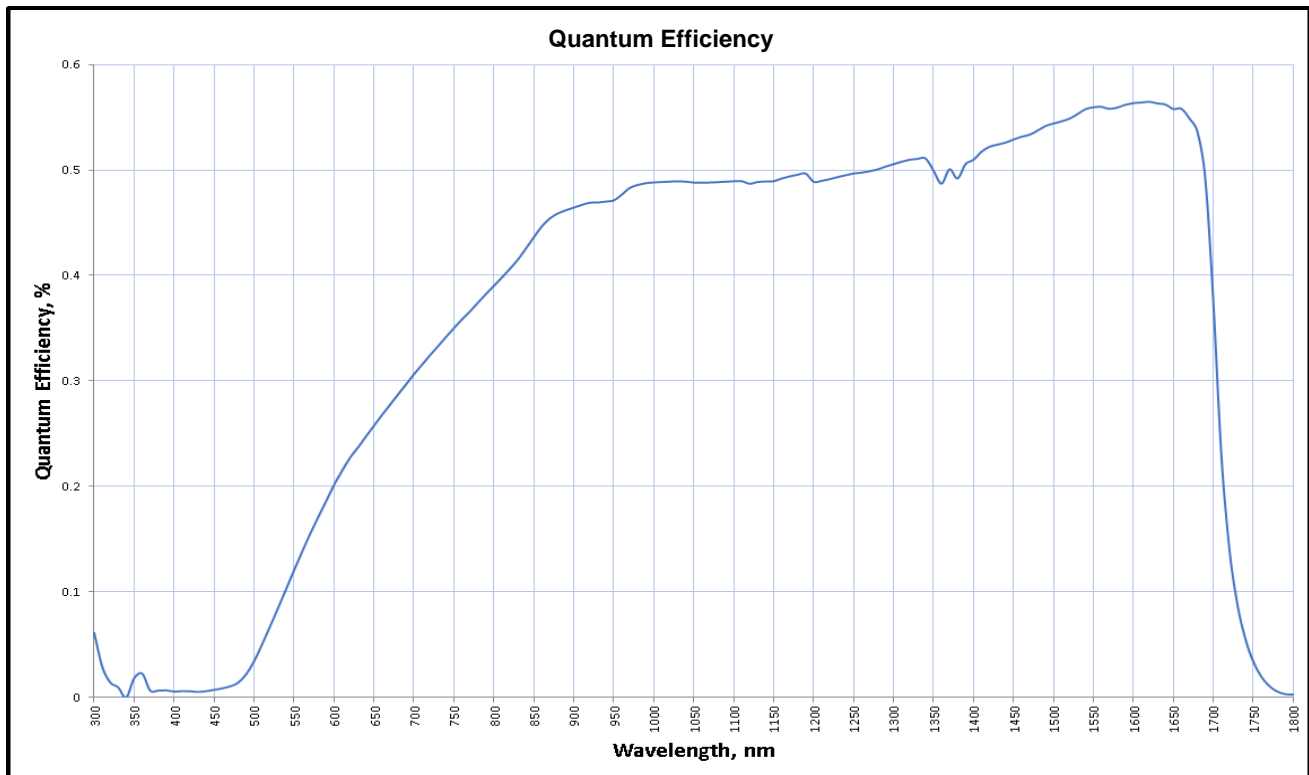
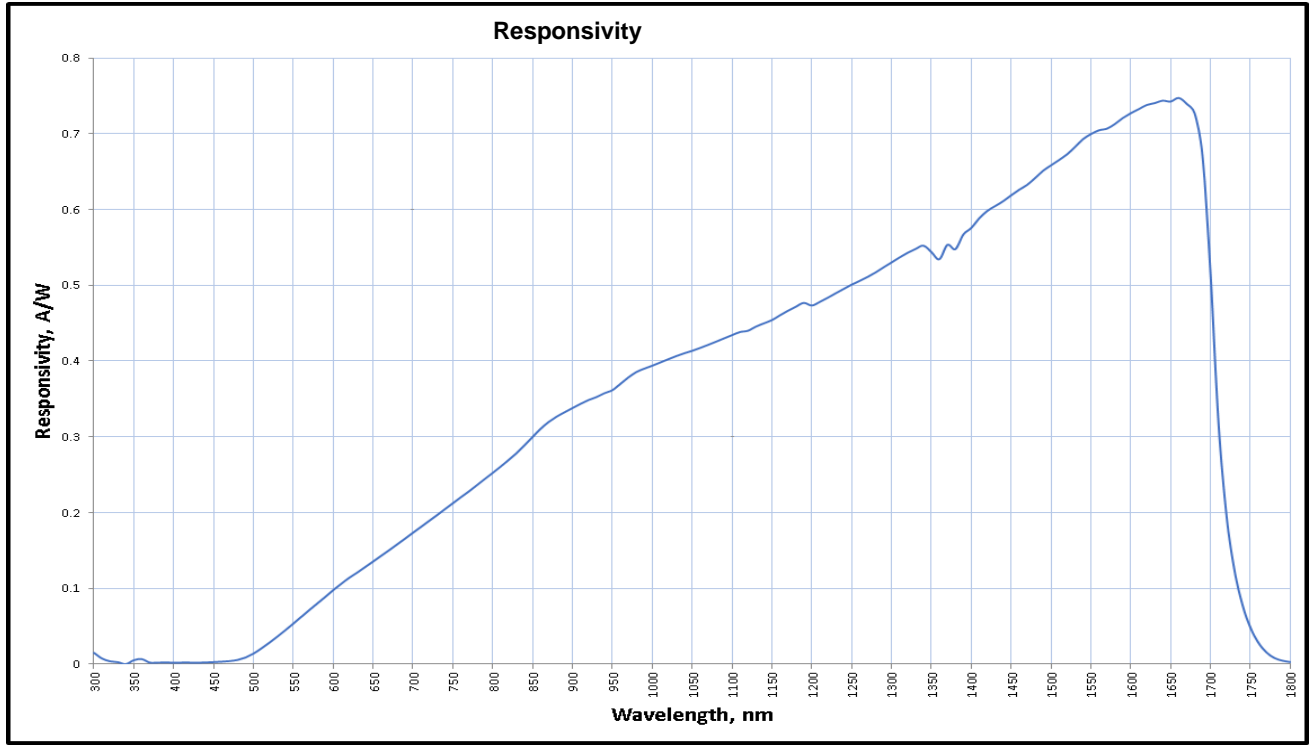
Aluminum Core Board 0.040" (1.02mm) Thickness  
Overall Board Dimensions: +/- 0.010" (0.254mm)



We reserve the right to make changes to improve technical design and may do so without further notice. Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer.

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