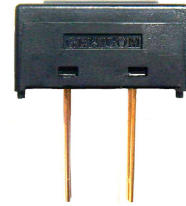


# Reflective UV Sensor

## GUVF-P12MD

### Features

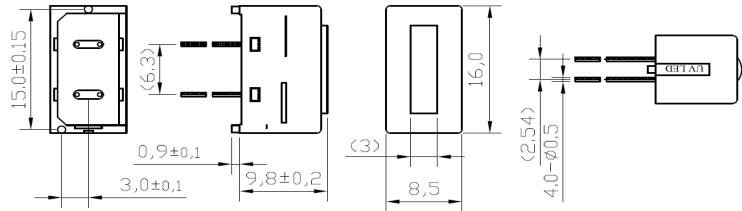
Light Emission Wavelength - 365nm  
 Emitting part- Visible range absorbing filter  
 Receiving part - UV absorbing filter  
 Responding to fluorescence ink



### Applications

Money detecting  
 Counterfeits bill detecting

### Outline Diagrams



### 1. Emitting Part

#### Absolute Maximum Ratings

| Parameter               | Symbol    | Min. | Max. | Unit | Remark        |
|-------------------------|-----------|------|------|------|---------------|
| Forward Current         | $I_F$     |      | 25   | mA   |               |
| Pulse Forward Current   | $I_{FP}$  |      | 80   | mA   |               |
| Allowed Reverse Voltage | $I_R$     |      | 85   | mA   |               |
| Power Dissipation       | $P_D$     |      | 100  | mW   |               |
| Operation Temperature   | $T_{opr}$ | -30  | 85   | °C   |               |
| Storage Temperature     | $T_{stg}$ | -40  | 100  | °C   |               |
| Soldering Temperature * | $T_{sol}$ |      | 330  | °C   | within 2 sec. |

\* For Max.2 seconds at the position of 3mm from the package.

\* At PWB Flow Soldering unsupported.

#### Characteristics (at 25 °C)

| Parameter           | Symbol      | Min. | Typ.  | Max. | Unit | Test Conditions |
|---------------------|-------------|------|-------|------|------|-----------------|
| Forward Voltage     | $V_F$       | -    | (3.4) | 4.0  | V    | $I_F=10[mA]$    |
| Peak Wavelength * * | $\lambda_P$ | 360  | 365   | 370  | nm   | $I_F=10[mA]$    |

\* \* Peak Wavelength Measurement allowance is  $\pm 3nm$

### 2. Receiving Part

#### Absolute Maximum Ratings

| Parameter               | Symbol    | Min. | Max. | Unit | Remark        |
|-------------------------|-----------|------|------|------|---------------|
| Reverse Voltage         | $I_R$     |      | 30   | V    |               |
| Operation Temperature   | $T_{opr}$ | -25  | 90   | °C   |               |
| Storage Temperature     | $T_{stg}$ | -30  | 100  | °C   |               |
| Soldering Temperature * | $T_{sol}$ |      | 330  | °C   | within 2 sec. |

\* For Max. 2 seconds at the position of 3mm from the package.

\* At PWB Flow Soldering unsupported.

### Characteristics (at 25 °C)

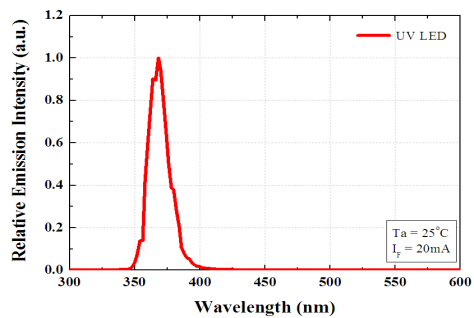
| Parameter                                  | Symbol            | Min. | Typ. | Max.  | Unit  | Test Conditions            |
|--------------------------------------------|-------------------|------|------|-------|-------|----------------------------|
| Short circuit current * *                  | I <sub>sc</sub>   | 40   | 160  | 180   | nA    | I <sub>F</sub> =10mA       |
| Current leak current * * *                 | I <sub>LEAK</sub> |      |      | 20    | nA    | I <sub>F</sub> =10mA       |
| Dark current                               | I <sub>d</sub>    |      |      | 10.0  | nA    | V <sub>R</sub> =10V        |
| Capacitance                                | C <sub>t</sub>    |      | 50   |       | pF    | V <sub>R</sub> =0V, f=1MHz |
| Temperature coefficient of V <sub>OC</sub> | α <sub>t</sub>    |      | -2.2 |       | mV/°C |                            |
| Temperature coefficient of I <sub>SC</sub> | β <sub>t</sub>    |      | 0.18 |       | %/°C  |                            |
| Spectral sensitivity                       | λ                 | 450  |      | 1,050 | nm    |                            |
| Peak wavelength                            | λ <sub>P</sub>    |      | 880  |       | nm    |                            |
| Half angle                                 | Δθ                |      | ±60  |       | deg.  |                            |

\* \* d=2.0mm, 90% Reflective paper

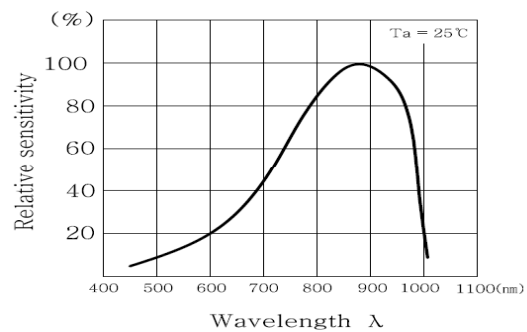
\* \* \* I<sub>LEAK</sub> @ No object, in dark

※ Anode is connected to case.

### 3. Characteristic spectrums



UV LED emission intensity



Responsivity of receiving sensor

### 4. Measurement conditions

- 1 cycle of test should be completed within 5 minutes.
- Left machine power-off at least 30 minute then for testing.
- To use the wordings side of Dummy.

\* This spec. sheet applied to GUVF-P12MD since August 20, 2012