

# Reflective UV Sensor

## GUVF-P12MD

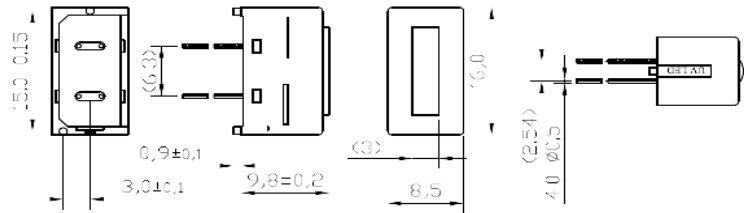


- Features**
- Light Emission Wavelength - 365nm
  - Emitting part- Visible range absorbing filter
  - Receiving part - UV absorbing filter
  - Responding to fluorescence ink



- 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)

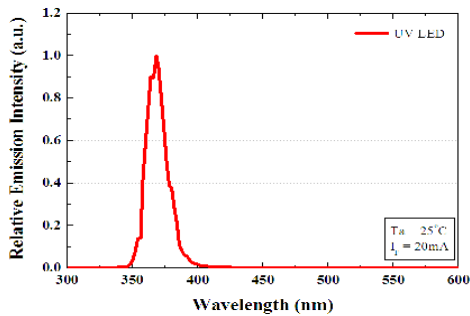
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Short circuit current **	I <sub>sc</sub>	40	160	180	nA	I <sub>F</sub> =10mA
Current leak current ***	I <sub>LEAK</sub>			20	nA	I <sub>F</sub> =10mA
Dark current	I <sub>d</sub>			10.0	nA	V <sub>R</sub> =10V
Capacitance	C <sub>t</sub>		50		pF	V <sub>R</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

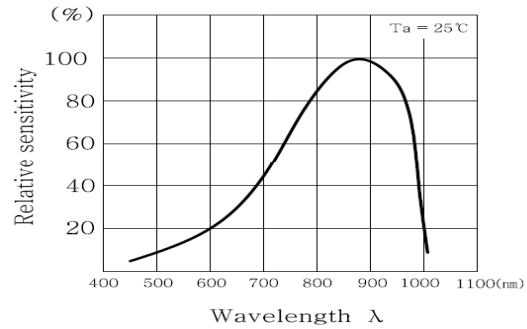
\*\*\* I<sub>LEAK</sub>@ No object, in dark

※ 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