



UV-A Sensor GUVA-S12GD-C

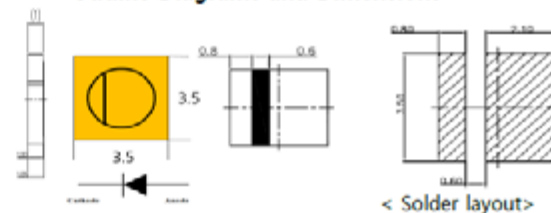


- Features**
- Gallium Nitride Based Material
 - Schottky-type Photodiode
 - Photovoltaic Mode Operation
 - Good Visible Blindness
 - High Responsivity & Low Dark Current
 - Ceramic Package



- Applications**
- UV-A Lamp Monitoring
 - UV Index Monitoring

Outline Diagrams and Dimensions



Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit	Remark
Storage Temperature	T_{st}	-40	90	$^{\circ}C$	
Operating Temperature	T_{op}	-30	85	$^{\circ}C$	
Reverse Voltage	$V_{r, max}$		5	V	
Forward Current	$I_{f, max}$		1	mA	
Optical Source Power Range	P_{opt}	0.01	100	mW/cm ²	UVA Lamp
Soldering Temperature	T_{sol}		260	$^{\circ}C$	within 10 sec.

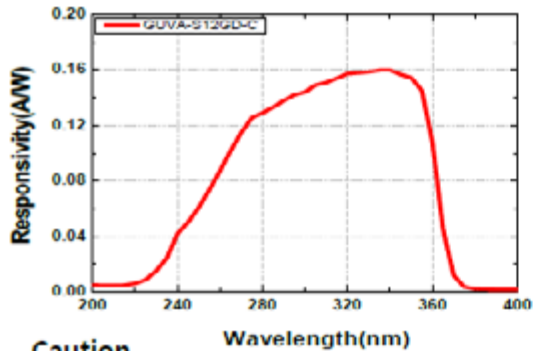
※Notice: apply to us in the case that Optical Source Power is over 100mW/cm²

Characteristics (at 25 $^{\circ}C$)

Parameter	Symbol	Min	Typ	Max	Unit	Test Conditions
Dark Current	I_d			1	nA	$V_r = 0.1V$
Photo Current	I_{ph}		118		nA	UVA Lamp, 1mW/cm ²
Temperature Coefficient	I_{tc}		0.08		%/ $^{\circ}C$	UVA Lamp
Responsivity	R		0.16		A/W	$\lambda = 350 \text{ nm}, V_r = 0 \text{ V}$
Spectral Detection Range	λ	230		370	nm	10% of R
Active Area			0.076		mm ²	
View angle	θ		120		$^{\circ}$	Defined as the minimum value of the maximum angle of incidence, as measured from the normal to the detector window, of a ray the reaches the center of the photo-

						sensitive portion of the detector without being blocked by any portion of the component packaging
UVA irradiation responsivity variation after 50kJ/cm ² of UVA irradiation	tbd		±2	±3	%	Between 340 and 350nm
Nonlinearity	tbd		±1	±2	%	Maximum deviation from a linear behavior evaluated between 1 and 20 mW/cm ²
Responsivity wavelength sensitivity	tbd		0.2		%/nm	Slope of the responsivity curve with respect to wavelength evaluated between 340nm and 350nm

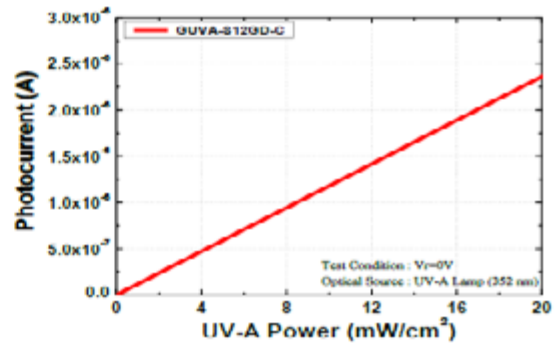
Responsivity Curve



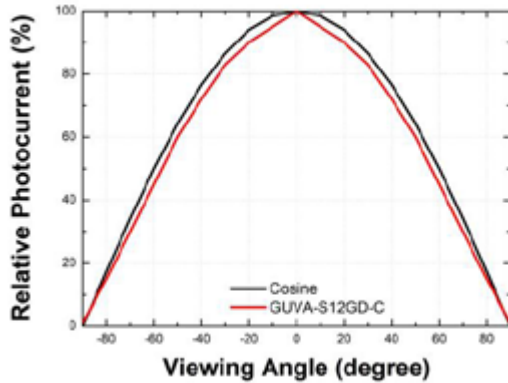
Caution

ESD can damage the device hence please avoid ESD.

Photocurrent along UV Power



Viewing angle



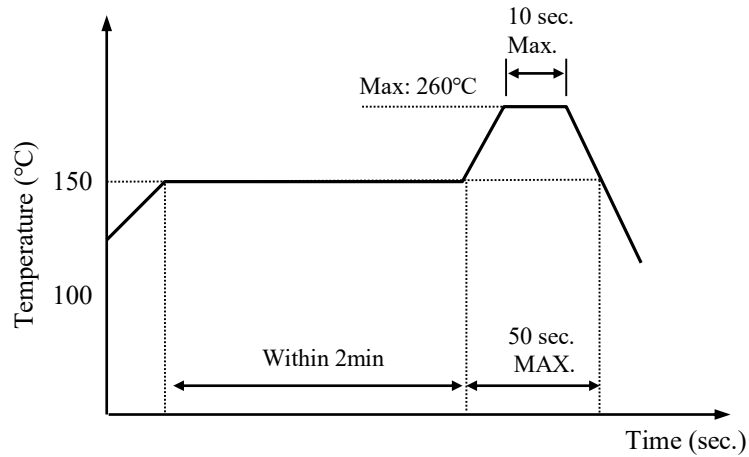
Electrostatic discharge sensitivity

Parameter	Level	Test Conditions
HBM	HBM 400V Classification : Class 0A	HBM : 250Vto< 500V (Pass 250 and fails 500V)
CDM	CDM:3000V Classification : C6	CDM : CLASS IV \geq 1000V 3000V
MSL	MSL 1 Level	Soak : 85°C 85% RH, 168 hrs

Compliances:

RoHs	Compliant
CoC	A Certificate of Compliance (CoC) or any equivalent document must be issued and accompany each lot in every shipment. A clear statement on the CoC must certify that the parts delivered are compliant to all minimum requirements defined in the present document. The CoC must refer to the name and revision of this present document.
CHANGE NOTIFICATION	Changes to product or components will not be made without prior notification to and approval from INO. This includes the following types of changes, but is not limited to: <ul style="list-style-type: none"> • Design changes; • Packaging changes; • Production process or product composition changes that affect the design and/or production specifications; • Change of manufacturing or service facility location; • Changes that have a significant impact upon your quality system; • Changes to regulatory status (includes environmental compliance status); • Product datasheet or specification sheet (including revision) changes • Product obsolescence

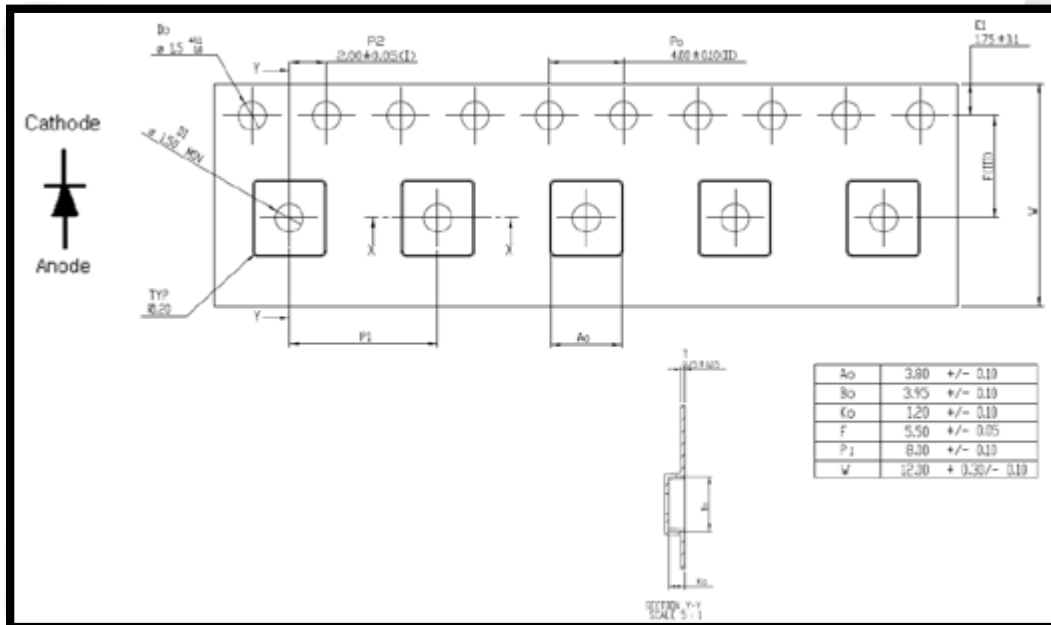
Reflow Soldering Characteristics



Recommended Reflow Soldering Profile

- Temperature : Max. 260°C
- Time : Max. 10 sec.
- Caution : You must put to earth and shield the package from ESD damage.
(eg.: wrist strap or anti-electrostatic gloves)

Emitter Tape & Reel Packaging



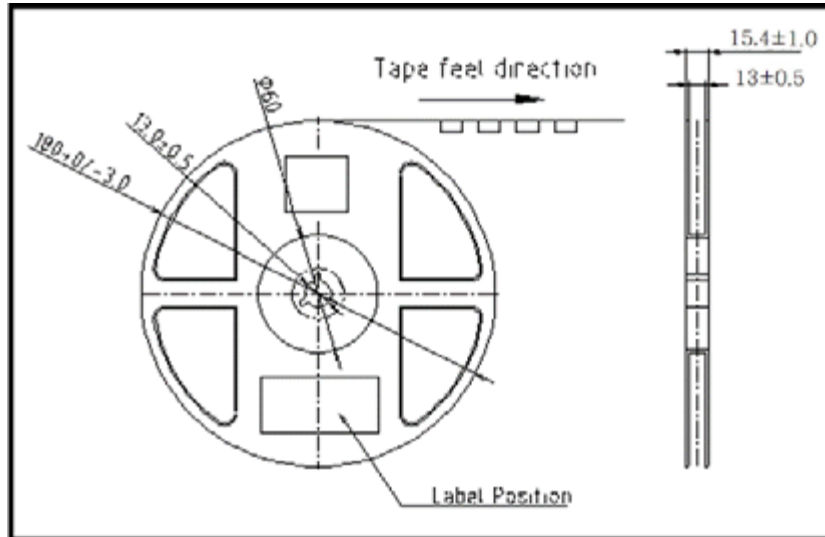


Diagram and Standardization of Reel



- 1) Quantity : 12mm tape with 1,500EA/reel
- 2) Label : Model No., Lot Number, Quantity
- 3) The packing materials such as reel, carrier tape, cover tape and shielding bag are antistatic.

Product Nomenclature & Binning

【 Eg.】: UAG- 2308 – 001

UAG : Product Model (UVA Detector with SMD 3535)

2308 : Product Year and Month (23 : 2023, 08 : August)

001 : Consecutive number

Binning : 4W UVA Lamp, Optical power : 1 mW/cm^2 , Iph Average : 118nA, Tolerance : +/- 10%

Bin	Photo current(nA)	
	min	max
Low	88	106
Main	107	130
High	131	159

- Products are shipped in the main rank section

Handling of Sensors

- In case of cleaning, use only IPA.
- To be kept under clean environment. For more than 3months storage, put in sealed containers.
- It should be soldered within 7days after opening a seal.
- Use a wrist strap or anti-electrostatic gloves for handling, to protect from a static electricity and surge.
- If you operate it over the absolute maximum ratings, that may cause a permanent damage.
- It can be damaged by working environment which is not shielded from a static electricity.
- Damaged products show unusual characteristics such as large leakage current, or do not work.

Precaution for Use

- Limit access to areas where UV sources are used.
- Post warning signs at the entrance to labs or other work areas using UV sources.
- Wear protective eyewear and gloves.
 - Wear sunglasses that absorb 99-100% of the full UV spectrum.
 - Wear clothing that covers the body and shades the face.
- Cover arms and neck and limit exposure time
- Never look directly at the beam.
- Use a manual or electronic shutter to close the beam when the source is not in use.
- Use enclosed beam paths where possible.