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GUVA-S12SD

Genuine UV Technology genUV

UV Index or UV Lamp Monitoring

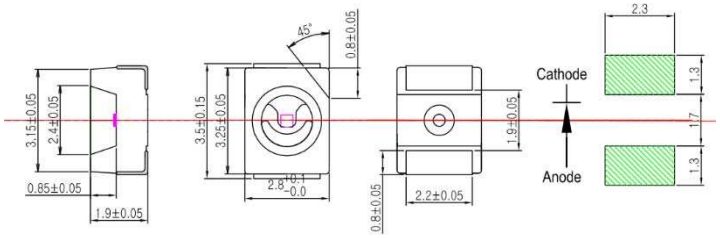
➢ Features

- Gallium Nitride Based Material
- Schottky Type Photodiode
- Photovoltaic Mode Operation
- Good Visible Blindness
- High Responsivity & Low Dark Current
- Chip Size : 0.4㎜ × 0.4㎜ (Active Area : 0.076㎟)
- SMD Type (Si Encapsulant)

➢ Applications

- UV Index Monitoring on Portable Device (Mobile Phone..)
- UV-A Lamp Monitoring
- UV LED Monitoring (< 360nm)
- UV Curing

➢ Package Dimension



➢ Absolute Maximum Rating

Parameter	Symbol	Min.	Max.	Unit	Remark
Storage Temperature	T_{st}	-40	90	℃	
Operating Temperature	T_{op}	-30	85	℃	
Reverse Voltage	$V_{r,\ max.}$		5	V	Ir=1 μA
Forward Current	$I_{f,max.}$		1	mA	
Soldering Temperature	T_{sol}		260	℃	within 10 sec.

➢Electro-Optical Characteristics (at 25℃, RT)

Parameter	Min.	Typ.	Max.	Unit
Dark Current (Vr=1V)			1	nA
Photo Current (1 ㎽/㎠ of UVA lamp)	101	113	125	nA
Photo Current (1 UVI, offset 83nA)		21		nA
Peak Responsivity (352nm)		0.14		A/W
Spectral Detection Range	240		370	nm
Viewing Angle		100		°
Temperature Coefficient		0.08		%/℃
Bias Capacitance (@Vr = 0V)		~ 100		pF
Shunt resistance		~ Middle x 10^10		Ω
Series resistance		~ Low x 10^2		Ω

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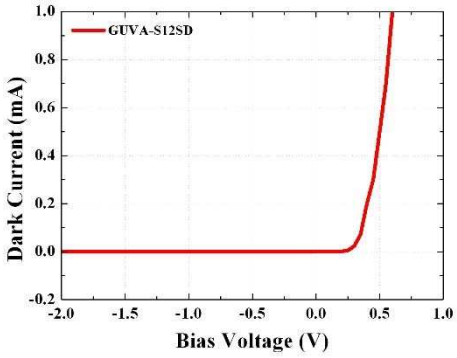
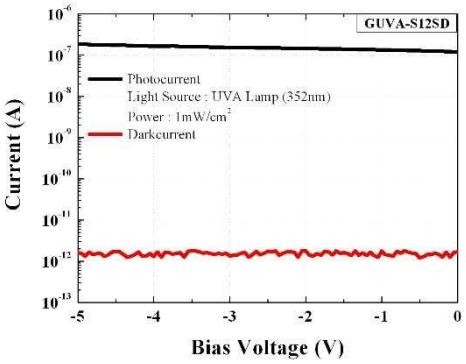
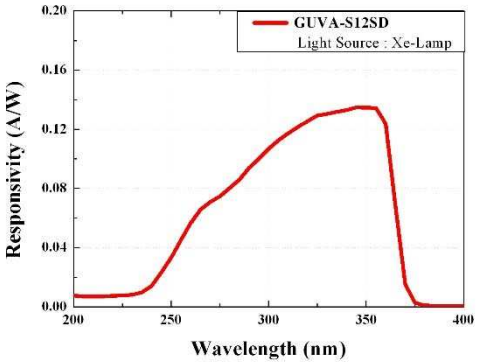
➢ Characteristic Curve

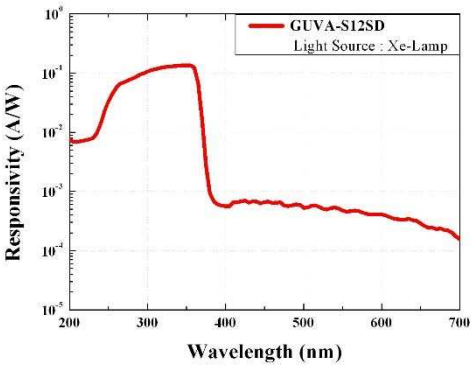
- I-V Curve



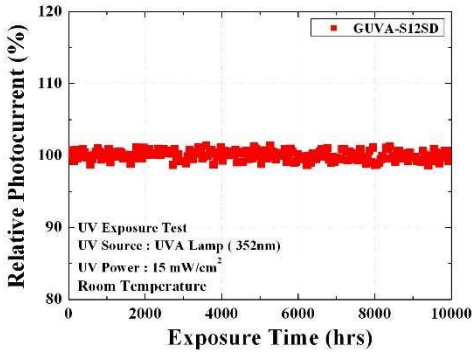


- Responsivity Curve

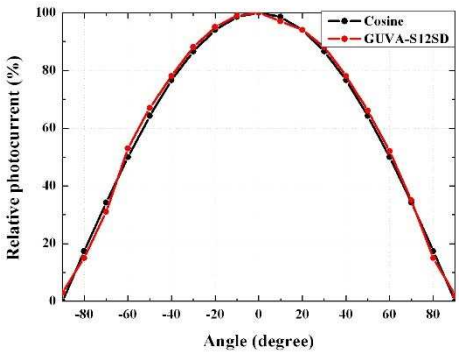




- Reliability due to UV Exposure



- Angular Response



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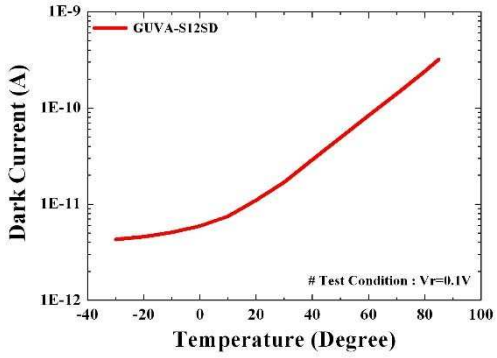
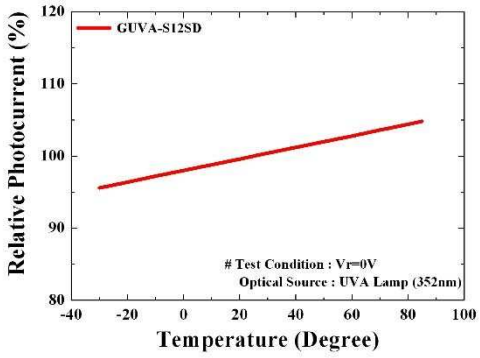
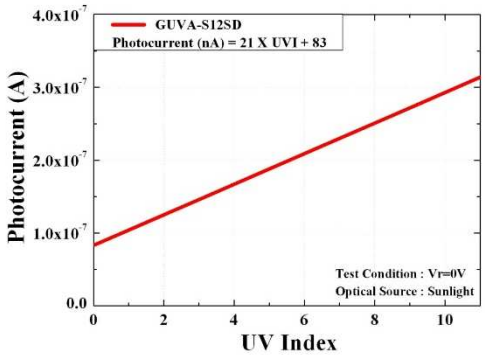
➢ Characteristic Curve

▪ Temperature Dependence (Dark Current & Photo Current)

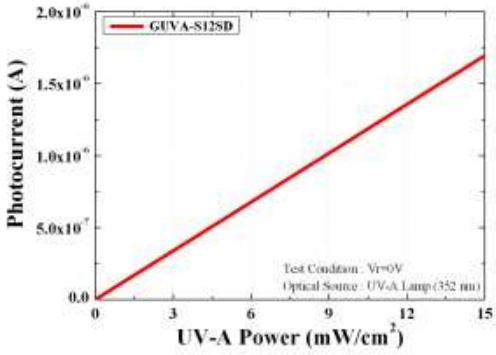




▪ Photocurrent along UV Index



▪ Photocurrent along UVA Power



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UV Index or UV Lamp Monitoring

➢ Application Circuit

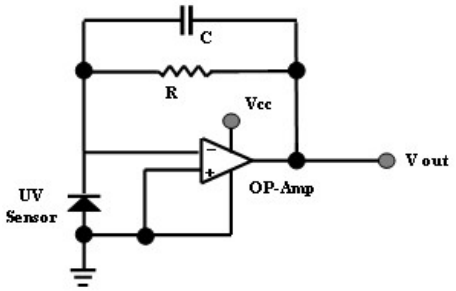
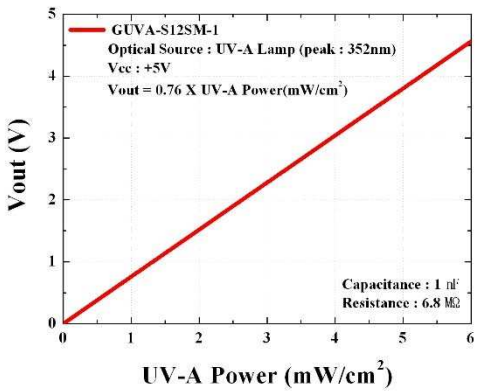
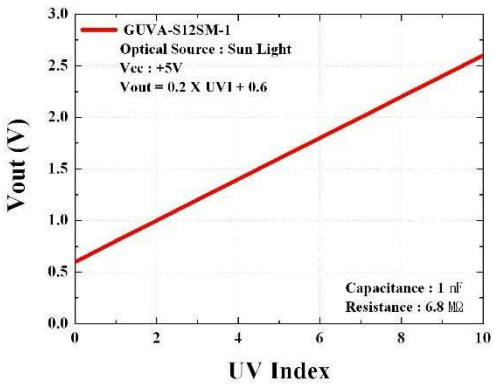


Fig. 1. Application Circuit (Basic)

Name	Part No.	Function	Model or Value	Remark
OP-Amp	OP-Amp	Amplification	MCP6241 (Microchip Technology)	Vcc : 1.8 ~ 5.5V
Capacitor	C	Decreasing the Input Noise	1 nF	Capacitor Controls Response Time
Resistor	R	Gain Control	6.8 MΩ	Gain : R

* Output Voltage = Gain × Photo Current





Address : 273, Baeul 1-ro, Yuseong-gu, Daejeon, 34036 Korea
Tel. : +82-42-862-3982
Fax. : +82-42-862-2982
Homepage : http://www.geni-uv.com
E-mail : uvsensor@geni-uv.com