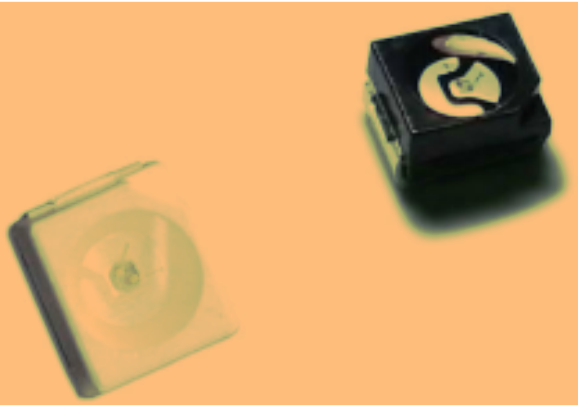
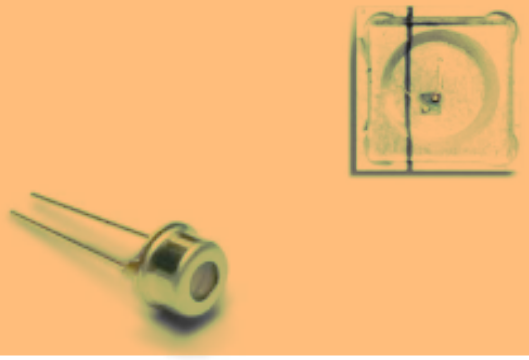
UV Photodiode



UV Sensor



UVセンサーカタログ

raytron

レイトロン株式会社

UV Sensor
Selection Guide

UV Wavelength

- U V - V (230~395nm)
- U V - A (230~370nm)
- U V - B (220~320nm)
- U V - C (220~280nm)
- B L U E (345~470nm)
- GREEN (300~510nm)

Applications

- UV Curing
- Air Purification
- Water Sterilization
- Flame sensing
- High Temperature
- Outdoor Irradiance
- UV LED Monitoring
- UV LAMP Monitoring
- UV Index Monitoring

UV Optical source

- How many Lamps in operation ?
- Optical power of UV ?
- UV Source ?
  - Hg UV Low Pressure Lamp
  - Hg UV Medium Pressure Lamp
  - UV LED
  - Flame (Spark, Arc)
  - Other
- Distance of UV Lamp and Sensor ?
- Operating Temperature ?

Output Type

- Digital (UV Index (1~11+))
- Voltage (0~5V)
- Current (4~20mA)

Items

- Epi Wafer
- UV Photodiode
- UV Sensor Probe
- UV Radiometer
- Connection Cable (m)
- Data Logger
- Test Module
- Test Jig and Lamp
- Reference Meter

G UVA – T1 1 G D - L

① ② ③ ④ ⑤ ⑥ ⑦

① Manufacture

- **G** : Genicom Co., Ltd.

② Detection Range

- **VGR** : ~ 510 nm
- **VBL** : ~ 470 nm
- **UVV** : ~ 395 nm
- **UVA** : ~ 370 nm
- **UVB** : ~ 320 nm
- **UVC** : ~ 280 nm

③ Package Form

- **S1** : SMD3528
- **S3** : SMD3535
- **C2** : COB2418
- **C3** : COB2023
- **T1** : TO-46
- **T2** : TO-39 & TO-5

④ Characteristics

- From 0 to 9 or A to Z

⑤ Window Type

- **G** : Quartz Glass
- **S** : Si-encapsulant
- **E** : Epoxy

⑥ Product Type

- **D** : Discrete
- **H** : Hybrid

⑦ Chip Size

- **Skip** : 0.23 x 0.23 mm^2
- **Skip** : 0.4 x 0.4 mm^2
- **L** : 1.4 x 1.4 mm^2
- **U** : 3.4 x 3.4 mm^2

UV Sensor
Products

UV Sensor Component

Category		Visible		UVV				UVA					
Wavelength (nm)		Blue	~ 470	~ 395				~ 370					
		Green	~ 510										
Product Image													
PKG Type		SMD	TO	SMD	TO	TO	TO	COB	SMD	SMD	TO	TO	TO
		3528	46	3528	46	39	5	2418	3535	3528	46	39	5
Chip Size / Active Area (㎟)	0.23 / 0.016	Small	Small										
	0.4 / 0.076			STD.	STD.		STD.	STD.	STD.	STD.	STD.		STD.
	1.4 / 1.536				Large						Large		
	3.4 / 6.894					Ultra Large						Ultra Large	
Responsivity	Peak (nm)	Blue: 405	Green: 385	355				360					
Application	Wearable (UV Index)							●		●			
	UV Index							●		●			
	UV Curing			●	●	●	●		●		●	●	●
	Sterilization										●		●
Output	Current	nA	nA	nA	nA	μA		nA	nA	nA	nA	μA	
	Voltage						V						V
	Digital												
Optical Source Power range	Min(μW/㎠)	0.1	0.1	0.1	0.1 / 0.01	0.001	-	0.1	0.1	0.1	0.1 / 0.01	0.001	-
	Max(mW/㎠)	100	100	100	100	100	-	100	100	100	100	100	-
Angle of Incidence(°)		100	60	100	60	60	60	120	150	100	60	60	60

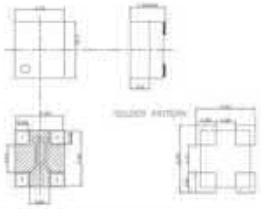
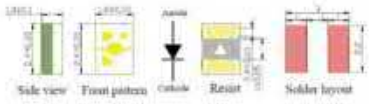
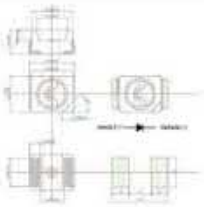
Category		UVB						UVC				Digital	
Wavelength (nm)		~ 320						~ 280				~ 370	~ 320
Product Image													
PKG Type		COB	SMD	SMD	TO	TO	TO	SMD	TO	TO	TO	COB	COB
		2418	3535	3528	46	39	5	3535	46	39	5	2023	2023
Chip Size / Active Area (㎟)	0.23 / 0.016											Small	Small
	0.4 / 0.076	STD.	STD.	STD.	STD.		STD.	STD.	STD.		STD.		
	1.4 / 1.536				Large				Large				
	3.4 / 6.894					Ultra Large				Ultra Large			
Responsivity	Peak (nm)	305						265				355	305
Application	Wearable (UV Index)	●		●								●	●
	UV Index	●		●	●	●	●					●	●
	UV Curing		●										
	Sterilization							●	●	●	●		
Output	Current	nA	nA	nA	nA	μA		nA	nA	μA			
	Voltage						V				V		
	Digital											0-11+	0-11+
Optical Source Power range	Min(μW/㎠)	1	0.1	1	0.1 / 0.01	0.001	-	0.1 / 0.01	0.1 / 0.01	0.001	-	Sunlight	
	Max(mW/㎠)	100	100	100	100	100	-	100	100	100	-		
Angle of Incidence(°)		120	150	100	60	60	60	150	60	60	60	120	120

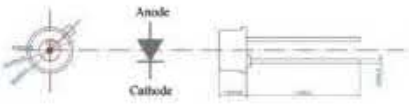
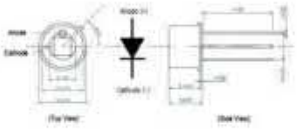
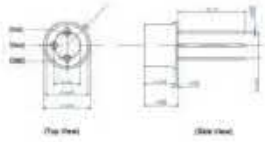
UV Sensor
Products

Product of UV Sensor according to detection range

Division	Package Type	Product Name	Detection Range	Appliance
UVV	TO 46	GUVV-T10GD	230nm ~ 395nm	Full UV Band Monitoring, UV-A Lamp Monitoring UV LED Monitoring (< 390nm) UV Curing, Counterfeit Detector
	SMD 3528	GUVV-S10SD	240nm ~ 395nm	
UVA	TO 46	GUVA-T11GD	220nm ~ 370nm	UV Index Monitoring UV-A Lamp Monitoring Sterilization Lamp (UV-C Lamp) Monitoring UV LED Monitoring (< 360nm) UV Curing
	SMD 3528	GUVA-S12SD	240nm ~ 370nm	UV Index Monitoring on Portable Device (Mobile Phone..) UV-A Lamp Monitoring, UV LED Monitoring (< 360nm)
	COB 3224	GUVA-C22SD	240nm ~ 370nm	
UVB	TO 46	GUVB-T11GD	220nm ~ 320nm	UV Index monitoring for Precise Application UV-B Lamp Intensity Monitoring UV LED Monitoring
	SMD 3528	GUVB-S11SD	240nm ~ 320nm	
	SMD 3535	GUVB-S31GD	240nm ~ 320nm	
	COB 3224	GUVB-C21SD	240nm ~ 320nm	
UVC	TO 46	GUVC-T10GD	220nm ~ 280nm	Sterilization Lamp (UV-C Lamp) Monitoring (UV Water Sterilization, UV Air Purification) Flame Sensing
	SMD 3535	GUVC-S10GD		

Package type of UV Sensor components

Type	Package name	PKG Image
COB	COB 2023	
	COB 2418	
SMD	SMD 3528	

Type	Package name	PKG Image
TO	TO 46	
	TO 39	
	TO 5	

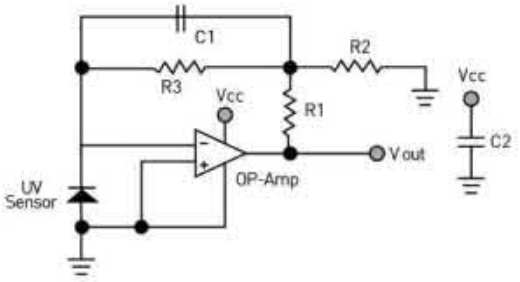
UV Photodiodes

Operation Information

Absolute Maximum Ratings

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	
Forward Current	$I_{f,max}$	0.1μ	1	mA	
Optical Source Power Range	P_{opt}		100m	W/㎠	UVA Lamp
Soldering Temperature	T_{sol}		260	℃	within 10 sec.

Application Circuit



Part No.	Model or Value	Function	Remark
UV Sensor	UV Index : GUVA-S12SD, GUVB-S11GD UV LED monitoring : GUVV-S10SD Sterilization : GUVC-T10GD	UV Sensing	Anode connects to ground.
Op-Amp	MCP6241 (Vcc=1.8 ~ 5.5 V) LMC6081 (Vcc=4.5 ~ 15 V) OPA237 (Vcc=2.7 ~ 36 V)	Amplification	Input Offset Current < 1 nA
C1	1 nF	Decreasing the input noise	Decrease the value for fast response (e.g. 100 pF), Increase the value for small error (e.g. 10 nF)
C2	0.1μF	Stabilization of power	Internal voltage of capacitor > Vcc
R1, 2, 3	GUVA-S12SD : R3=6.8MΩ, R1=0Ω, R2=X GUVB-S11GD : R3=10MΩ, R1=11kΩ, R2=1kΩ GUVC-T10GD : R3=7.5MΩ, R1=0Ω, R2=X	Decide the output voltage	Gain : R3 × (1+R1/R2)

UV / Visible Sensor

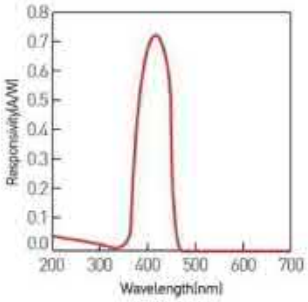
GVBL-S12SD

Features

SMD3528 with Si-encapsulant
Indium Gallium Nitride Based Material
PN-type Photodiode
Photovoltaic Mode Operation
High Responsivity & Low Dark Current

Applications

UV LED Monitoring (385, 405nm, etc.)
Blue LED Monitoring
UVA Lamp Monitoring
UV Curing



Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			1	nA	Vr = 0.1 V
Photo Current	I_{ph}		90		nA	UVA (352nm), 1mW/cm²
			790			405nm LED, 1mW/cm²
Responsivity	R		0.68		A/W	λ= 405nm, Vr = 0 V
Spectral Detection Range	λ	345		450	nm	10% of R

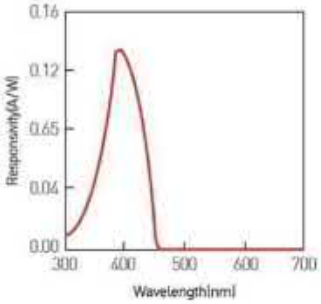
GVBL-T12GD

Features

TO-46 with quartz glass
Indium Gallium Nitride Based Material
PN-type Photodiode
Photovoltaic Mode Operation
High Responsivity & Low Dark Current

Applications

UV LED Monitoring (385, 405nm, etc.)
Blue LED Monitoring
UVA Lamp Monitoring
UV Curing



Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			1	nA	Vr = 0.1 V
Photo Current	I_{ph}		550		nA	LED (385nm), 1mW/cm²
Responsivity	R		0.13		A/W	λ= 385nm, Vr = 0 V
Spectral Detection Range	λ	330		445	nm	10% of R

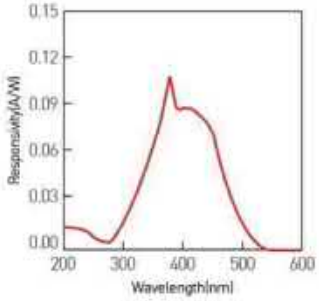
GVGR-S11SD

Features

SMD3528 with Si-encapsulant
Indium Gallium Nitride Based Material
PN-type Photodiode
Photovoltaic Mode Operation
High Responsivity & Low Dark Current

Applications

UV LED Monitoring (385, 405nm, etc.)
Blue LED Monitoring
UVA Lamp Monitoring
UV Curing



Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			1	nA	Vr = 0.1 V
Photo Current	I_{ph}		44		nA	LED (405nm), 1mW/cm²
Responsivity	R		0.07		A/W	λ= 405nm, Vr = 0 V
Spectral Detection Range	λ	295		490	nm	10% of R

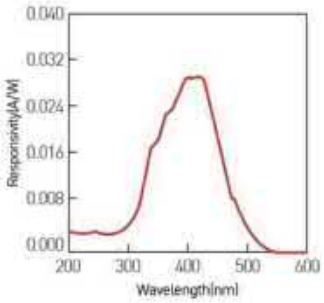
GVGR-T10GD

Features

TO-46 with quartz glass
Indium Gallium Nitride Based Material
PN-type Photodiode
Photovoltaic Mode Operation
High Responsivity & Low Dark Current

Applications

UV LED Monitoring (385, 405nm, etc.)
Blue LED Monitoring
UVA Lamp Monitoring
UV Curing



Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			1	nA	Vr = 0.1 V
Photo Current	I_{ph}		11		nA	LED (405nm), 1mW/cm²
Temperature Coefficient	Tc		-0.08		%/℃	
Responsivity	R		0.026		A/W	λ= 405nm, Vr = 0 V
Spectral Detection Range	λ	300		510	nm	10% of R

UV-V Sensor

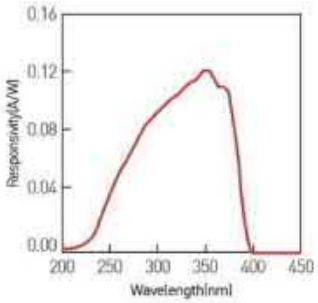
GUVV-T10GD

Features

Indium Gallium Nitride Based Material
Schottky-type Photodiode
Photovoltaic Mode Operation
High Responsivity & Low Dark Current

Applications

UVA Lamp Monitoring
Full UV Band Monitoring
Sterilization Lamp Monitoring



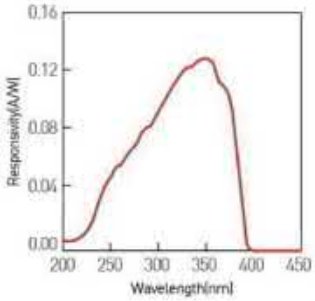
Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			1	nA	Vr = 0.1 V
Photo Current	I_{ph}	147	163	179	nA	UVA Lamp, 1mW/cm²
Temperature Coefficient	I_{tc}		0.1		%/℃	UVA Lamp
Responsivity	R		0.12		A/W	λ= 350nm, Vr = 0 V
Spectral Detection Range	λ	230		395	nm	10% of R
Active area			0.076		mm²	

GUVV-T10GD-L

Characteristics (at 25℃)

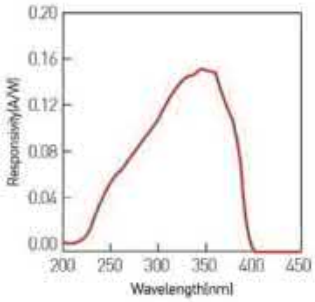
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			20	nA	Vr = 0.1 V
Photo Current	I_{ph}	2.34	2.6	2.86	μA	UVA Lamp, 1mW/cm²
Temperature Coefficient	I_{tc}		0.1		%/℃	UVA Lamp
Responsivity	R		0.13		A/W	λ= 350nm, Vr = 0 V
Spectral Detection Range	λ	230		395	nm	10% of R
Active area			1.536		mm²	



GUVV-T20GD-U

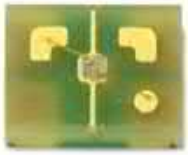
Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			90	nA	Vr = 0.1 V
Photo Current	I_{ph}	13.2	14.7	16.1	μA	UVA Lamp, 1mW/cm²
Temperature Coefficient	I_{tc}		0.1		%/℃	UVA Lamp
Responsivity	R		0.15		A/W	λ= 352nm, Vr = 0 V
Spectral Detection Range	λ	230		395	nm	10% of R
Active area			6.894		mm²	



UV-A Sensor

GUVA-C22SD

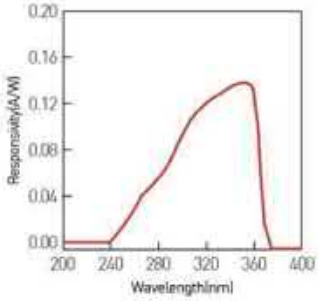


Features

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

Applications

UV Index Monitoring
UVA Lamp Monitoring



Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			1	nA	Vr = 0.1 V
Photo Current	I_{ph}	101	113	125	nA	UVA Lamp, 1mW/cm²
			17		nA	1 UVI
Temperature Coefficient	I_{tc}		0.08		%/℃	UVA Lamp
Responsivity	R		0.14		A/W	λ= 350nm, Vr = 0 V
Spectral Detection Range	λ	240		370	nm	10% of R
Active area			0.076		mm²	

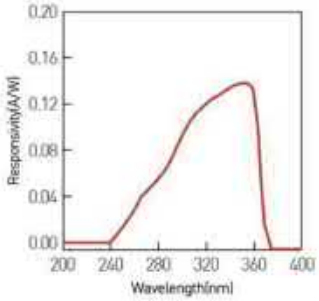
GUVA-S12SD

Features

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

Applications

UV Index Monitoring
UVA Lamp Monitoring



Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			1	nA	Vr = 0.1 V
Photo Current	I_{ph}	101	113	125	nA	UVA Lamp, 1mW/cm²
			21		nA	1 UVI
Temperature Coefficient	I_{tc}		0.08		%/℃	UVA Lamp
Responsivity	R		0.14		A/W	λ= 350nm, Vr = 0 V
Spectral Detection Range	λ	240		370	nm	10% of R
Active area			0.076		mm²	

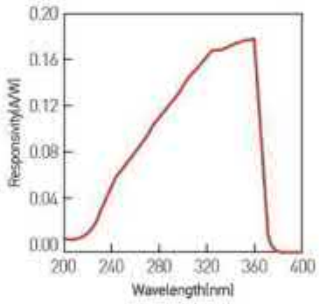
GUVA-T11GD

Features

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

Applications

Full UV Band Monitoring
UV Index Monitoring
UVA Lamp Monitoring



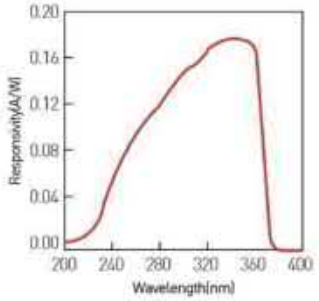
Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			1	nA	Vr = 0.1 V
Photo Current	I_{ph}	145	161	177	nA	UVA Lamp, 1㎽/㎠
			93		nA	UVC Lamp, 1㎽/㎠
Temperature Coefficient	I_{tc}		0.05		%/℃	UVA Lamp
Responsivity	R		0.18		A/W	λ= 350㎚, Vr = 0 V
Spectral Detection Range	λ	220		370	㎚	10% of R
Active area			0.076		㎟	

GUVA-T11GD-L

Characteristics (at 25℃)

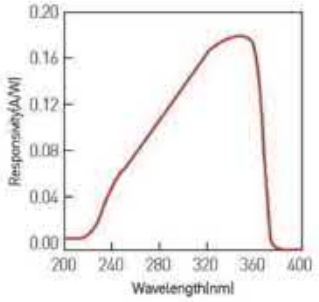
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			20	nA	Vr = 0.1 V
Photo Current	I_{ph}	2.8	3.1	3.4	μA	UVA Lamp, 1㎽/㎠
Temperature Coefficient	I_{tc}		0.05		%/℃	UVA Lamp
Responsivity	R		0.18		A/W	λ= 350㎚, Vr = 0 V
Spectral Detection Range	λ	220		370	㎚	10% of R
Active area			1.536		㎟	



GUVA-T21GD-U

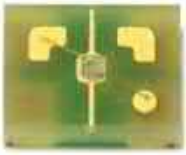
Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			90	nA	Vr = 0.1 V
Photo Current	I_{ph}	14.1	15.6	17.1	μA	UVA Lamp, 1㎽/㎠
Temperature Coefficient	I_{tc}		0.05		%/℃	UVA Lamp
Responsivity	R		0.18		A/W	λ= 350㎚, Vr = 0 V
Spectral Detection Range	λ	220		370	㎚	10% of R
Active area			6.894		㎟	



UV-B Sensor

GUVB-C21SD

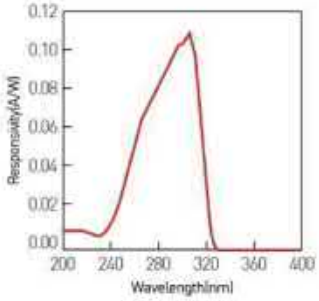


Features

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

Applications

UV Index Monitoring



Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			1	nA	Vr = 0.1 V
Photo Current	I_{ph}	64	71	78	nA	UVB Lamp, 1mW/㎠
			1.4		nA	1 UVI
Temperature Coefficient	I_{tc}		0.1		%/℃	UVB Lamp
Responsivity	R		0.11		A/W	λ= 300nm, Vr = 0 V
Spectral Detection Range	λ	240		320	nm	10% of R
Active area			0.076		㎟	

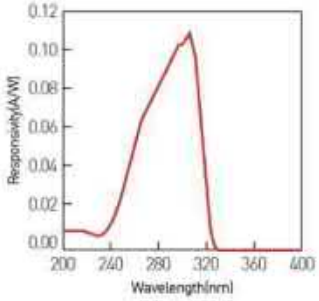
GUVB-S11SD

Features

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

Applications

UV Index Monitoring



Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			1	nA	Vr = 0.1 V
Photo Current	I_{ph}	62	69	75	nA	UVB Lamp, 1mW/㎠
			1.4		nA	1 UVI
Temperature Coefficient	I_{tc}		0.1		%/℃	UVB Lamp
Responsivity	R		0.11		A/W	λ= 300nm, Vr = 0 V
Spectral Detection Range	λ	240		320	nm	10% of R
Active area			0.076		㎟	

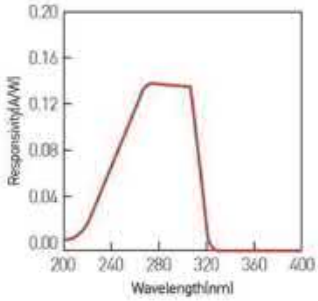
GUVB-T11GD

Features

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

Applications

UV Index Monitoring
UVB Lamp Monitoring



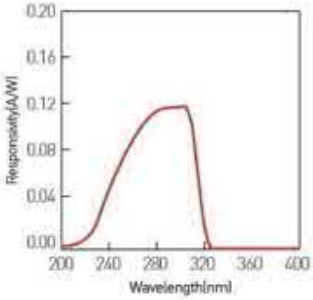
Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			1	nA	Vr = 0.1 V
Photo Current	I_{ph}	69	76	84	nA	UVB Lamp, 1mW/cm²
			1.7		nA	1 UVI
Temperature Coefficient	I_{tc}		0.1		%/℃	UVB Lamp
Responsivity	R		0.13		A/W	λ= 300nm, Vr = 0 V
Spectral Detection Range	λ	220		320	nm	10% of R
Active area			0.076		mm²	

GUVB-T11GD-L

Characteristics (at 25℃)

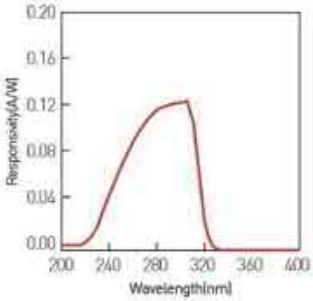
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			20	nA	Vr = 0.1 V
Photo Current	I_{ph}	1.35	1.5	1.65	μA	UVB Lamp, 1mW/cm²
Temperature Coefficient	I_{tc}		0.1		%/℃	UVB Lamp
Responsivity	R		0.13		A/W	λ= 300nm, Vr = 0 V
Spectral Detection Range	λ	220		320	nm	10% of R
Active area			1.536		mm²	



GUVB-T21GD-U

Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			90	nA	Vr = 0.1 V
Photo Current	I_{ph}	6.7	7.4	8.1	μA	UVB Lamp, 1mW/cm²
Temperature Coefficient	I_{tc}		0.1		%/℃	UVB Lamp
Responsivity	R		0.13		A/W	λ= 300nm, Vr = 0 V
Spectral Detection Range	λ	220		320	nm	10% of R
Active area			6.894		mm²	



UV-C Sensor

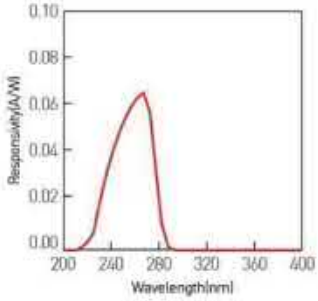
GUVC-T10GD

Features

Aluminium Gallium Nitride Based Material
Schottky-type Photodiode
Photovoltaic Mode Operation
Good Solar Blindness
High Responsivity & Low Dark Current

Applications

Pure UVC Monitoring
Sterilization Lamp Monitoring



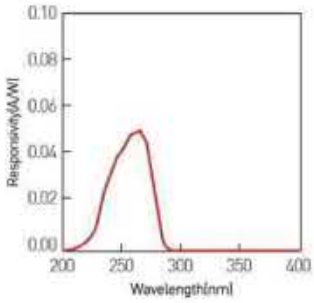
Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			1	nA	Vr = 0.1 V
Photo Current	I_{ph}	31	34	38	nA	UVC Lamp, 1㎽/㎠
Temperature Coefficient	I_{tc}		-0.07		%/℃	UVC Lamp
Responsivity	R		0.06		A/W	λ= 254㎚, Vr = 0 V
Spectral Detection Range	λ	220		280	㎚	10% of R
Active area			0.076		㎟	

GUVC-T10GD-L

Characteristics (at 25℃)

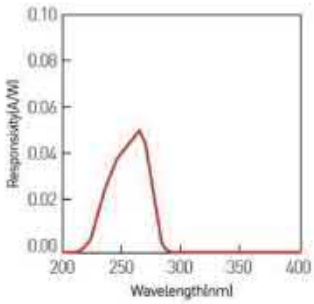
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			20	nA	Vr = 0.1 V
Photo Current	I_{ph}	0.5	0.55	0.6	μA	UVC Lamp, 1㎽/㎠
Temperature Coefficient	I_{tc}		-0.07		%/℃	UVC Lamp
Responsivity	R		0.05		A/W	λ= 254㎚, Vr = 0 V
Spectral Detection Range	λ	220		280	㎚	10% of R
Active area			1.536		㎟	



GUVC-T20GD-U

Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			90	nA	Vr = 0.1 V
Photo Current	I_{ph}	2.95	3.25	3.55	μA	UVC Lamp, 1㎽/㎠
Temperature Coefficient	I_{tc}		-0.07		%/℃	UVC Lamp
Responsivity	R		0.06		A/W	λ= 254㎚, Vr = 0 V
Spectral Detection Range	λ	220		280	㎚	10% of R
Active area			6.894		㎟	



UV Sensor / SMD Metal PKG

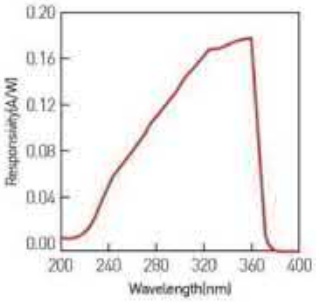
GUVA-S31GD

Features

Aluminium Gallium Nitride Based Material
Schottky-type Photodiode
Photovoltaic Mode Operation
Good Solar Blindness
High Responsivity & Low Dark Current

Applications

UVA Lamp Monitoring
UV Index Monitoring



Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			1	nA	Vr = 0.1 V
Photo Current	I_{ph}	145	161	177	nA	UVA Lamp, 1�W/㎠
Temperature Coefficient	I_{tc}		0.05		%/℃	UVA Lamp
Responsivity	R		0.18		A/W	λ= 350㎚, Vr = 0 V
Spectral Detection Range	λ	220		370	㎚	10% of R
Active area			0.076		㎟	

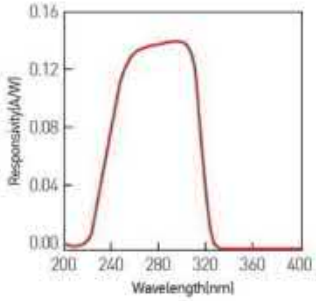
GUVB-S31GD

Applications

UVB Lamp Monitoring
UV Index Monitoring

Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			1	nA	Vr = 0.1 V
Photo Current	I_{ph}	73	80	88	nA	UVB Lamp, 1�W/㎠
			1.8			1UVI
Temperature Coefficient	I_{tc}		0.1		%/℃	UVB Lamp
Responsivity	R		0.14		A/W	λ= 300㎚, Vr = 0 V
Spectral Detection Range	λ	220		320	㎚	10% of R
Active area			0.076		㎟	



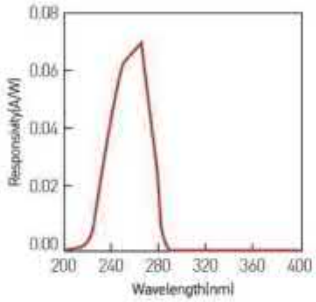
GUVC-S10GD

Applications

Pure UVC Monitoring
Sterilization Lamp Monitoring

Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			1	nA	Vr = 0.1 V
Photo Current	I_{ph}	35	39	42	nA	UVC Lamp, 1�W/㎠
Temperature Coefficient	I_{tc}		-0.07		%/℃	UVC Lamp
Responsivity	R		0.07		A/W	λ= 254㎚, Vr = 0 V
Spectral Detection Range	λ	220		280	㎚	10% of R
Active area			0.076		㎟	



UV Sensor with Amplified Voltage Output

GUVx-T1xGH

Features

Single Supply Voltage Operation
Amplified Voltage Output
High Sensitivity and Good Solar Blindness
Small and Compact Size

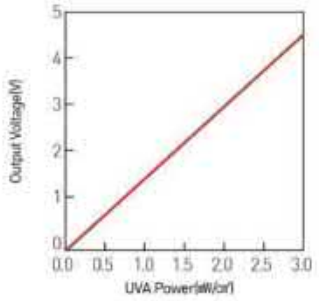
Common Condition

Parameter	Min.	Typ.	Max.	Unit	Remark
Operating Temperature	-30	-	90	℃	
Storage Temperature	-25	-	85	℃	
Supply Voltage	1.8	-	5.5	V	DC
Supply Current	-	50	-	μA	
Response Time	-	5	-	ms	

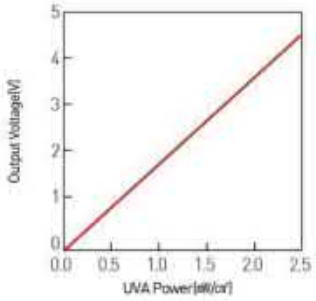
Characteristics (at 25℃)

Model No.	Detection Range	Output Voltage (Typ. @1㎽/㎠)	Detection Power Range (㎽/㎠ @Vcc=5V)	Application	Remark
GUVV-T21GH	230 ~ 395 ㎚	1.55V	0 ~ 3.22	UV LED Monitoring	352 ㎚
GUVA-T21GH	220 ~ 370 ㎚	1.88V	0 ~ 2.7	UV Cure & UVA Lamp Monitoring	352 ㎚
GUVB-T21GH	220 ~ 320 ㎚	0.72V	0 ~ 6.9	UVB Lamp Monitoring	306 ㎚
GUVC-T21GH	220 ~ 280 ㎚	0.355V	0 ~ 13.3	Sterilization Lamp Monitoring	254 ㎚

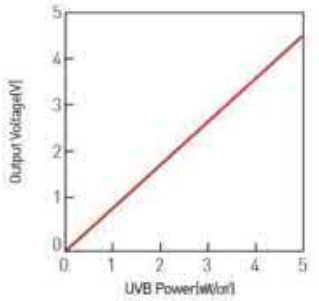
GUVV-T21GH



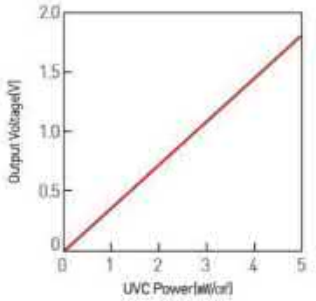
GUVA-T21GH



GUVB-T21GH

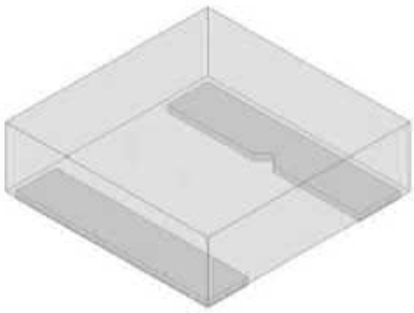


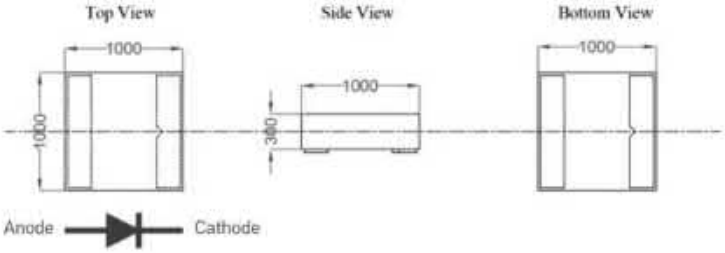
GUVC-T21GH



UV Sensor – Chip Scale PKG *New*

GUVC-S40GD





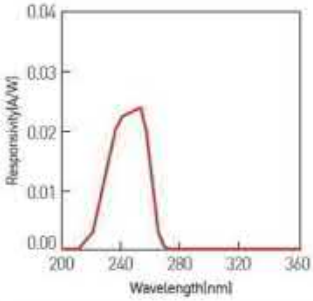
Features

Aluminium Gallium Nitride Based Material
Schottky type Photodiode
Photovoltaic Mode Operation
Good Visible Blindness

CSP (Chip scale package) **type UV sensor**
Subminiature PKG size (1.0 x 1.0 x 0.3 ㎜³)
Sapphire window (UVC range penetration)
No needed wire bonding process
SMT process available

Absolute Maximum Ratings

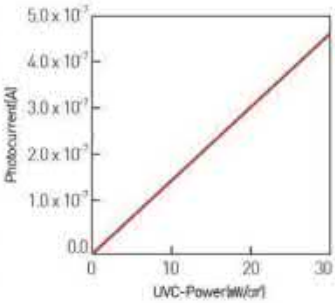
Parameter	Symbol	Min.	Max.	Unit	Remark
Storage Temperature	T_{st}	-40	90	℃	
Operating Temperature	T_{op}	-30	85	℃	
Reverse Voltage	$V_{r,max}$		3	V	
Forward Current	$I_{f,max}$		1	mA	
Optical Source Power Range	P_{op}	0.1m	100m	W/㎠	UVC Lamp
Soldering Temperature	T_{sol}		260	℃	10% of R



※Notice: apply to us in the case that Optical Source Power is over 100,000μW/㎠.

Characteristics (at 25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Dark Current	I_d			1	nA	Vr = 0.1 V
Photo Current	I_{ph}		150		nA	UVC Lamp, 1㎽/㎠
Temperature Coefficient	I_{tc}		-0.07		%/℃	UVC Lamp
Responsivity	R		0.03		A/W	λ= 254㎚, Vr = 0 V
Spectral Detection Range	λ	220		280	㎚	10% of R
Active area			0.827		㎟	



EPI Service

AlN Template
Blue LED I Green LED
U-GaN I N-GaN I P-GaN

MOCVD ROOM

Epi - Wafer AlN

Features

AlN Epi. Wafer
Single side polished (Growth surface)

Diameter

2" (50.8mm)

Thickness (Included substrate)

430㎛ ± 15㎛

Structure

AlN / Sapphire substrate

AlN on Sapphire Wafer

Characteristics (at 25℃)

Parameter		Typ.	Test Conditions
Crack Free AlN Surface Area	Diameter	> 44 mm	
Thickness	Thickness	< 3 ㎛	
Xrd	(002)	< 300 arcsec	Panalytical HRXRD
	(102)	< 600 arcsec	
RMS	2㎛ * 2㎛	1 nm	