

## Technical Data Sheet

### 5mm Silicon PIN Photodiode: SGPD594B43

#### ■ Features

- Fast response time
- High photo sensitivity
- Small junction capacitance
- Pb free
- The product itself will remain within RoHS compliant version.

#### ■ Descriptions

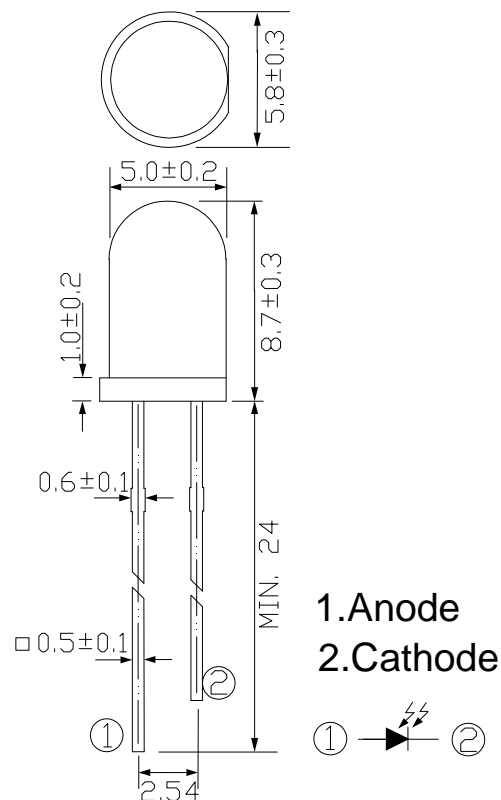
SGPD594B43 is a high speed and high sensitive PIN photodiode in a standard  $\varnothing 5$  plastic package. Due to its black epoxy the device is sensitive to infrared radiation.



#### ■ Applications

- High speed photo detector
- Security system
- Camera
- Optoelectronic switch

#### ■ Package Dimensions



Note: 1. All dimensions are in millimeters  
2. Tolerances unless dimensions  $\pm 0.25$ mm

### ■ Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Units
Reverse Voltage	VR	35	V
Power Dissipation	Pd	150	mW
Lead Soldering Temperature	Tsol	260	°C
Operating Temperature	Topr	-40 ~ +85	°C
Storage Temperature	Tstg	-40 ~ +85	°C

### ■ Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Rang of Spectral Bandwidth	$\lambda_{0.5}$	----	840	----	1100	nm
Wavelength of Peak Sensitivity	$\lambda_p$	----	----	940	----	nm
Open-Circuit Voltage	V <sub>OC</sub>	Ee=5m W/cm <sup>2</sup> $\lambda_p=940\text{nm}$	----	0.32	----	V
Short- Circuit Current	I <sub>SC</sub>	Ee=5m W/cm <sup>2</sup> $\lambda_p=940\text{nm}$	----	70	----	$\mu\text{A}$
Reverse Light Current	I <sub>L</sub>	Ee=5m W/cm <sup>2</sup> $\lambda_p=940\text{nm}$ V <sub>R</sub> =5V	60	70	----	$\mu\text{A}$
Dark Current	I <sub>d</sub>	Ee=0m W/cm <sup>2</sup> V <sub>R</sub> =10V	----	----	10	nA
Reverse Breakdown	BV <sub>R</sub>	Ee=0m W/cm <sup>2</sup> I <sub>R</sub> =100 $\mu\text{A}$	35	----	----	V
Total Capacitance	C <sub>t</sub>	Ee=0m W/cm <sup>2</sup> V <sub>R</sub> =3V f=1MHZ	----	5	----	pF
Rise/Fall Time	t <sub>r</sub> /t <sub>f</sub>	V <sub>R</sub> =10V R <sub>L</sub> =1K $\Omega$		12/12		nS

■ **Typical Electro-Optical Characteristics Curves**

Fig.1 Power Dissipation vs. Ambient Temperature

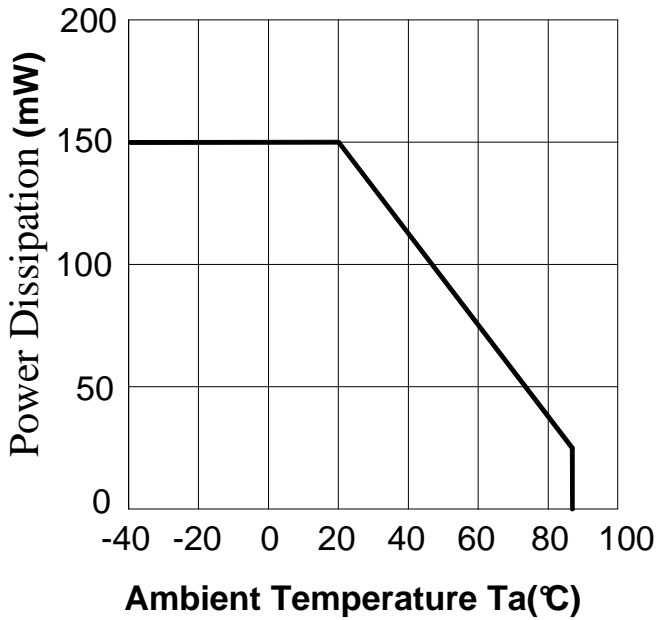


Fig.2 Spectral Sensitivity

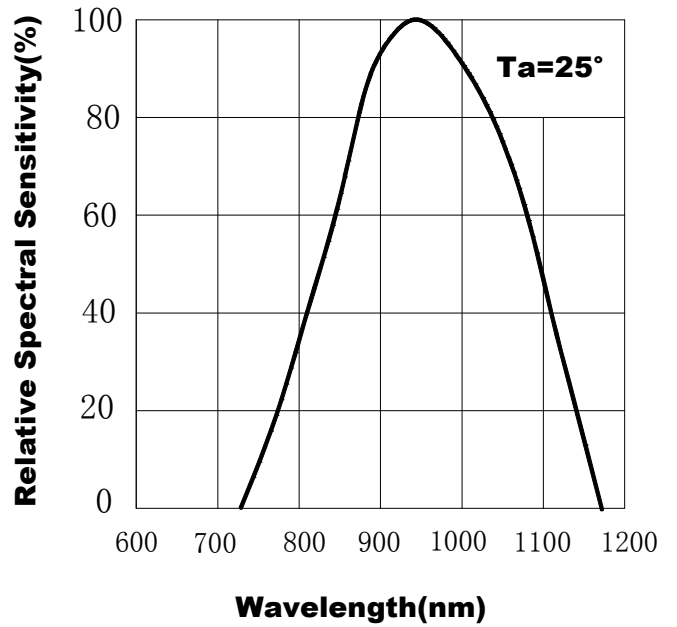


Fig.3 Dark Current vs. Ambient Temperature

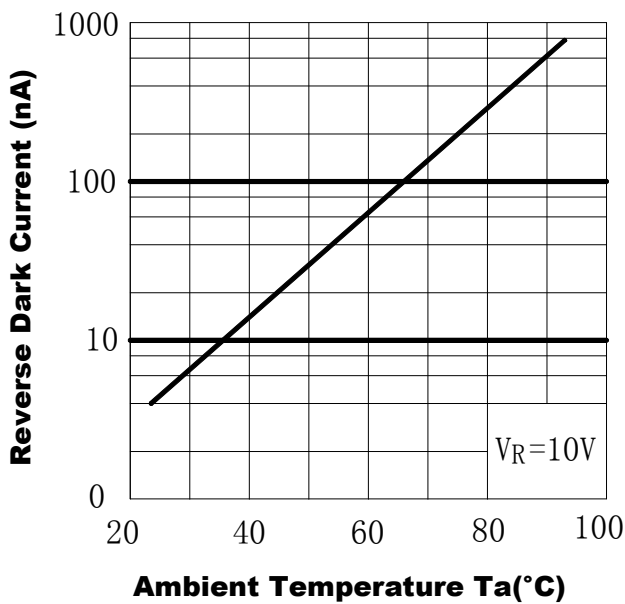


Fig.4 Reverse Light Current vs. Ee

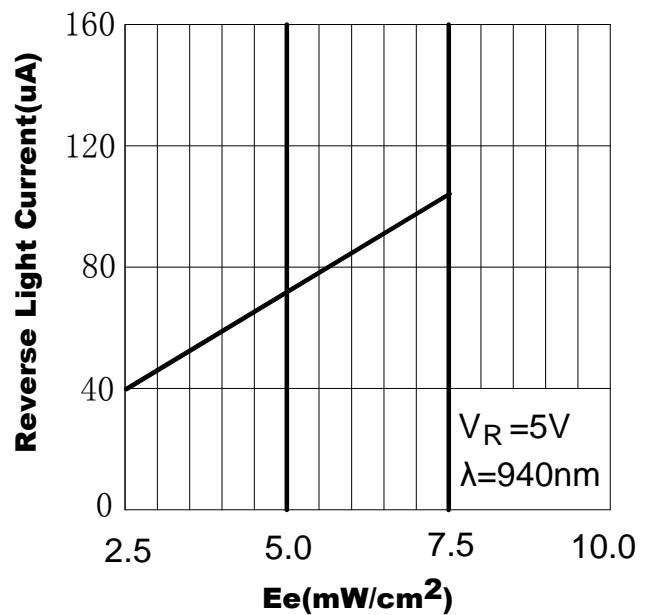


Fig.5 Terminal Capacitance vs.  
Reverse Voltage

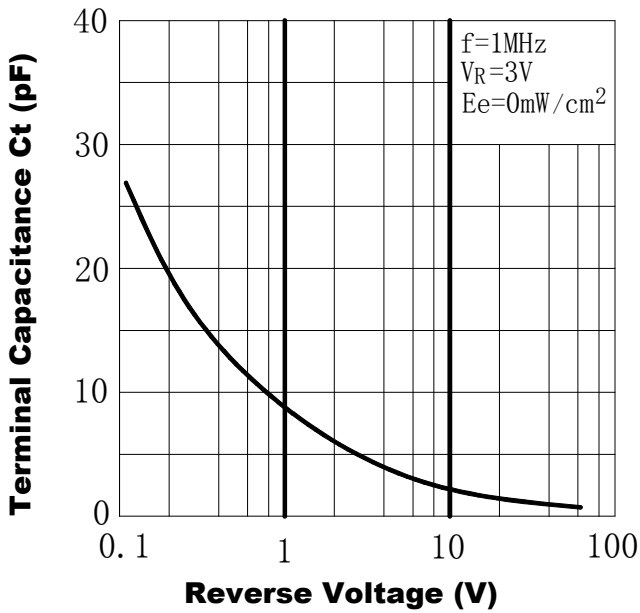
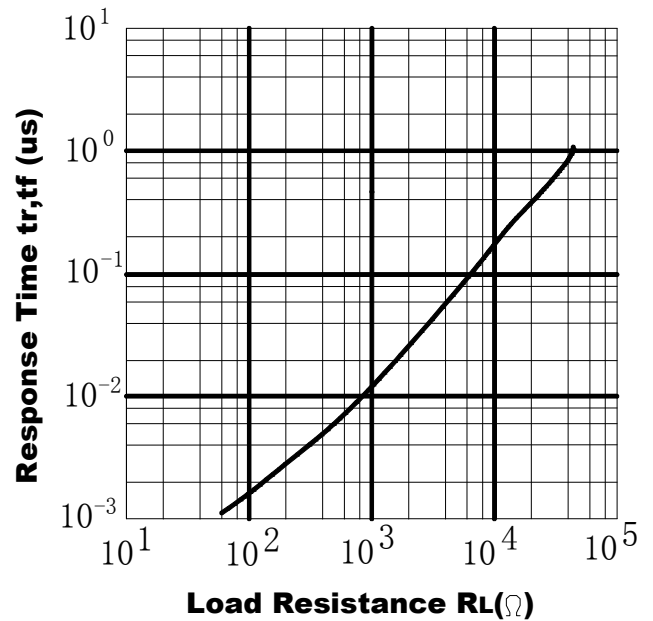


Fig.6 Response Time vs.  
Load Resistance



## ■ Packing Quantity Specification

1. 1000PCS/1Bag

## ■ Notes

1. Above specification may be changed without notice. SHUGUAN will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. SHUGUAN assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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