

Si PD-151TS52E-1206-V1.00

High Sensitivity Si PD with 1206SMD package

■ Features

- * High Sensitivity Silicon Photo Detector
- * 1206 SMD flat package
- * High uniformity
- * Low Dependence of Electrical-Optical Characteristics over Temperature.

■ Applications

- * Optical Power Monitoring
- * Light Detection and Ranging
- * Medical and Chemical Analysis
- * Temperature Sensing
- * Fiber Optic Transmission System

■ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Reverse voltage	V_r	35	V
Operating Temperature	T_{opr}	-20 ~ +80	°C
Storage Temperature	T_{stg}	- 20 ~ + 80	°C
Power dissipation at (or below) 25°C free air temperature	PD	150	mW

*Solder Time < 10sec @ 260 °C

■ Electrical and optical characteristics (Ta = 25°C)

Item	Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
1	Reverse dark current	I_D	$V_R = 10V$ $H = 0mw/cm^2$	-	-	1.0	nA
2	Reverse Breakdown voltage	$V_{(BR)R}$	$I_R = 1\mu A$ $H = 0mw/cm^2$	15	-	-	V
3	Short circuit current	I_{sc}	$C_T = 2870^{\circ}K$ $H = 5mw/cm^2$	-	13	-	uA
4	Reverse light current	I_L	$V_R = 5V$ $C_T = 2870^{\circ}K$ $H = 5mw/cm^2$	-	13	-	uA
5	Total capacitance	C_T	$V_R = 3V$ $H = 0mw/cm^2$ $f = 1MHz$	-	20	-	pF

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■ Electro-Optical Characteristics Curves

FIG.1 DARK CURRENT VS. REVERSE VOLTAGE
 $T_{AMB}=25^{\circ}C, E_e=0mw/cm^2$

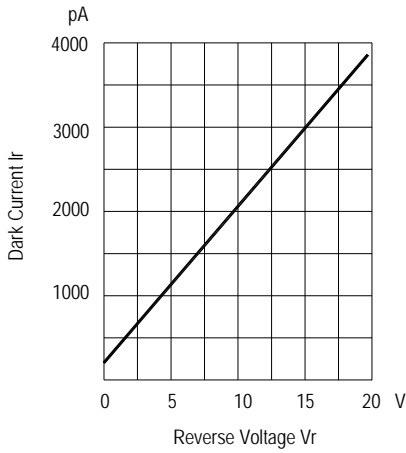


FIG.2 CAPACITANCE VS. REVERSE VOLTAGE
 $F=1MHZ, E_e=0mw/cm^2$

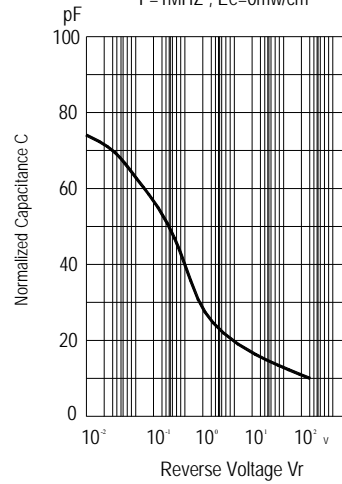


FIG.3 PHOTOCURRENT VS. AMBIENT TEMPERATURE

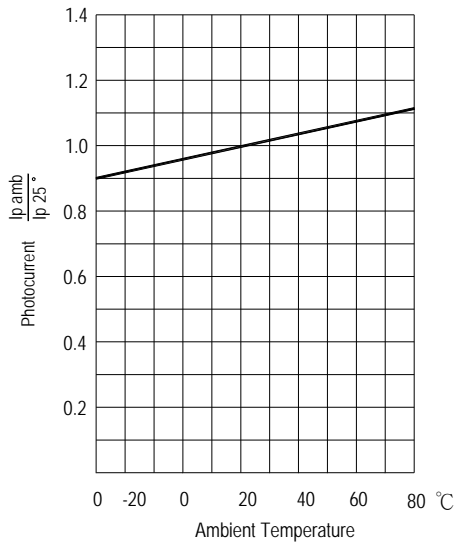
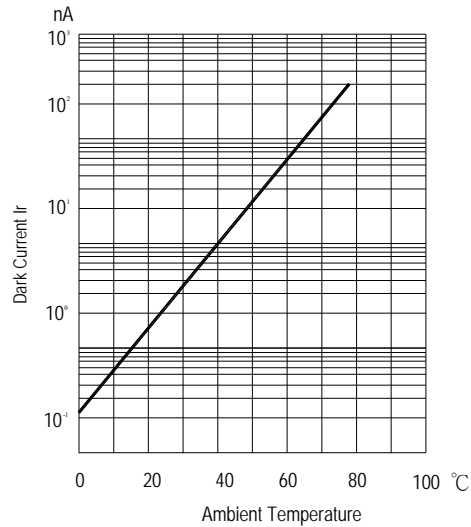
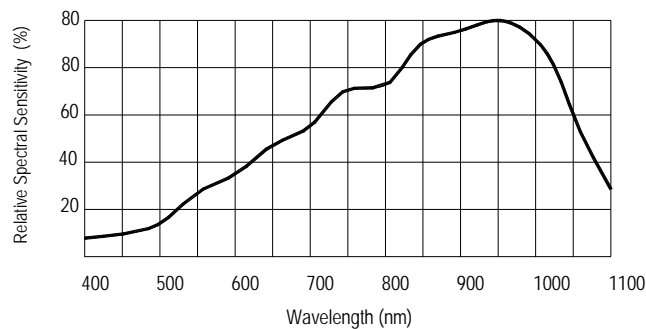


FIG.4 DARK CURRENT VS. AMBIENT TEMPERATURE
 $V_r=10V, E_e=0mw/cm^2$



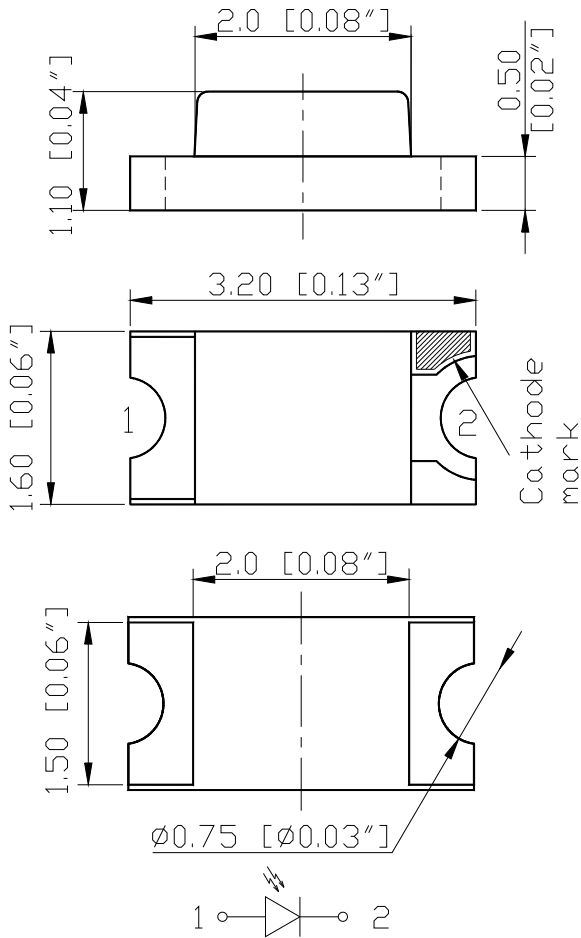
Relative Spectral Sensitivity VS. Wavelength



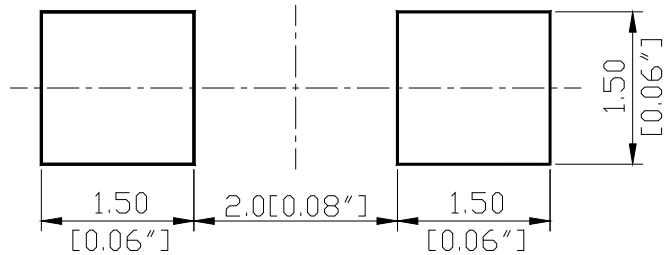
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■ Outline Dimension



RECOMMEND PAD LAYOUT



ITEM	MATERIALS
Resin (mold)	Epoxy
Printed circuit board	BT (white)
Bonding wire	Ø25 µm Au
Lens color	Water transparent
Dice	Silicon

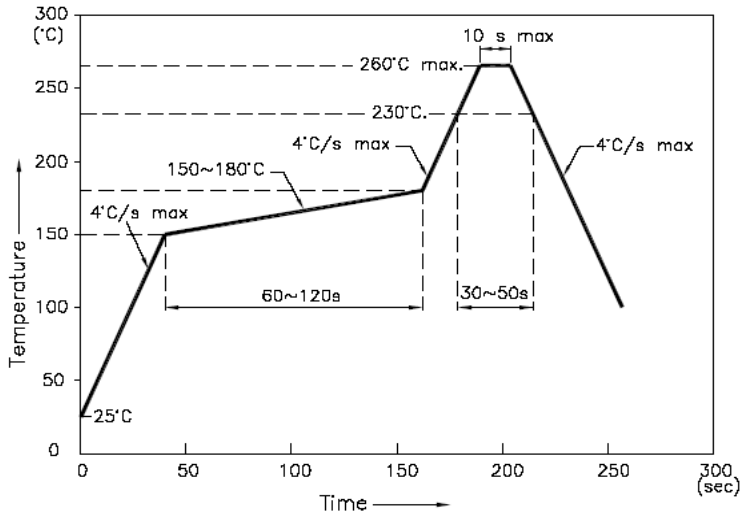
NOTES:

1. All dimensions are in millimeters (inches);
2. Tolerances are ±0.1mm (0.004inch) unless otherwise noted.

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■ Reflow Temp/Time



NOTES:

1. We recommend the reflow temperature $245^{\circ}\text{C}(\pm 5^{\circ}\text{C})$. the maximum soldering temperature should be limited to 260°C .
2. dont cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

■ Soldering iron

Basic spec is $\leq 5\text{sec}$ when 260°C . If temperature is higher, time should be shorter ($+10^{\circ}\text{C} \rightarrow -1\text{sec}$). Power dissipation of iron should be smaller than 20W, and temperatures should be controllable. Surface temperature of the device should be under 230°C .

■ Rework

1. Customer must finish rework within 5 sec under 260°C .
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.

■ Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow、solder etc.