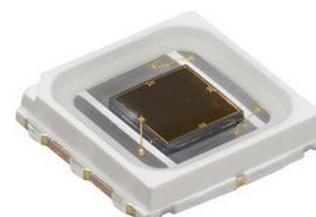




## IPD1450-200-SMB

- InGaAs PIN Photodiode
- Spectral Responsivity: 900 – 1700 nm
- Active Area: 2000 x 2000  $\mu\text{m}$
- PA9T SMD package (5.0x5.2x1.0mm)
- Viewing Angle: 124°

PRELIMINARY



### Description

**IPD1450-200-SMB** is an InGaAs PIN photodiode with large active area chip of 2000x2000  $\mu\text{m}$  and wide sensitivity range of 900-1700 nm, with peak spectral response at 1580 nm. It comes in P9AT SMD package with silver plated soldering pads (lead free solderable), copper heat sink, and epoxy resin flat window.

### Maximum Ratings (T<sub>CASE</sub> = 25°C)

Parameter	Symbol	Conditions	Values		Unit
			Min.	Max.	
Reverse Dark Current	$I_D$	$V_R=5\text{V}$ , $E_e=0\text{mW/cm}^2$		5	nA
Reverse Breakdown Voltage	$V_{BR}$	$I_R=1\mu\text{A}$ , $E_e=0\text{mW/cm}^2$	30		V
Forward Voltage	$V_F$	$I_F=3\text{mA}$ , $E_e=0\text{mW/cm}^2$		0.7	V

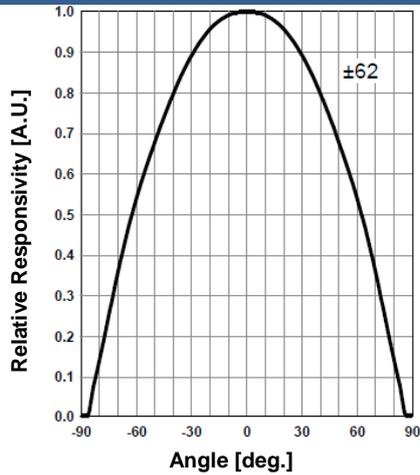
### Electro-Optical Characteristics (T<sub>CASE</sub> = 25°C)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Peak Spectral Responsivity	$\lambda_P$	$V_R=0\text{V}$		1580		nm
Responsivity	$R_E$	$V_R=5\text{V}$	0.8			A/W
		$\lambda=1300\text{nm}$				
Viewing Angle	$2\theta_{1/2}$	$V_R=0\text{V}$		124		deg.

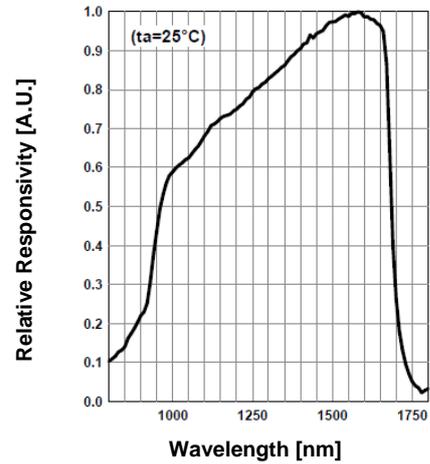


## Typical Performance Characteristics

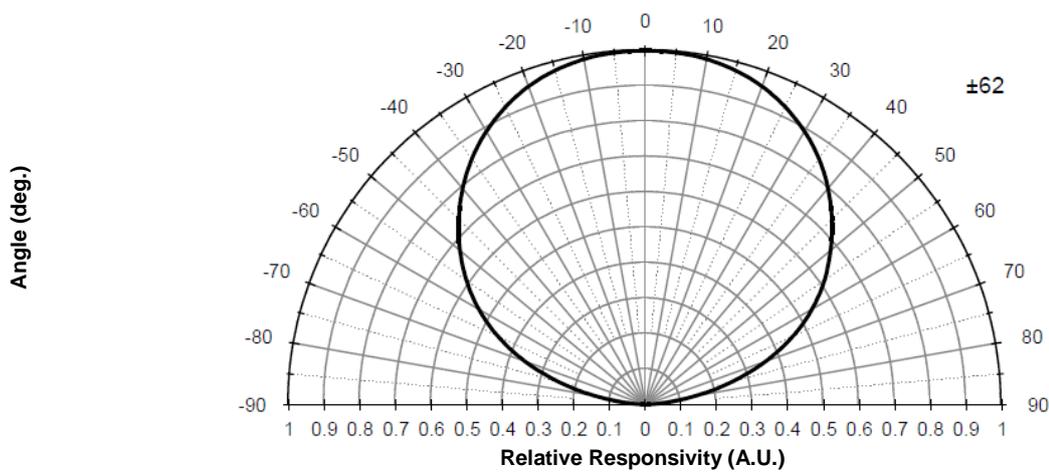
Relative Responsivity vs. Angle .



Relative Responsivity vs. Wavelength

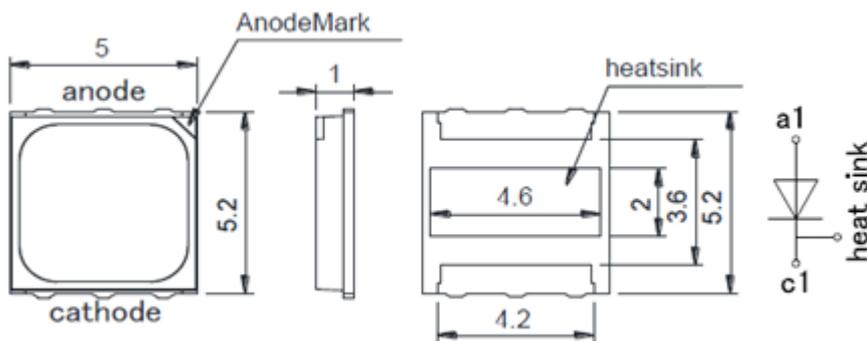


Directivity



## Outline Dimensions

PA9T



Lead	Function
Pin a1	Anode
Pin c1	Cathode

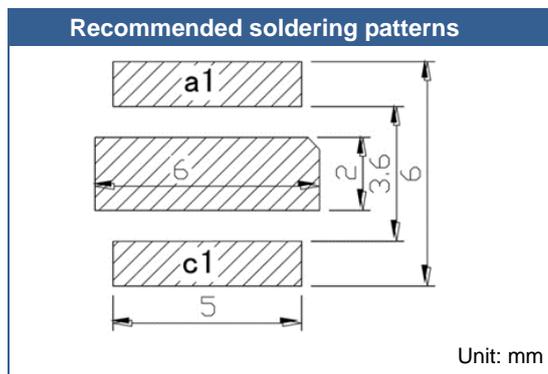
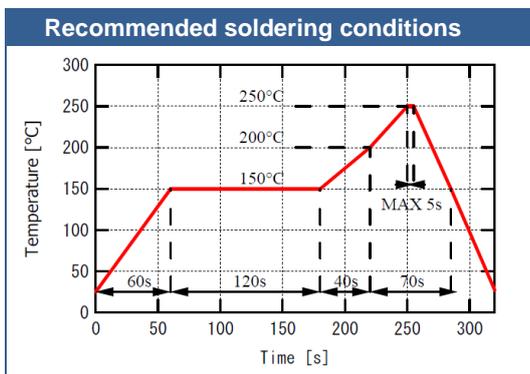
all dimensions in mm



## Precautions

### Soldering

- Do avoid overheating of the LED
- Do avoid electrostatic discharge (ESD)
- Do avoid mechanical stress, shock, and vibration
- Do only use non-corrosive flux
- Do not apply current to the LED until it has cooled down to room temperature after soldering



### Cleaning

**Cleaning with isopropyl alcohol, propanol, or ethyl alcohol is recommended**

DO NOT USE acetone, chloroform, trichloroethylene, or MKS

DO NOT USE ultrasonic cleaners

### Static Electricity

**LEDs are sensitive to electrostatic discharge (ESD).** Precautions against ESD must be taken when handling or operating these LEDs. Surge voltage or electrostatic discharge can result in complete failure of the device.

### Radiation

During operation these LEDs do emit light, which **could be hazardous to skin and eyes**, and **may cause cancer**. Do avoid exposure to the emitted light. Protective glasses if needed. It is further advised to attach a warning label on products/systems.

### Operation

**Do only operate LEDs with a current source.**

Running these LEDs from a voltage source will result in complete failure of the device.

Current of a LED is an exponential function of the voltage across it. Usage of current regulated drive circuits is mandatory.