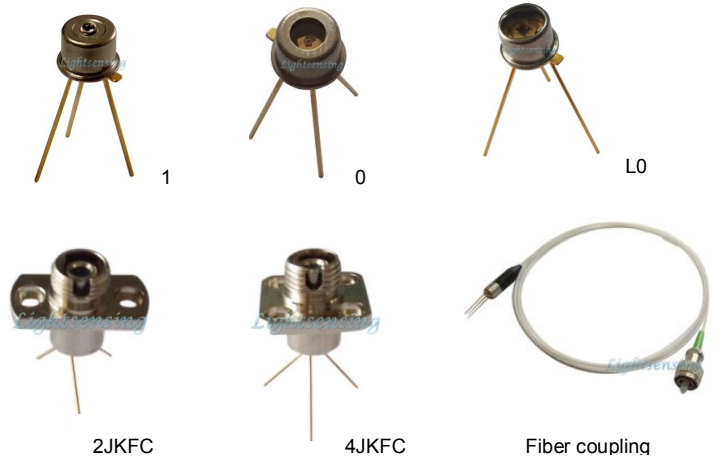


## 500um InGaAs M=30 Avalanche Photodiode Version:4.2 17-05-13

Model: LSIAPD-S500

### Features:

- High reliability, low dark current
- Top illumination Planar APD
- High Gain up to M=30
- High bandwidth up to 0.3GHZ
- Hermetic TO46 Can or or with receptacle with fiber coupling



### Applications:

- Ultra Weak pulse optical detecting
- Optical sensor, OTDR
- Laser lidar, laser range finding
- high resolution Optical Coherence Tomography
- Science analysis and experiment

### The absolute values

Operating voltage	$0.99 \times V_{BR}$	Operating temperature	$-40 \sim +85^{\circ}\text{C}$	Power dissipation	100mW
Forward current	10mA	storage temperature	$-45 \sim +100^{\circ}\text{C}$	Soldering temperature(time)	$260^{\circ}\text{C}$ (10s)

### The opto-eletronic characteritics ( @Tc=22±3°C )

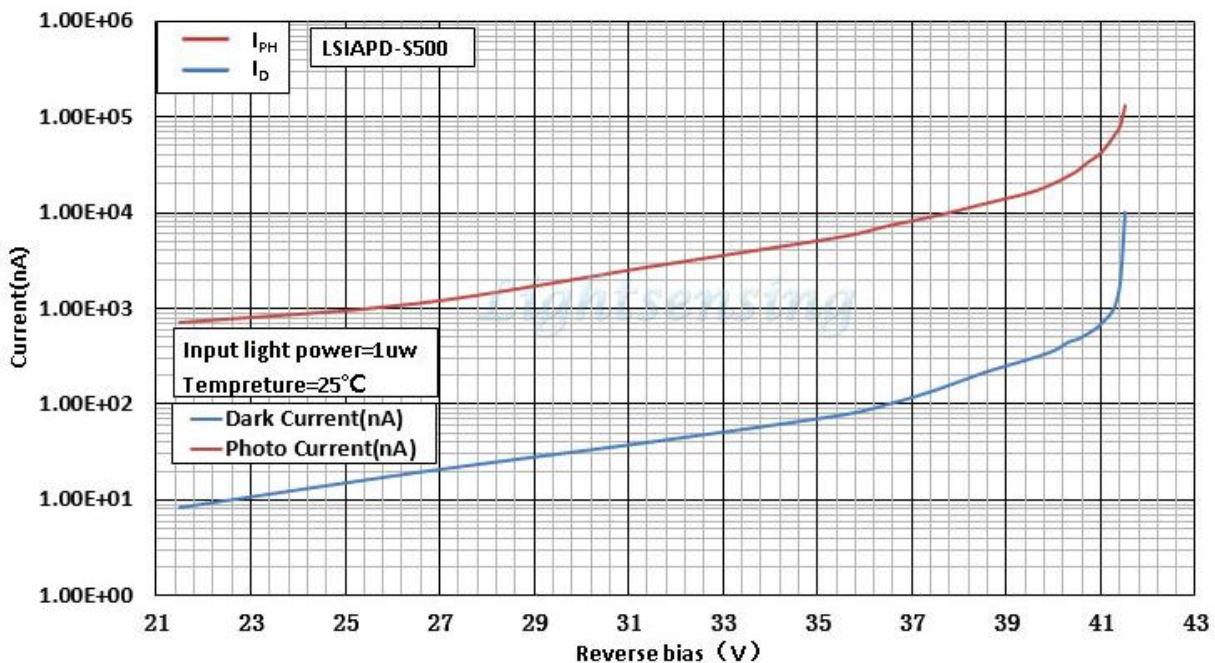
Parameters	Sym.	Test conditions	Min	Typ	Max	Unit
Response Spectrum	$\lambda$	—	800~1700			nm
Active diameter	$\varphi$	—	500			$\mu\text{m}$
Responsivity	Re	$\lambda=1.55\mu\text{m}, 1\mu\text{w}, M=1$		0.9		A/W
		$\lambda=1.064\mu\text{m}, 1\mu\text{w}, M=1$		0.65		A/W
Multiplication gain	M	$\lambda=1.55\mu\text{m}, 1\mu\text{w}, V_{BR}=4\text{V}$		10		
		$\lambda=1.55\mu\text{m}, 1\mu\text{w}, V_{BR}=2\text{V}$		20		
		$\lambda=1.55\mu\text{m}, 1\mu\text{w}, V_{BR}=1\text{V}$		30		
Rise time	Tr	M=10, $R_L=50\Omega$		1		ns
-3dB bandwidth	BW	M=10, $R_L=50\Omega$		0.3		GHz
Dark current	$I_D$	M=10		130	220	nA
Total capacitance	$C_{tot}$	M=10		10		pF
Reverse breakdown voltage	$V_{BR}$	$I_R=10\mu\text{A}$	35	43	55	V
Maximum instantaneous input power	P	M=10, 1550nm, 10ns, 10KHZ			1	mW
Operating voltage temperature coefficient	$\delta$	Tc= $-40 \sim +85^{\circ}\text{C}$		0.11	0.15	V/ $^{\circ}\text{C}$
package	Hermetic TO46 Can or or with receptacle with fiber coupling					

NOTICE: The above product specifications are subject to change without notice.

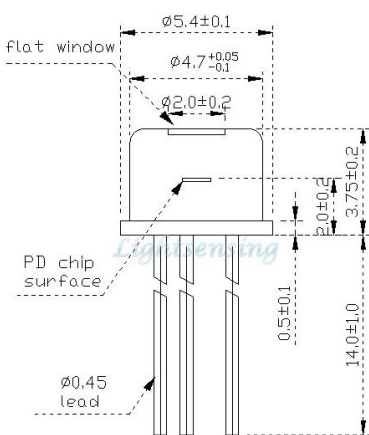
### The typical characteristic curve



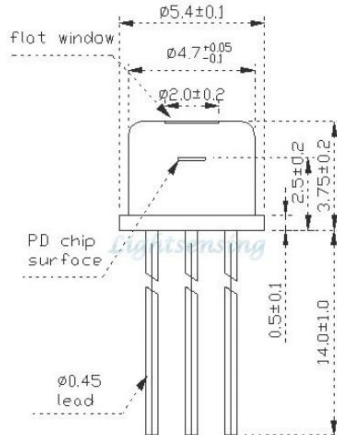
Dark current and photo current vs voltage



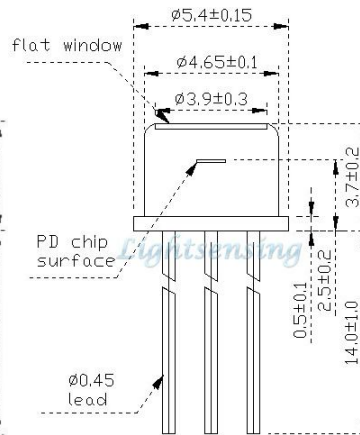
### TO 46 package and Lead



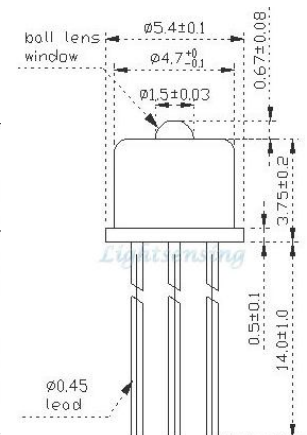
Type A PIN description  
2mm flat window TO Model: 0



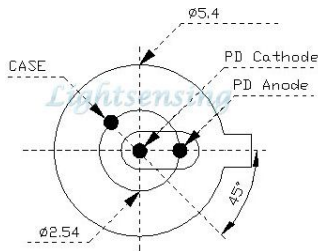
Type B PIN description  
2mm flat window TO Model: 0



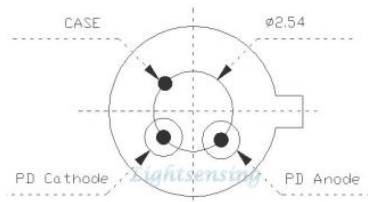
Type B PIN description  
Large flat window TO Model: L0



Type B PIN description  
ball lens TO Model: 1



Type A PIN description  
Bottom View



Type B PIN description  
Bottom View

## Ordering information

LSIAPD-S500-X-X

X=A Type A PIN description  
X=B Type B PIN description

X=0	TO-46 Can with 2mm flat window cap
X=0A	TO-46 Can with 2mm flat window cap and Antireflection Coatings
X=L0	TO-46 Can with 3.9mm flat window cap
X=L0A	TO-46 Can with 3.9mm flat window cap and Antireflection Coatings
X=1	TO-46 Can with ball lens cap
X=1A	TO-46 Can with ball lens cap and Antireflection Coatings
X=SMFA/P	TO-46 Can with SM Fiber coupling with FC-APC/FC-PC connector
X=SMSA	TO-46 Can with SM Fiber coupling with SC-APC connector
X=5MMFA/P	TO-46 Can with 50um MM Fiber coupling with FC-APC/FC-PC connector
X=6MMFA/P	TO-46 Can with 62.5um MM Fiber coupling with FC-APC/FC-PC connector
X=10MMA/P	TO-46 Can with 105um MM Fiber coupling with FC-APC/FC-PC connector
X=20MMA/P	TO-46 Can with 200um MM Fiber coupling with FC-APC/FC-PC connector
X=40MMA/P	TO-46 Can with 400um MM Fiber coupling with FC-APC/FC-PC connector
X=2JKFC	TO-46 Can with fixed receptacle with FC connector and 2 pieces of fix holes
X=4JKFC	TO-46 Can with fixed receptacle with FC connector and 4 pieces of fix holes
X=Other	By customer's request

## The Cautions

- 1: The above product specifications are subject to change without notice.
- 2: The suitable ESD protecting measures are recommend in storage,transporting and using.
- 3: The fiber bending radius no less than 20mm for avoiding fiber damaged ,Be sure the fiber coupling facet is clean before connecting it to opto-circuit.