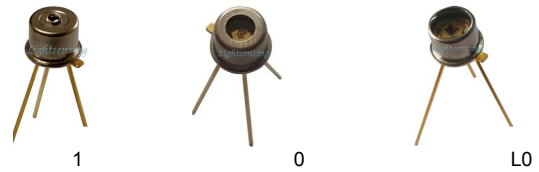


# 100um InGaAs M=30 Avalanche Photodiode

Version: 3.1 17-05-13

**Model: LSIAPD-100**
**Features:**

- High reliability, low dark current
- Top illumination Planar APD
- High Gain up to M=30
- High bandwidth up to 1.5GHZ
- Hermetic TO46 Can or Mini TO Can or with fiber coupling


**Applications:**

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


**The absolute values**

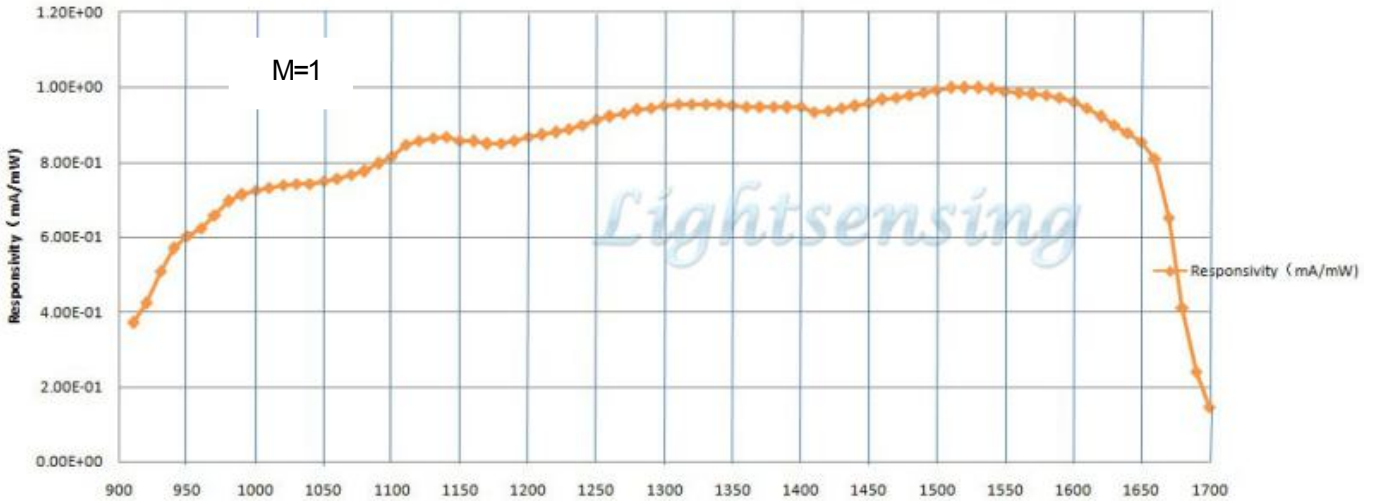
Operating voltage	$0.99 \times V_{BR}$	Operating temperature	$-40 \sim +85^{\circ}\text{C}$	Power dissipation	50mW
Forward current	5mA	storage temperature	$-45 \sim +100^{\circ}\text{C}$	Soldering temperature(time)	$260^{\circ}\text{C}$ (10s)

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

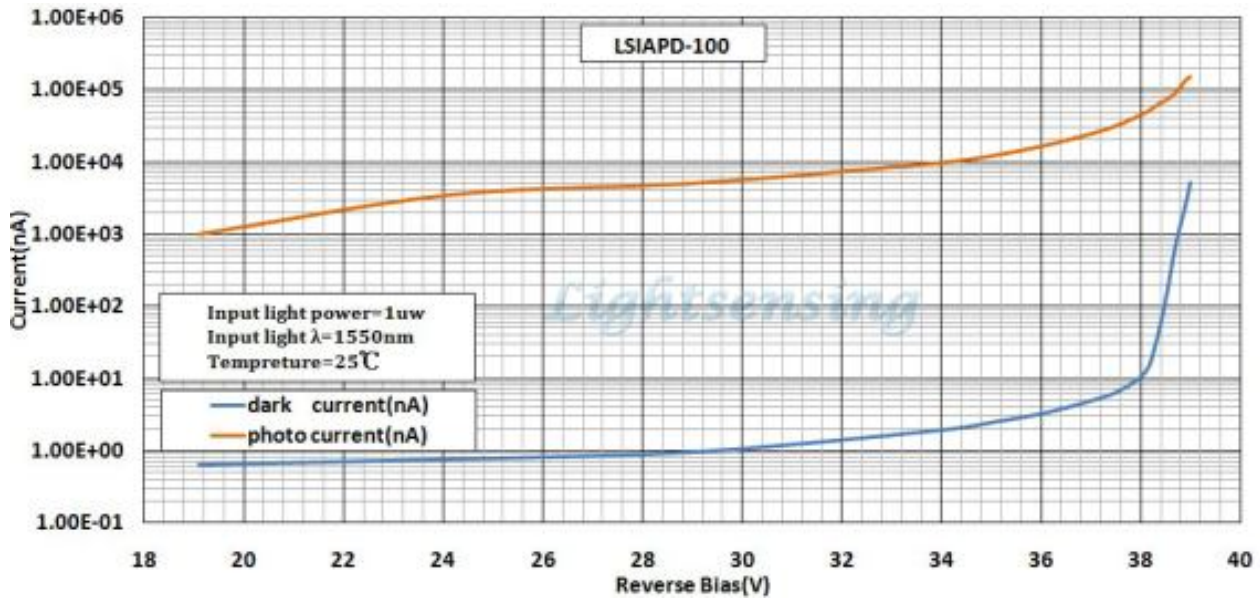
Parameters	Sym.	Test conditions	Min	Typ	Max	Unit
Response Spectrum	$\lambda$	—	800~1700			nm
Active diameter	$\varphi$	—	100			$\mu\text{m}$
Responsivity	Re	$\lambda=1.55\mu\text{m}, 1\mu\text{w}, M=1$		0.9		A/W
		$\lambda=1.064\mu\text{m}, 1\mu\text{w}, M=1$		0.65		A/W
Multiplication gain	M	$\lambda=1.55\mu\text{m}, 1\mu\text{w}, V_{BR}=4\text{V}$		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	$M=10, R_L=50\Omega$		200		ps
-3dB bandwidth	BW	$M=10, R_L=50\Omega$		1.5		GHz
Dark current	$I_D$	M=10		4	15	nA
Total capacitance	$C_{tot}$	M=10		2		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			0.45	mW
Operating voltage temperature coefficient	$\delta$	Tc=-40~+85°C		0.11	0.15	V/°C
package	Hermetic TO46 Can or Mini TO Can or with fiber coupling					

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

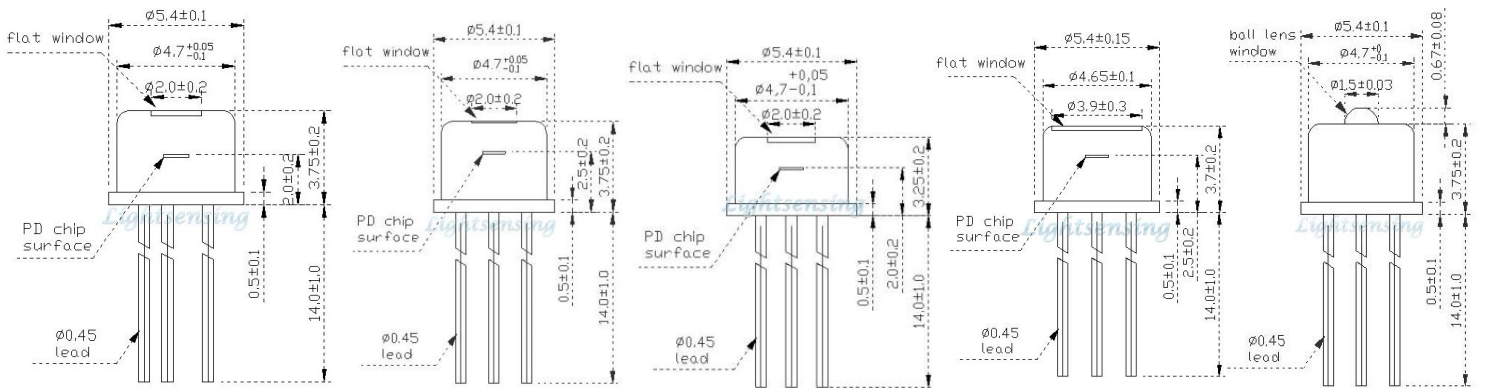
### The typical characteristic curve



Dark current and photo current vs voltage



### TO 46 package and Lead



Type A PIN description

Type B PIN description

Type B PIN description short Cap

Type B PIN description

Type B PIN description

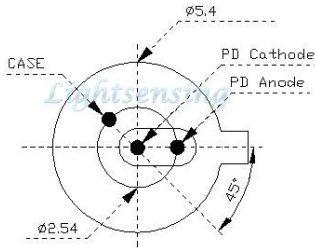
2mm flat window TO Model: 0

2mm flat window TO Model: 0

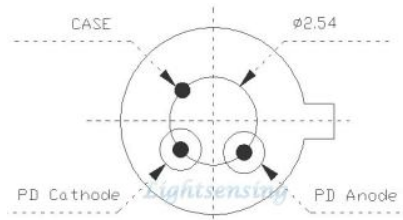
2mm flat window TO Model: S0

Large flat window TO Model: L0

ball lens TO Model: 1

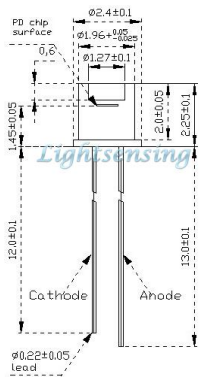


Type A PIN description  
Bottom View

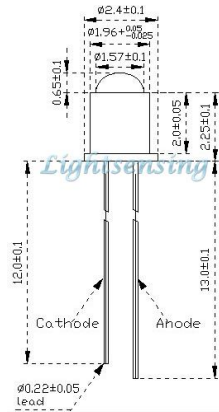


Type B PIN description  
Bottom View

### Mini-TO Can package and Lead



flat window Mini TO  
Model: M0



ball lens Mini TO  
Model: M1



### TO46 package Ordering information

LSIAPD-100-X-X		
X=A	Type A PIN description	X=0 TO-46 Can with 2mm flat window cap
X=B	Type B PIN description	X=0A TO-46 Can with 2mm flat window cap and Antireflection Coatings
		X=S0 TO-46 Can with 2mm flat window and 3mm short cap
		X=S0A TO-46 Can with 2mm flat window and 3mm short 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=Other By customer's request

### Mini TO package Ordering information

LSIAPD-100-X		
X=M0	Mini TO Can with flat window cap	
X=M1	Mini TO Can with ball lens window cap	
X=M1-SMFA/P	Mini TO Can with SM Fiber coupling with FC-APC/FC-PC connector	
X=M1-6MMFA/P	Mini TO Can with 62.5um MM Fiber coupling with FC-APC/FC-PC connector	
X=M1-10MMFA/P	Mini TO Can with 105um MM Fiber coupling with FC-APC/FC-PC connector	
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.

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