

500um InGaAs Avalanche Photodiode

Model: LSIAPD-500

The features

The series avalanche photodiode is the commercial available InGaAs APD with high responsivity and extremely fast rise and fall times throughout the 900 to 1650 nm wavelength range.

The peak responsivity at 1550 nm ideally suited to eye-safe laser range finding applications, laser radar, free space optical communications, optical fiber sensor, OTDR and high resolution Optical Coherence Tomography. The chip is hermetically sealed in a TO46 package.



The absolute values

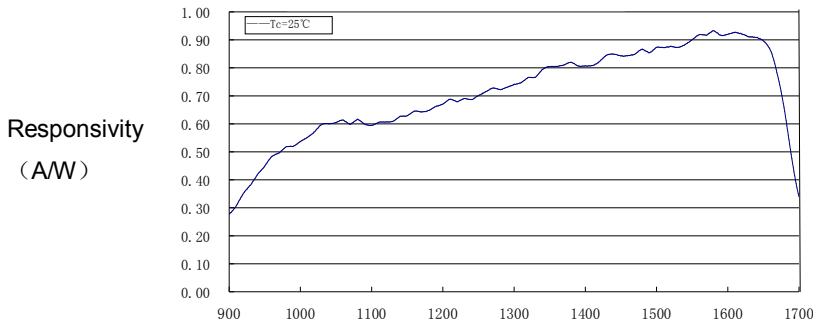
Operating voltage	$0.99 \times V_{BR}$	Operating temperature	$-50 \sim +100^{\circ}\text{C}$	Power dissipation	50mW
Forward current	10mA	storage temperature	$-55 \sim +125^{\circ}\text{C}$	Soldering temperature(time)	260°C (10s)

The opto-eletronic characteritics (@Tc=22±3℃)

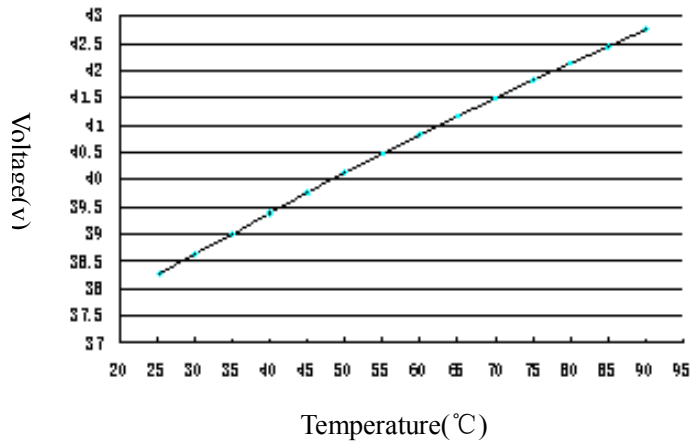
Parameters	Sym.	Test conditions	Min	Typ	Max	Unit
Response Spectrum	λ	—	900~1650			nm
Active diameter	φ	—	500			μm
Reponsivity	Re	$\lambda=1.55\mu\text{m}, \varphi_e=1\mu\text{w}, M=10$	9.0			A/W
Maximum multiplication gain	M_{max}	$\lambda=1.55\mu\text{m}, \varphi_e=1\mu\text{w}$	20			
Response time	t_s	$f=1\text{MHz}, R_L=50\Omega$		1.0		ns
Dark current	I_D	$M=10$		70	100	nA
Total capacitance	C_{tot}	$M=10$		10	15	pF
Reverse breakdown voltage	V_{BR}	$I_R=100\mu\text{A}$	40		60	V
Operating voltage temperature coefficient	δ	$T_c=-40 \sim +85^{\circ}\text{C}$		0.12	0.15	V/°C

The typical characteristic curve

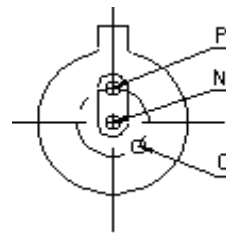
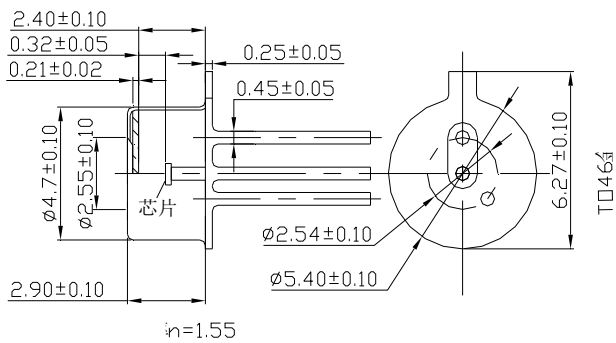
Spectral response curve at M=1



breakdown voltage vs temperature

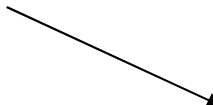


PIN Drawing



Ordering information

LSIAPD-500-X



X=0	TO-46 Can with Ball lens cap
X=1	TO-46 Can with flat window cap
X=SMFP	SM Fiber coupling with FC-PC connector
X=SMFA	SM Fiber coupling with FC-APC connector
X=SMSA	SM Fiber coupling with SC-APC connector
X=5MMFA	50um MM Fiber coupling with FC-APC connector
X=6MMFA	62.5um MM Fiber coupling with FC-APC connector
X=JKFC	TO-46 Can with FC receptacle
X=Other	By customer's request

The Cautions

- 1: The suitable ESD protecting are recommend in storage, transporting and using.
- 2: 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.