

雪崩二极管 (APD)

昊量光电提供的 APD (Si Avalanche Photodiode) 雪崩二极管采用内部增益机制, 从而具备快速响应, 低暗电流, 近红外波段的灵敏度高等优点。我们的 APD 雪崩二极管尤其适合于需要对带宽要求比较高的应用, 以及需要借由内部增益来克服前置放大器噪声的场合。此外, 我们的 APD 雪崩二极管提供比标准光电二极管 (PD) 更高的灵敏度, 非常适合极微弱光信号的检测和短脉冲信号测量。

我们硅基雪崩光电二极管 (Si APD's) 的工作波段介于 400 nm 和 1100 nm 之间。标准的光敏探测区域尺寸 $\varnothing 200$ 和 $\varnothing 500 \mu\text{m}$, 并提供密封 TO 罐和 LCC 等多种封装形式。

我们 APD 在包括激光通讯, 激光雷达 (LIDAR), 光学检测及光子计数等在内的许多应用中已经成为光电倍增管的最佳替代品。

产品总览:

Product	Peak Wavelength	Active Area	Package
APD-800-0-04	800 nm	$\varnothing 230 \mu\text{m}$	TO-46 Metal Can
APD-800-0-08	800 nm	$\varnothing 500 \mu\text{m}$	TO-46 Metal Can
APD-800-1-01	800 nm	$\varnothing 230 \mu\text{m}$	LCC3 SMD
APD-800-1-05	800 nm	$\varnothing 500 \mu\text{m}$	LCC3 SMD
APD-800-1-07	800 nm	$\varnothing 500 \mu\text{m}$	LCC6 SMD
APD-905-0-12	905 nm	$\varnothing 230 \mu\text{m}$	TO-46 Metal Can
APD-905-0-16	905 nm	$\varnothing 500 \mu\text{m}$	TO-46 Metal Can
APD-905-1-09	905 nm	$\varnothing 230 \mu\text{m}$	LCC3 SMD
APD-905-1-13	905 nm	$\varnothing 500 \mu\text{m}$	LCC3 SMD
APD-905-1-15	905 nm	$\varnothing 500 \mu\text{m}$	LCC6 SMD

绝对最大额定参数:

Absolute maximum ratings	Symbol	Rating	Unit
Operating temperature range	TOPR	-20...+85	$^{\circ}\text{C}$
Storage temperature range	TSTG	-55...+125	$^{\circ}\text{C}$
Power dissipation	PD	1	mW
Storage temperature range	IF	1	mA
Operating voltage	VOP	0.95 x VBR	V

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Lead soldering temperature*	TLS	260	°C
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产品参数:

800nm APD		APD-800-0-04 (TO-46)			APD-800-0-08 (TO-46)		
		APD-800-1-01 (LCC3 SMD)			APD-800-1-05 (LCC3 SMD)		
					APD-800-1-07 (LCC6 SMD)		
Parameters	Unit	Min	Typ	Max	Min	Typ	Max
Sensitivity range	nm	400		1100	400		1100
Active area Dia.	um		230			500	
Responsivity	A/W	35	50		35	50	
Rise time	ns		0.3			0.3	
Dark current	nA	0.02	0.05	0.4	0.05	0.1	0.5
Capacitance	pF		1.5			3	
Optimal gain			100			100	

905nm APD		APD-905-0-12 (TO-46)			APD-905-0-16 (TO-46)		
		APD-905-1-09 (LCC3 SMD)			APD-905-1-13 (LCC3 SMD)		
					APD-905-1-15 (LCC6 SMD)		
Parameters	Unit	Min	Typ	Max	Min	Typ	Max
Sensitivity range	nm	400		1100	400		1100
Active area, Dia	um		230			500	
Responsivity	A/W	50	55		50	55	
Rise time	ns		0.6			0.6	
Dark current	nA	0.1	0.2	1	0.1	0.4	1
Capacitance	pF		1			1.2	
Optimal gain			100			100	

封装形式:

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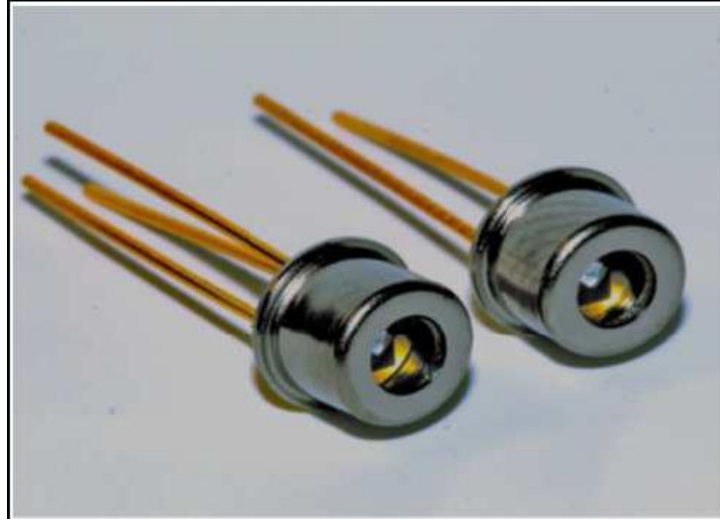
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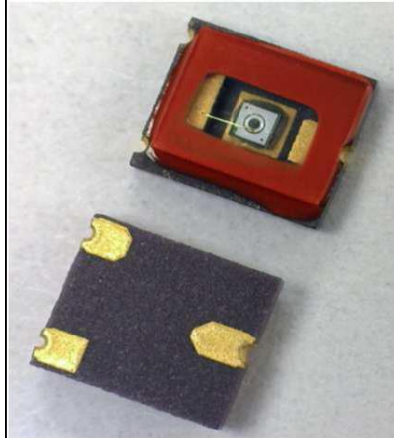
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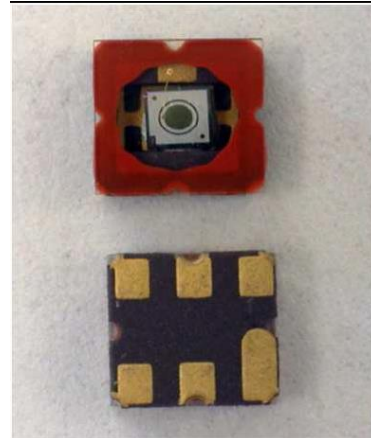
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TO-46, glass window cap



LCC3 SMD



LCC6 SMD

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