

Silicon avalanched photodiode



Description

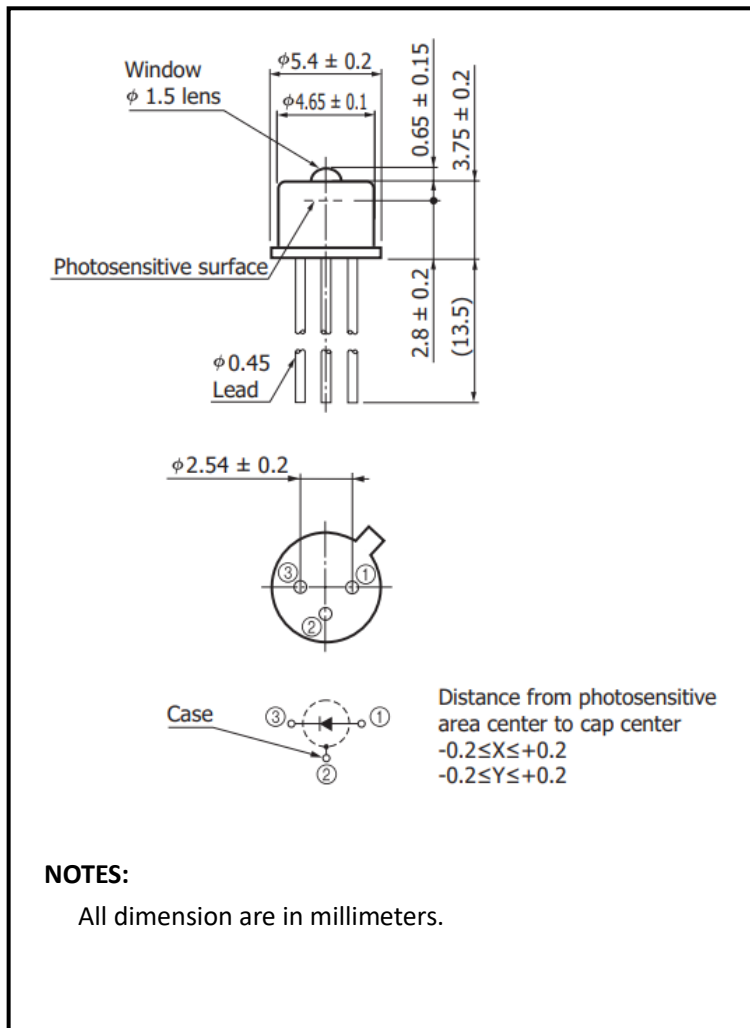
500um circular active area chip, high speed, high gain APD with N-P- PP+ construction.

Features

- * Top illumination planar APD
- * Φ 500um active area
- * High gain at low bias voltage
- * Operating temperature is from -40 to $+80^{\circ}\text{C}$
- * Storage temperature is from -50 to $+100^{\circ}\text{C}$
- * soldering temperature is 260°C @Max.5 seconds at the position of 2mm from the PIN legs.

Applications

- * Laser range finder
- * High speed optical communications

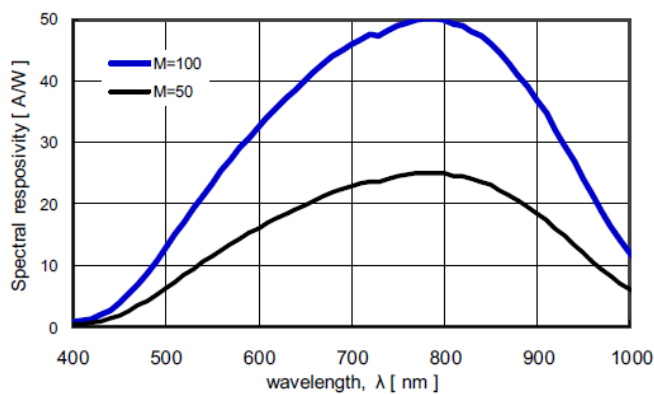


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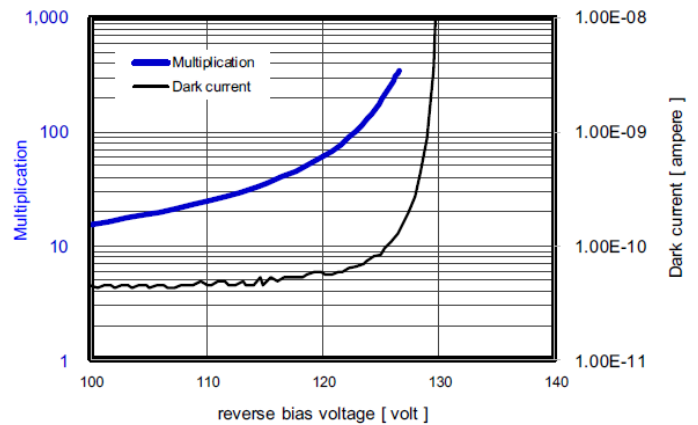
Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Wavelength range	λ		400-1100			nm
Active diameter	ϕ		500			μm
Dark current	I_D	M=100	0.05	0.10	3.0	nA
Junction Capacitance	C	M=100, f=1MHz		2.0		PF
Reverse breakdown voltage	V_{BR}	$I_D=10\mu\text{A}$	80		200	V
Operating voltage temperature coefficient	δ	$T_C=-40\sim+85^\circ\text{C}$	0.65			$\text{V}/^\circ\text{C}$
Rise time	t_R	f=1MHz, $\lambda=800\text{nm}$, 50Ω	-	0.3	-	ns
Maximum multiplication gain	M_{max}	$\lambda=800\text{nm}$, $\phi_e=1\mu\text{W}$		100		
Reponsivity	Re	$\lambda=800\text{nm}$, $\phi_e=1\mu\text{W}$, M=1	0.50	0.55		A/W

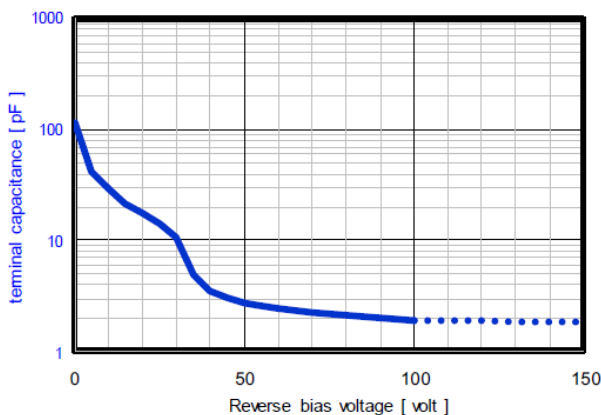
■ Spectral response with multiplication



■ Multiplication and Dark current vs Bias



■ Junction capacitance vs V_R



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