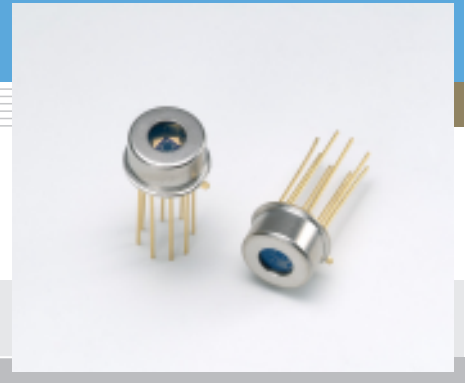


# Si APD S4402

φ1 mm quadrant APD



## Features

- Uniform element characteristics  
Quadrant format on one chip with φ1 mm active area ensures uniform characteristics between elements.
- Single power supply operation  
Allows easy and simple operation.

## Applications

- Low-light-level detection
- Laser beam positioning

### ■ General ratings

Parameter	Symbol	Value	Unit
Window material	-	Borosilicate glass	-
Active area size	A	φ1 mm/4	mm
Effective active area	-	0.17 (per 1 element)	mm <sup>2</sup>

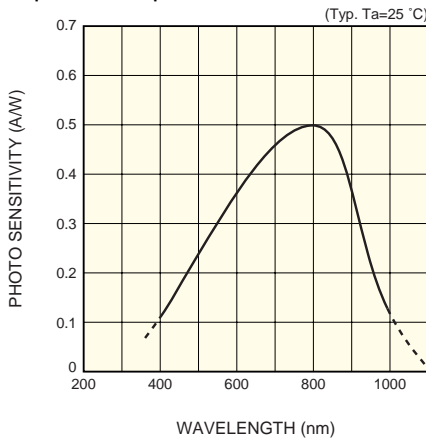
### ■ Absolute maximum ratings

Parameter	Symbol	Value	Unit
Operating temperature	T <sub>opr</sub>	-20 to +60	°C
Storage temperature	T <sub>stg</sub>	-55 to +100	°C

### ■ Electrical and optical characteristics (T<sub>a</sub>=25 °C)

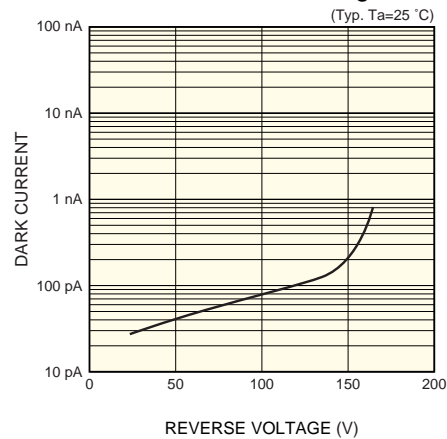
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	λ		-	400 to 1000	-	nm
Peak sensitivity wavelength	λ <sub>p</sub>	M=100	-	800	-	nm
Photo sensitivity	S	λ=800 nm, M=1	-	0.5	-	A/W
Quantum efficiency	QE	λ=800 nm, M=1	-	75	-	%
Breakdown voltage	V <sub>BR</sub>	I <sub>R</sub> =100 μA	-	150	200	V
Temperature coefficient of V <sub>BR</sub>	-			0.65	-	V/°C
Dark current	I <sub>D</sub>	M=100	-	0.4	2.0	nA
Cut-off frequency	f <sub>c</sub>	M=100, λ=800 nm R <sub>L</sub> =50 Ω, -3 dB	-	310	-	MHz
Terminal capacitance	C <sub>t</sub>	M=100, f=1 MHz	-	8	-	pF
Excess noise figure	x	M=50, f=10 kHz I <sub>o</sub> =10 nA	-	0.35	-	-

■ Spectral response



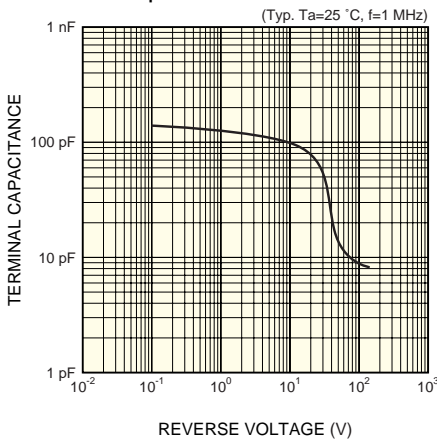
KAPD80046EA

■ Dark current vs. reverse voltage



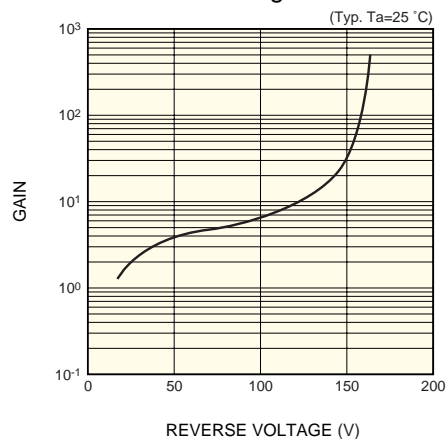
KAPD80047EA

■ Terminal capacitance vs. reverse voltage



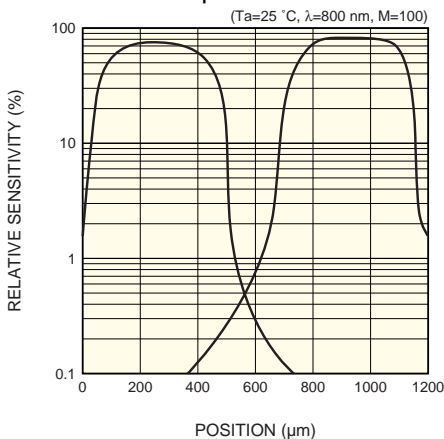
KAPD80048EA

■ Gain vs. reverse voltage



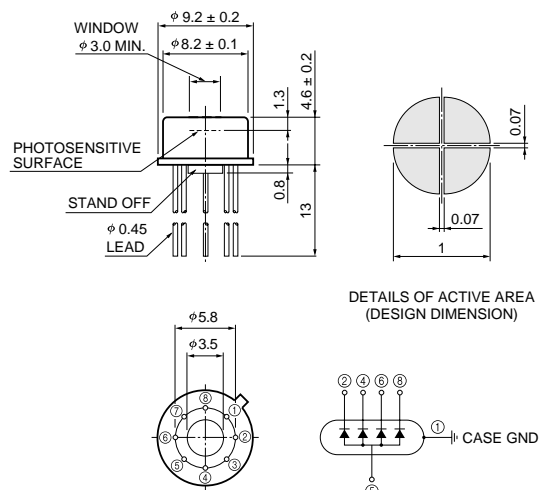
KAPD80049EA

■ Cross-talk example



KAPD80050EA

■ Dimensional outline (unit: mm)



KAPDA0021EA

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