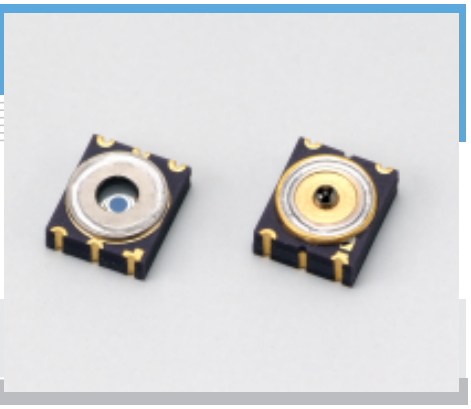
Si APD
S9717 series

High reliability, surface-mount ceramic package



S9717 series are Si APD (avalanche photodiodes) encapsulated in a surface-mount ceramic package that ensures high reliability in the same wide operating temperature range (-20 to +85 ˚C) as metal package devices. S9717 series also allows downsizing of equipment in various photometric application fields.

Features

- Surface-mount package with high reliability equivalent to metal package
  (No dark current increase after high temperature/humidity testing at 85 ˚C, 85 % for 1000 hours.)
- Small, thin package: 3.5 × 4.0 mm
- S9717-02K/-05K: Flat glass window
  S9717-05L: Lens glass window

Applications

- Rangefinder
- Laser rader
- Spatial light transmission

■ General ratings

Parameter	S9717-02K	S9717-05K	S9717-05L	Unit
Active area size	φ0.2	φ0.5	φ0.5	mm
Window material	Borosilicate glass		Borosilicate glass, φ0.8 lens	-

■ Absolute maximum ratings

Parameter	Symbol	Value	Unit
Operating temperature	Topr	-20 to +85	°C
Storage temperature	Tstg	-55 to +125	°C

■ Electrical and optical characteristics (Typ. Ta=25 °C)

Parameter	Symbol	Condition		S9717-02K	S9717-05K	S9717-05L	Unit
Spectral response range	λ			400 to 1000			nm
Peak sensitivity wavelength	λp	M=100		800			nm
Photo sensitivity	S	λ=800 nm, M=1		0.5			A/W
Breakdown voltage	V_{BR}	I_D=100 μA	Typ.	150			V
			Max.	200			
Temp. coefficient of V_{BR}	-			0.65			V/°C
Dark current	I_D	M=100	Typ.	50	100	100	pA
			Max.	500	1000	1000	
Terminal capacitance	Ct	M=100, f=1 MHz		1.5	3	3	pF
Cut-off frequency	fc	M=100, R_L=50 Ω λ=800 nm, -3 dB		1000	900	900	MHz
Excess noise figure	x	M=100		0.3			-
Gain	M	λ=800 nm		100			-

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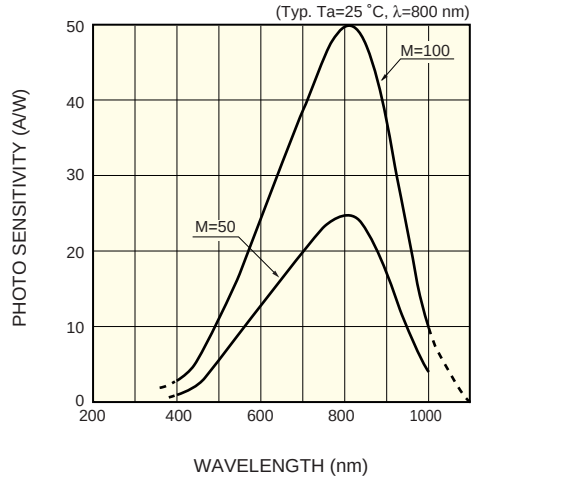
■ Spectral response



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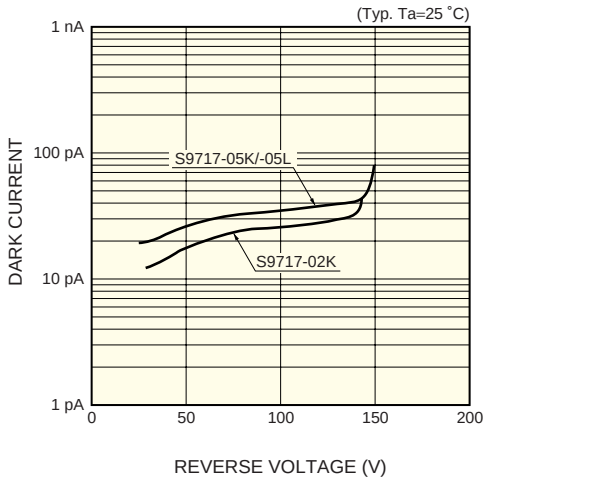
■ Dark current vs. reverse voltage



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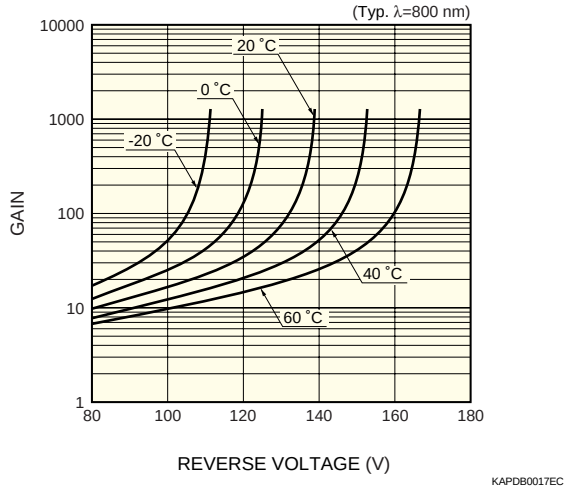
■ Gain vs. reverse voltage



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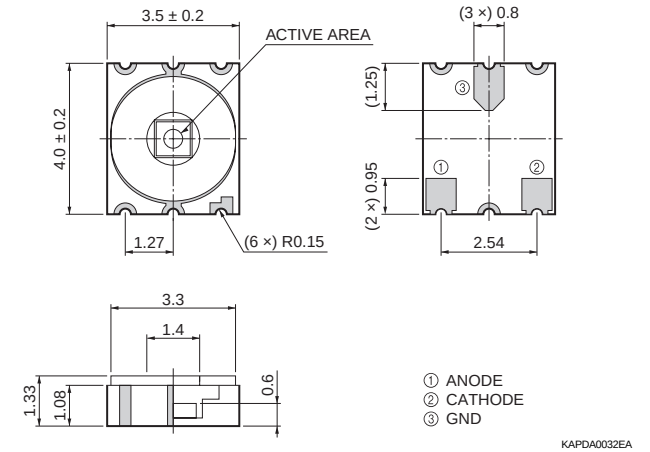
■ Dimensional outlines (uint: mm)

S9717-02K/-05K



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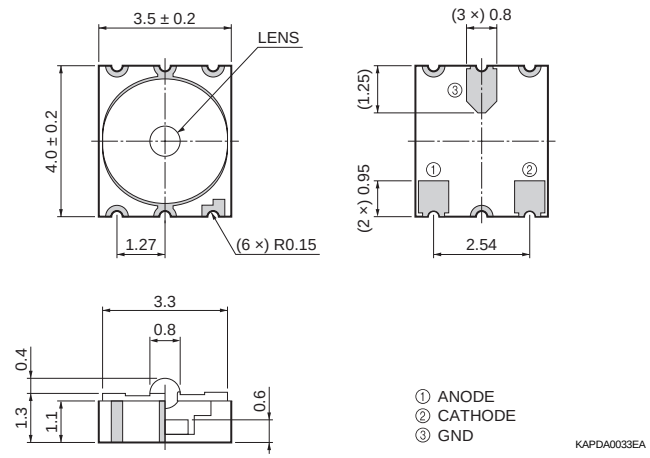
S9717-05L



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