

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 (mm)	φ0.2	φ0.5	φ0.5	mm
Window material	Borosilicate glass		Borosilicate glass, φ0.8 lens	-

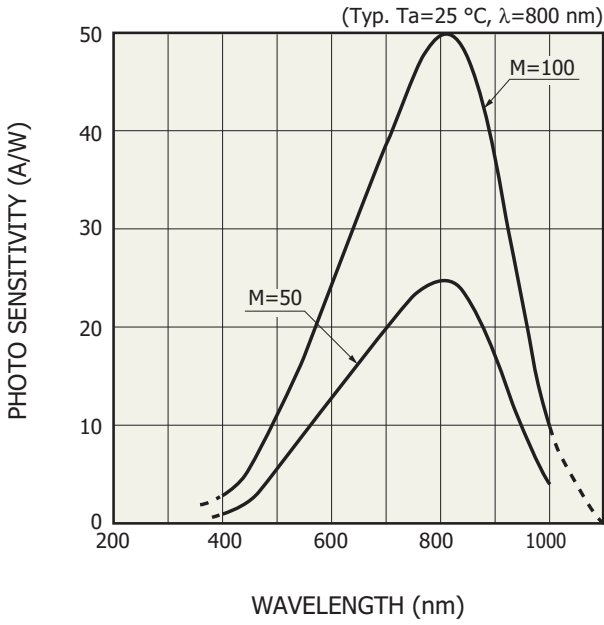
Absolute maximum ratings

Parameter	Symbol	Value	Unit
Operating temperature	T _{opr}	-20 to +85	°C
Storage temperature	T _{stg}	-55 to +125	°C

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

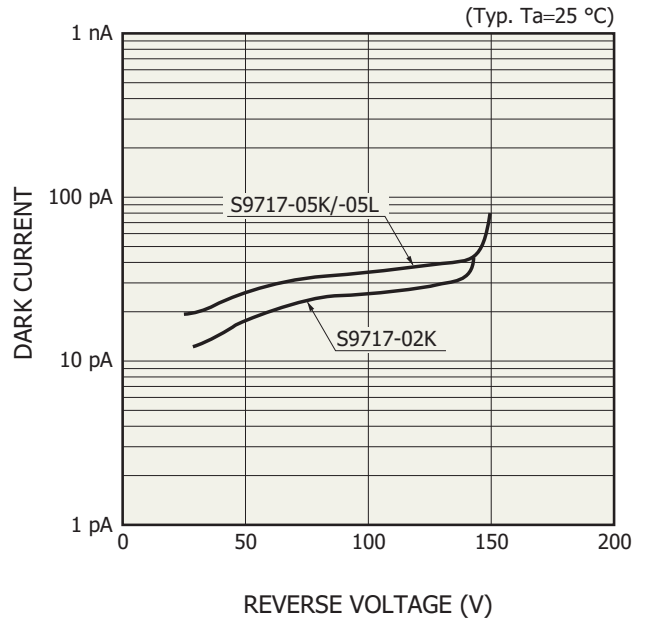
Parameter	Symbol	Condition	S9717-02K	S9717-05K	S9717-05L	Unit	
Spectral response range	λ		400 to 1000			nm	
Peak sensitivity wavelength	λ _p	M=100	800			nm	
Photo sensitivity	S	λ=800 nm, M=1	0.5			A/W	
Breakdown voltage	V _{BR}	I _D =100 μA	Typ.	150		V	
			Max.	200			
Temp. coefficient of VBR	-		0.65			V/°C	
Dark current	I _D	M=100	Typ.	50	100	100	pA
			Max.	500	1000	1000	
Terminal capacitance	C _t	M=100, f=1 MHz	1.0	2.0	2.0	pF	
Cut-off frequency	f _c	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			-	

Spectral response



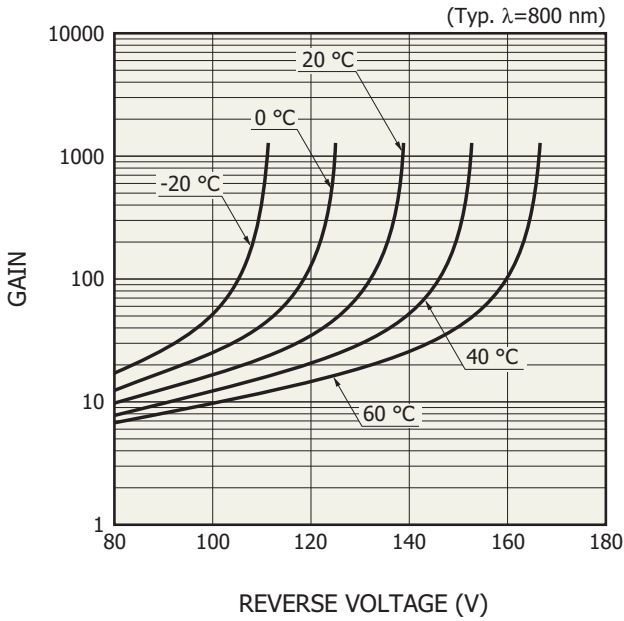
KAPDB0020EB

Dark current vs. reverse voltage



KAPDB0101EA

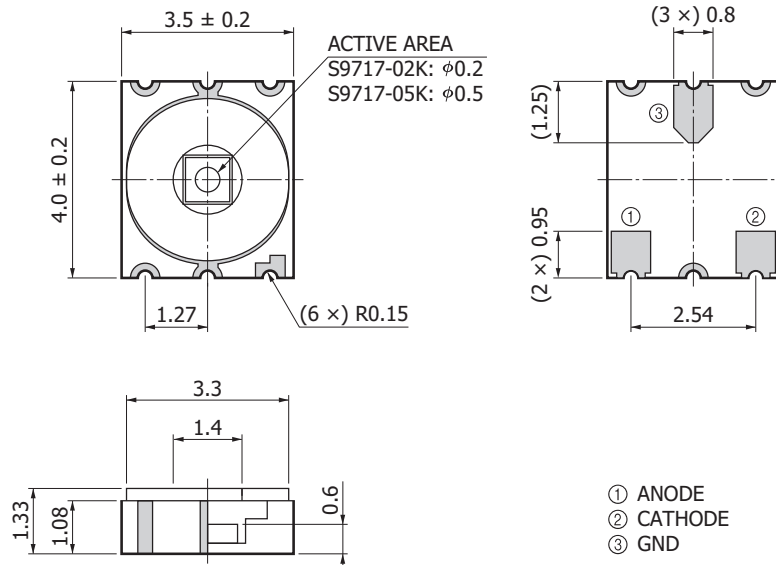
Gain vs. reverse voltage



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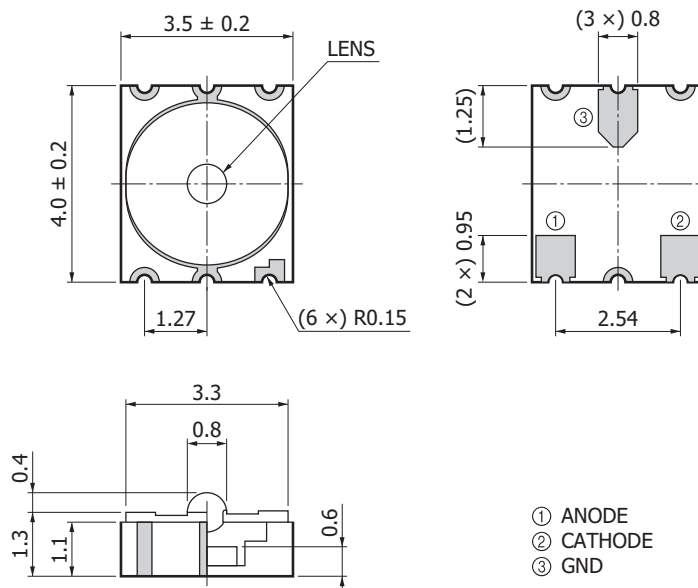
Dimensional outlines (unit: mm)

S9717-02K/-05K



KAPDA0032EB

S9717-05L



KAPDA0033EA

Information described in this material is current as of May, 2011. Product specifications are subject to change without prior notice due to improvements or other reasons. Before assembly into final products, please contact us for the delivery specification sheet to check the latest information.

Type numbers of products listed in the delivery specification sheets or supplied as samples may have a suffix "(X)" which means preliminary specifications or a suffix "(Z)" which means developmental specifications.

The product warranty is valid for one year after delivery and is limited to product repair or replacement for defects discovered and reported to us within that one year period. However, even if within the warranty period we accept absolutely no liability for any loss caused by natural disasters or improper product use.

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