

Si PIN photodiode S5821 series

High performance, high reliability Si PIN photodiodes



S5821 series is a high-speed Si PIN photodiode having high sensitivity over a wide spectral range from visible to near infrared light. S5821 series provides high performance and reliability at a low cost.

Features

- High-speed response
- Wide spectral response
- Low dark current
- Low terminal capacitance

Applications

- Optical switch
- Automobile optical sensor
- General photometry

■ General ratings / Absolute maximum ratings

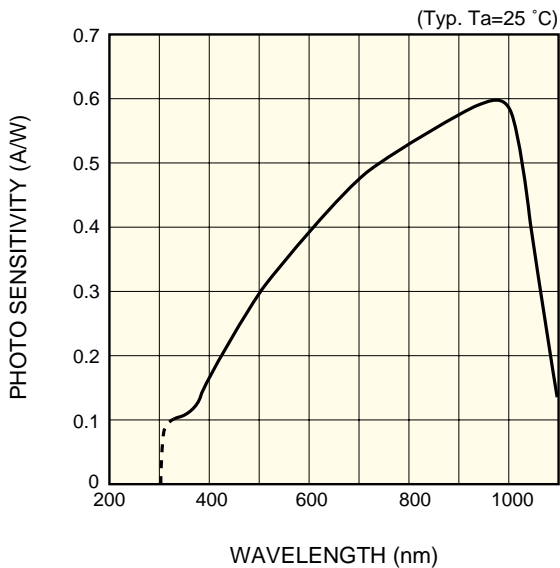
Type No.	Dimensional outline/ Window material *	Package (mm)	Active area size (mm)	Effective active area (mm ²)	Absolute maximum ratings			
					Reverse voltage V _R Max. (V)	Power dissipation P (mW)	Operating temperature T _{opr} (°C)	Storage temperature T _{stg} (°C)
S5821	①/K	TO-18	φ1.2	1.1	20	50	-40 to +100	-55 to +125
S5821-01	②/L							
S5821-02	③/K							
S5821-03	④/L							

■ Electrical and optical characteristics (Typ. T_a=25 °C, unless otherwise noted)

Type No.	Spectral response range λ (nm)	Peak sensitivity wavelength λ _p (nm)	Photo sensitivity S (A/W)				Short circuit current I _{sc} 100 L _x (μA)	Dark current I _D V _R =10 V (nA)		Temp. coefficient of I _D T _{CID} (times/°C)	Cut-off frequency f _c V _R =10 V (MHz)	Terminal capacitance C _t V _R =10 V f=1 MHz (pF)	NEP V _R =10 V λ=λ _p (W/Hz ^{1/2})
			λ _p	660 nm	780 nm	830 nm		Typ.	Max.				
S5821	320 to 1100	960	0.6	0.45	0.52	0.55	1.1	0.05	2	1.15	25	3	6.7 × 10 ⁻¹⁵
S5821-01							12						
S5821-02							1.1						
S5821-03							12						

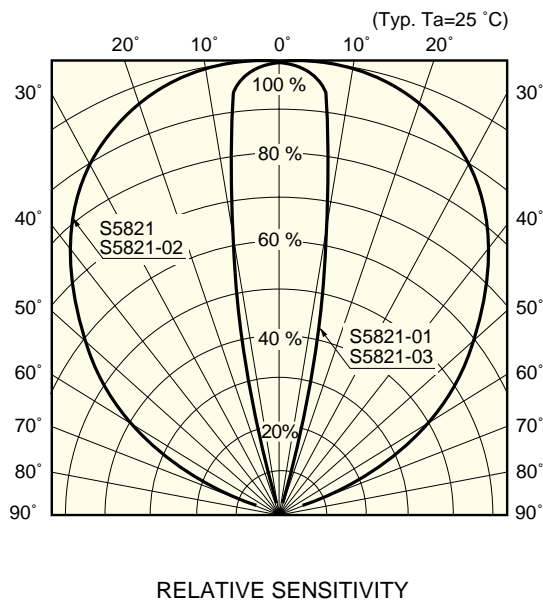
* Window material K: borosilicate glass, L: lens type borosilicate glass

■ Spectral response



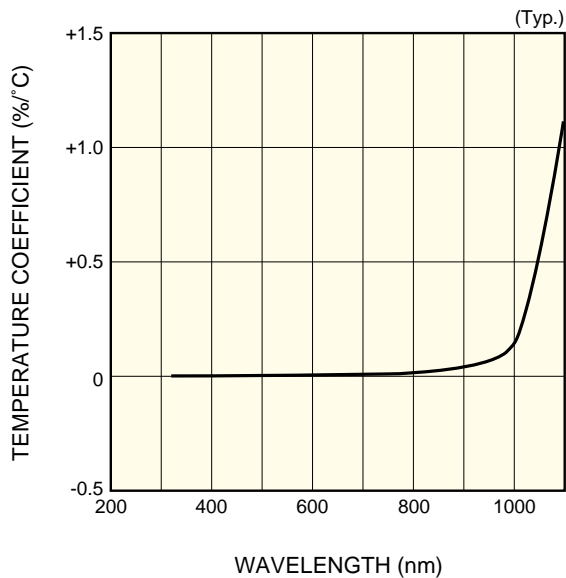
KPINB0151EA

■ Directivity



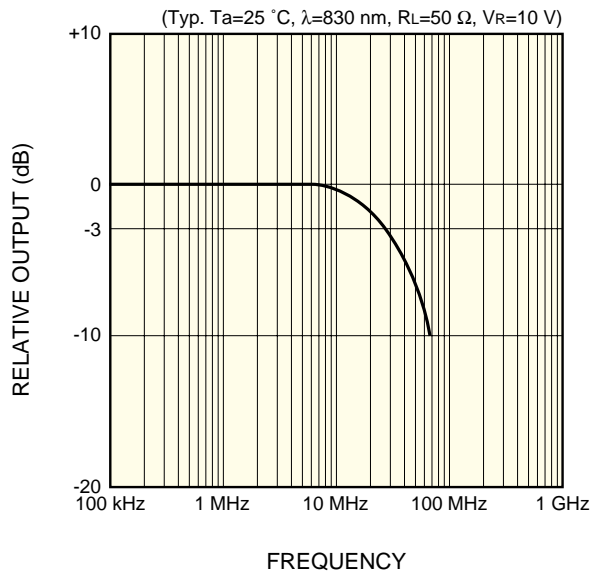
KPINB0091EA

■ Photo sensitivity temperature characteristic



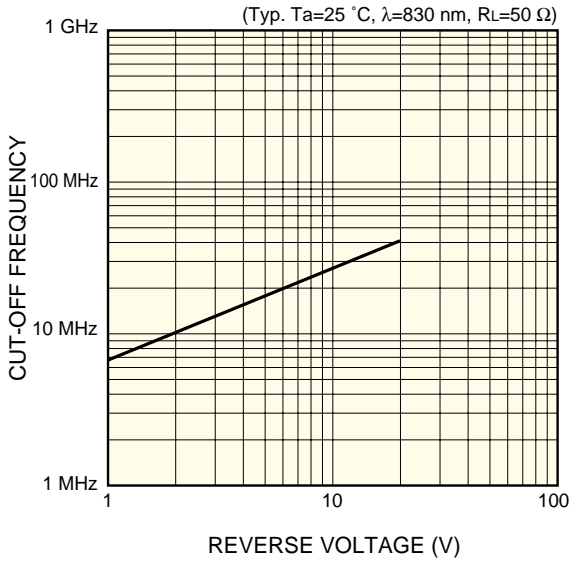
KPINB0152EA

■ Frequency response



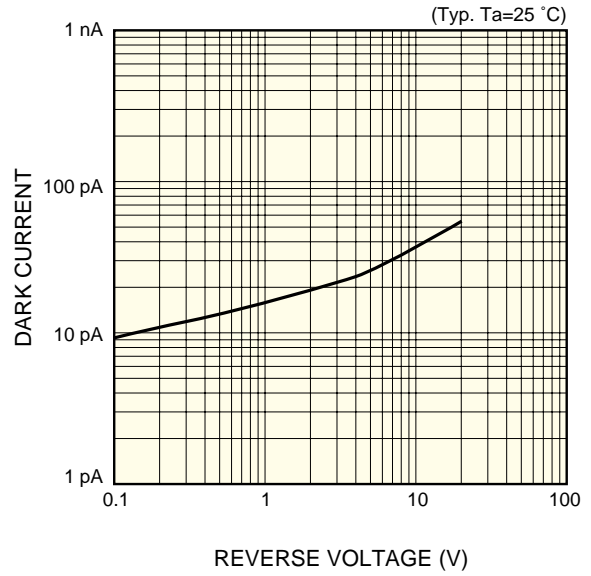
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■ Cut-off frequency vs. reverse voltage



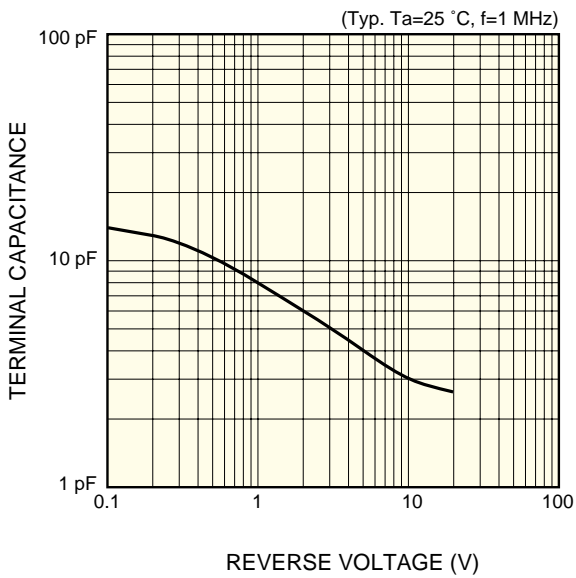
KPINB0154EA

■ Dark current vs. reverse voltage



KPINB0155EA

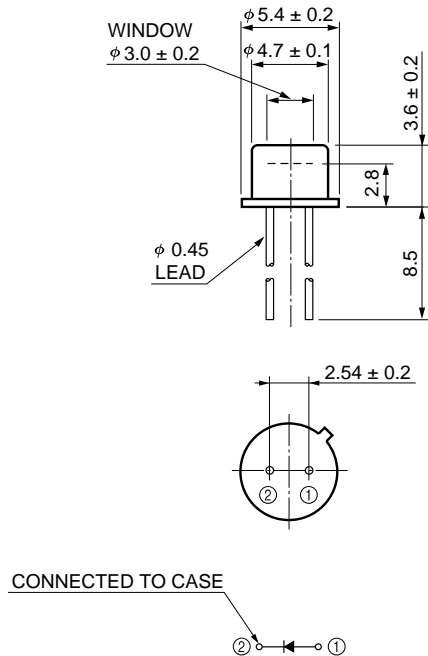
■ Terminal capacitance vs. reverse voltage



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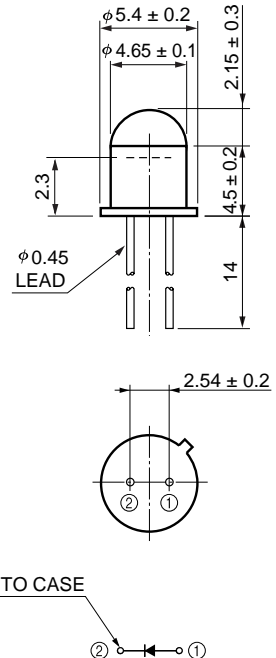
Dimensional outline (unit: mm)

① S5821



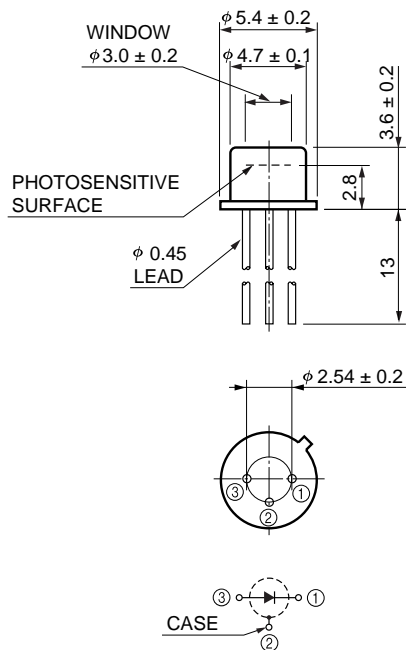
KPINA0074EB

② S5821-01



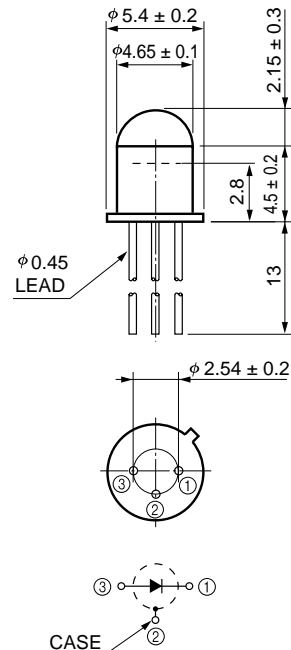
KPINA0075EA

③ S5821-02



KPINA0022EB

④ S5821-03



KPINA0046EA