

PHOTODIODE

# 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 <sup>2</sup> )	Absolute maximum ratings			
					Reverse voltage VR Max. (V)	Power dissipation P (mW)	Operating temperature Topr (°C)	Storage temperature Tstg (°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. Ta=25 °C, unless otherwise noted)

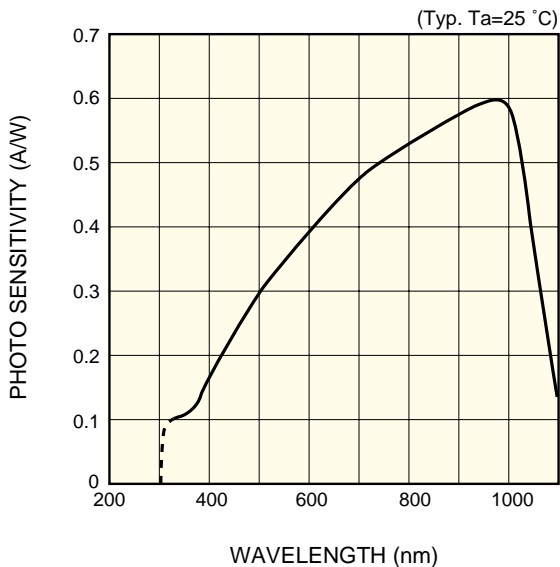
Type No.	Spectral response range λ (nm)	Peak sensitivity wavelength λp (nm)	Photo sensitivity S (A/W)				Short circuit current Isc 100 lx (μA)	Dark current ID VR=10 V (nA)		Temp. coefficient of ID TCID (times/°C)	Cut-off frequency fc VR=10 V (MHz)	Terminal capacitance Ct VR=10 V f=1 MHz (pF)	NEP VR=10 V λ=λp (W/Hz <sup>1/2</sup> )
			λp	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 <sup>-15</sup>
S5821-01							12						
S5821-02							1.1						
S5821-03							12						

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



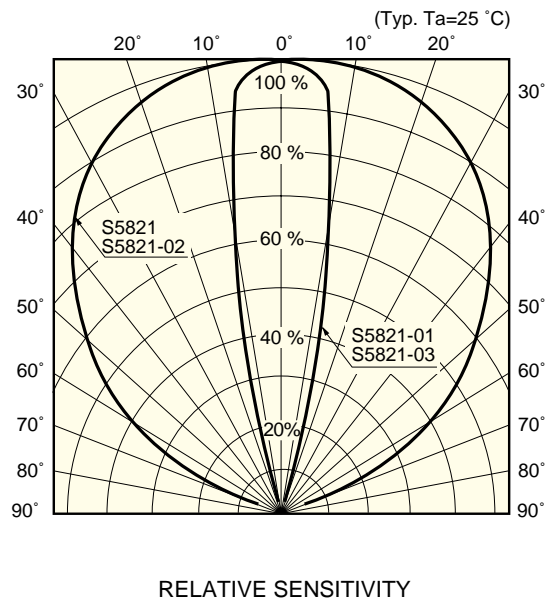
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## ■ Spectral response



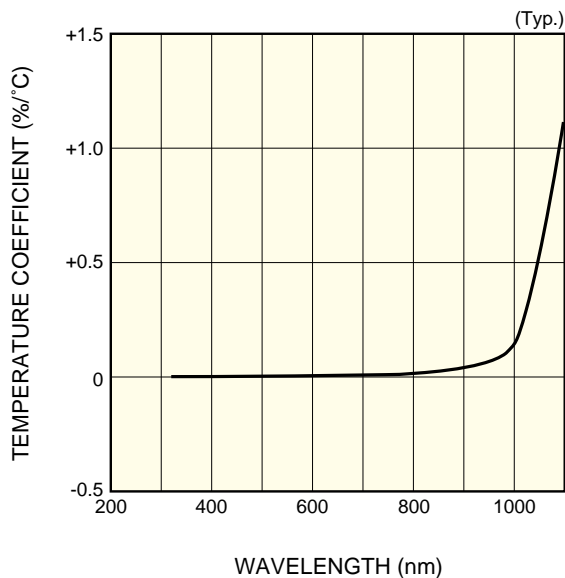
KPINB0151EA

## ■ Directivity



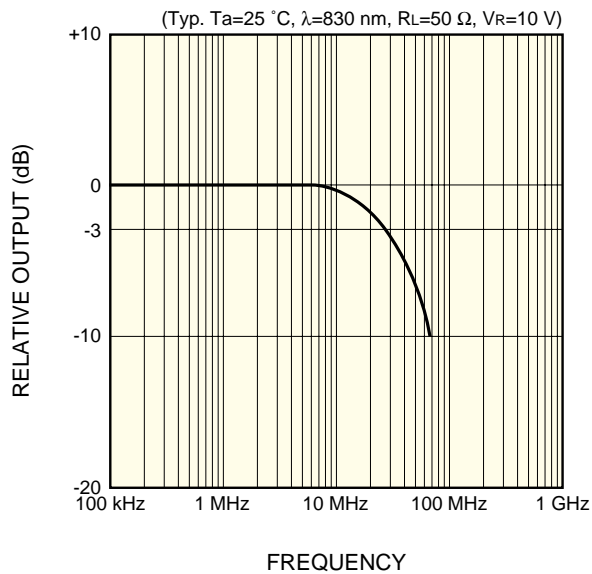
KPINB0091EA

## ■ Photo sensitivity temperature characteristic



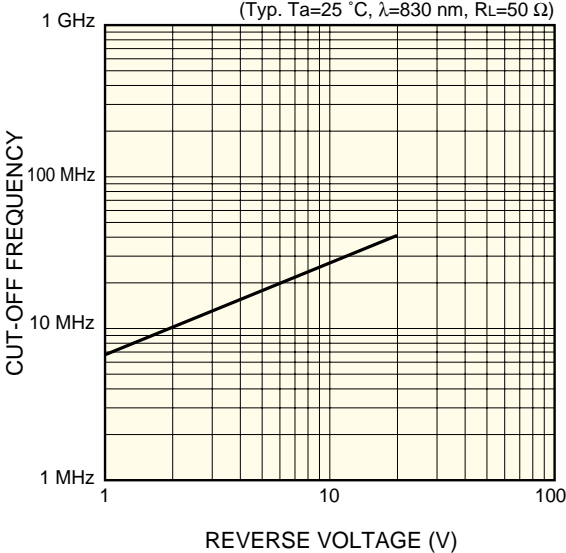
KPINB0152EA

## ■ Frequency response



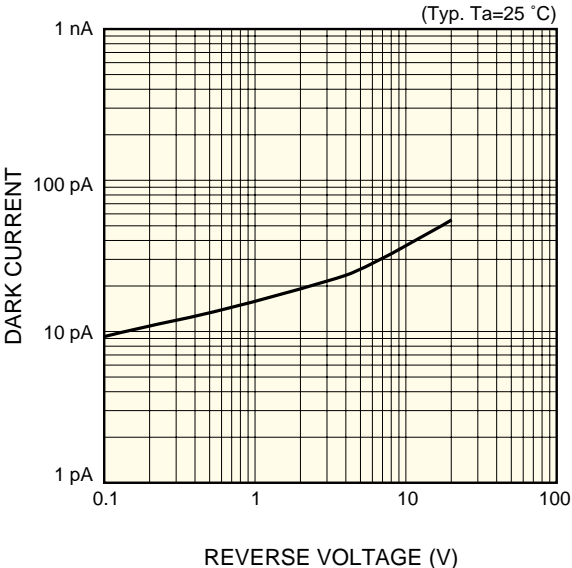
KPINB0153EA

■ Cut-off frequency vs. reverse voltage



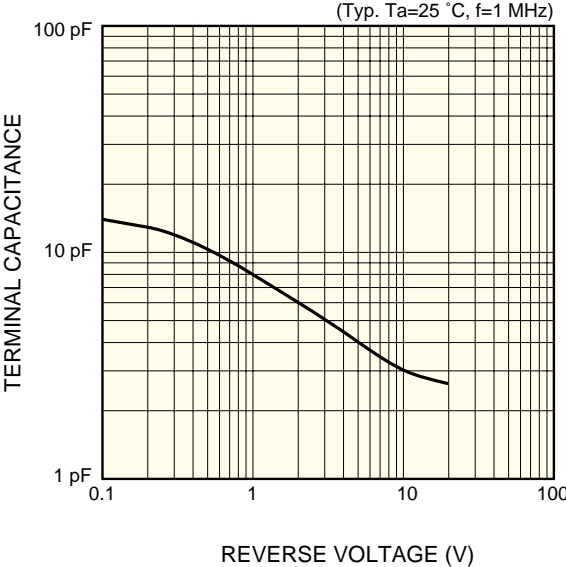
KPINB0154EA

■ Dark current vs. reverse voltage



KPINB0155EA

■ Terminal capacitance vs. reverse voltage

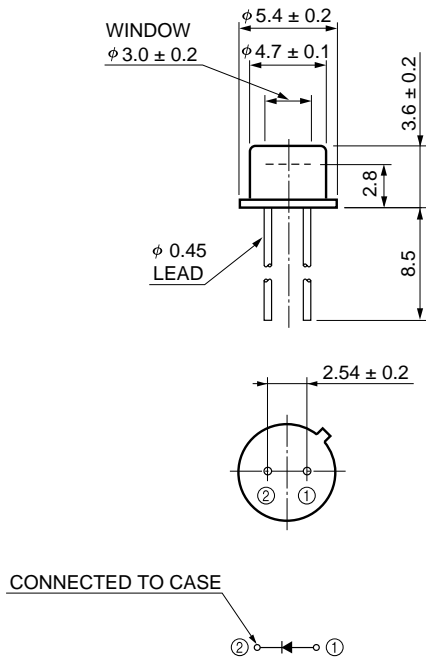


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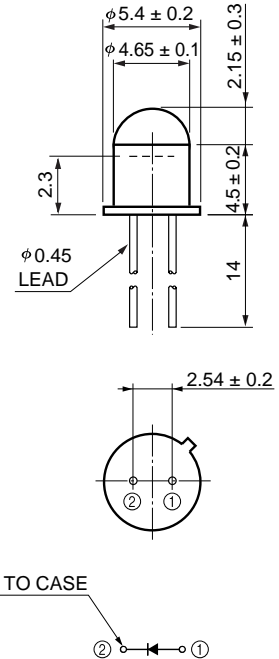
## Dimensional outline (unit: mm)

① S5821



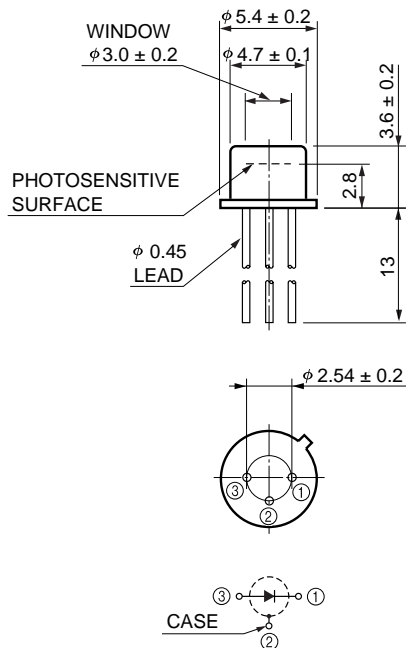
KPINA0074EB

② S5821-01



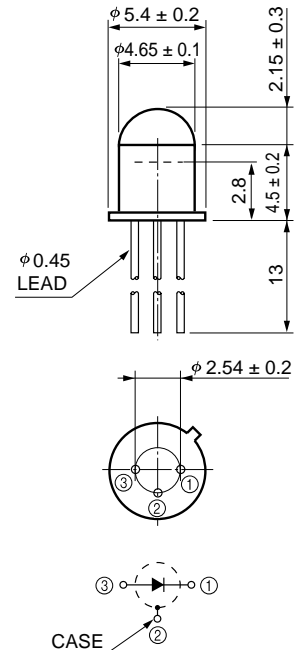
KPINA0075EA

③ S5821-02



KPINA0022EB

④ S5821-03



KPINA0046EA