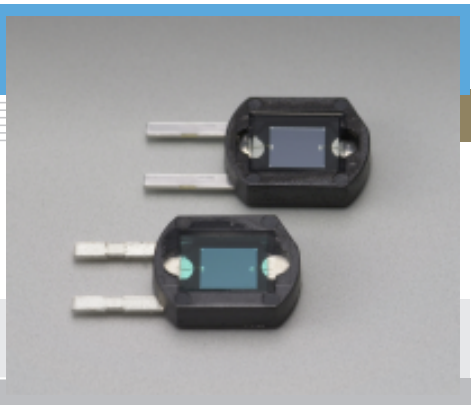
Si photodiode
S1787 series

Plastic package photodiode with low dark current



S1787 series is a family of plastic package photodiodes that offer low dark current. Plastic package used is light-impervious, so no stray light can reach the active area from the side or backside. This allows reliable optical measurements in the visible to near infrared range, over a wide dynamic range from low light levels to high light levels.

Features

- S1787-04: For visible range
  S1787-08: For visible to IR range
  S1787-12: For visible to near IR range

Applications

- Exposure meter
- Illuminometer
- Camera auto exposure
- Stroboscope light control
- Copier
- Display light control
- Optical switch, etc.

■ General ratings / Absolute maximum ratings

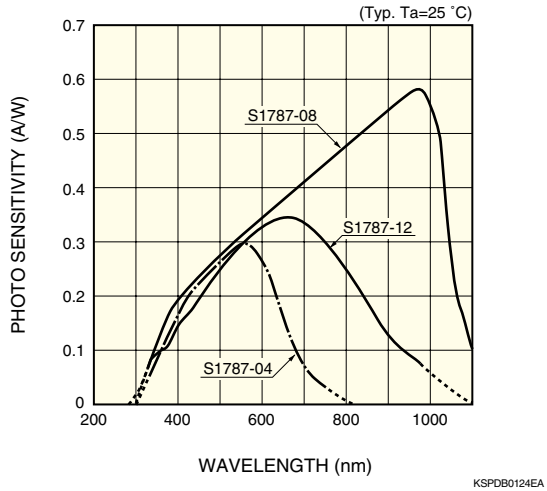
Type No.	Window material *	Active area size (mm)	Effective active area (mm^2)	Absolute maximum ratings		
				Reverse voltage V_R Max. (V)	Operating temperature Topr (°C)	Storage temperature Tstg (°C)
S1787-04	V	2.4 × 2.8	6.6	10	-10 to +60	-20 to +70
S1787-08	R					
S1787-12	I					

* Window material R: resin coating, V: visual-compensation filter, I: infrared-cutting filter

■ 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)			Infrared sensitivity ratio (%)	Short circuit current Isc 100 lx (μA)	Temp. coefficient of Isc (%/°C)	Dark current I_D V_R=1 V Max. (pA)	Temp. coefficient of I_D T_{CID} (times/°C)	Rise time tr V_R=0 V R_L=1 kΩ (μs)	Terminal capacitance Ct V_R=0 V f=10 kHz (pF)	Shunt resistance Rsh V_R=10 mV	
			λp	GaP LED 560 nm	He-Ne laser 633 nm								Min. (GΩ)	Typ. (GΩ)
S1787-04	320 to 730	560	0.3	0.3	0.19	10	0.65	-0.01	10	1.12	2.5	700	10	100
S1787-08	320 to 1100	960	0.58	0.33	0.38	-	5.6	0.1						
S1787-12	320 to 1000	650	0.35	0.3	0.34		2.3		20		0.5	200	1	10

■ Spectral response



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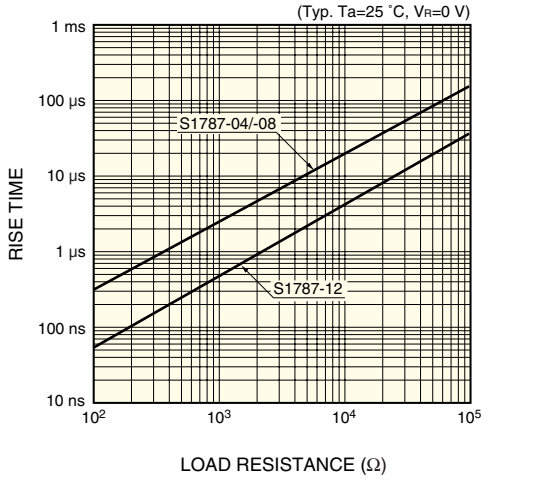
■ Rise time vs. load resistance



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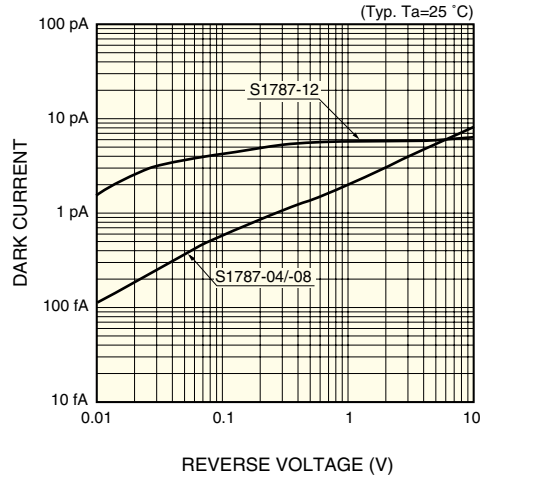
■ Dark current vs. reverse voltage



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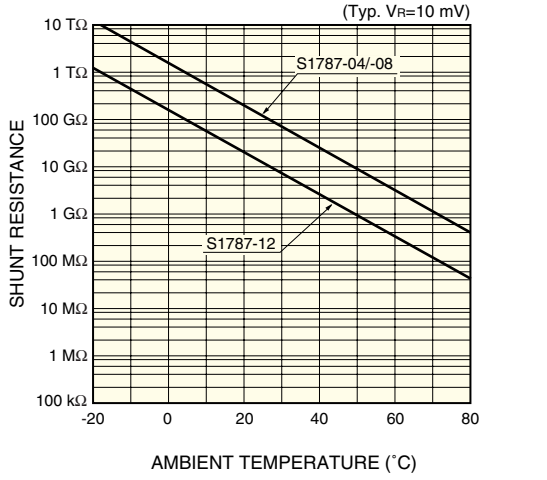
■ Shunt resistance temperature characteristics



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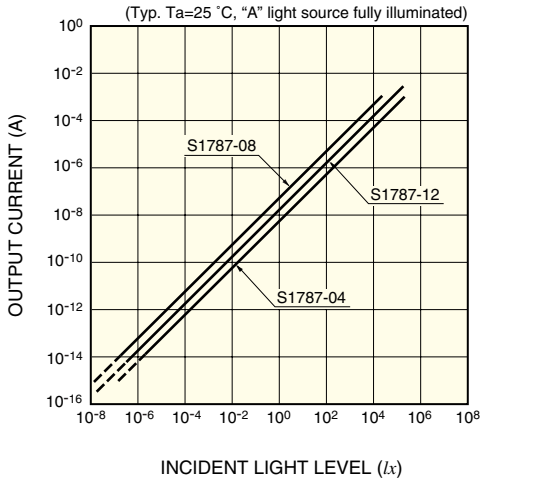
■ Short circuit current linearity



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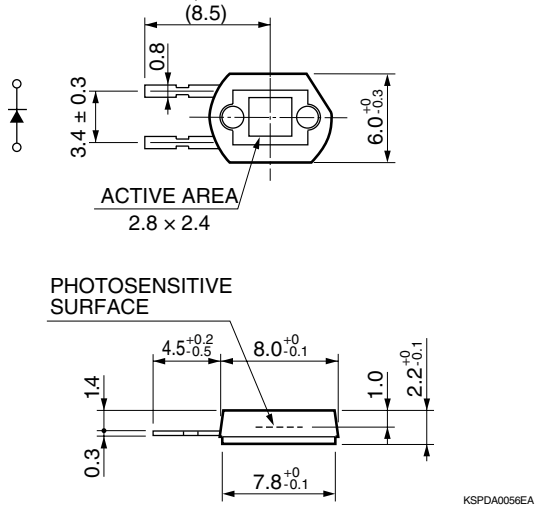
■ Dimensional outline (unit: mm, tolerance unless otherwise noted: ±0.15)



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