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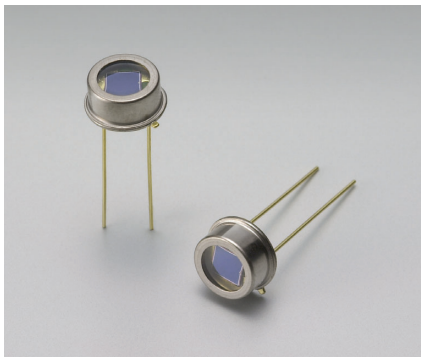
PHOTON IS OUR BUSINESS

Si PIN photodiodes



S1223 series

For visible to near IR, precision photometry

Features

- **High sensitivity in visible to near infrared range**
- **High reliability**
- **High-speed response**
  S1223: fc=30 MHz
  S1223-01: fc=20 MHz
- **Low capacitance**

Applications

- **Optical measurement equipment**
- **Analytical equipment, etc.**

Structure

Parameter	S1223	S1223-01	Unit
Dimensional outline	(1)	(2)	-
Window material	Borosilicate glass		-
Package	TO-5		-
Photosensitive area size	2.4 × 2.8	3.6 × 3.6	mm
Effective photosensitive area	6.6	13	mm^2

Absolute maximum ratings

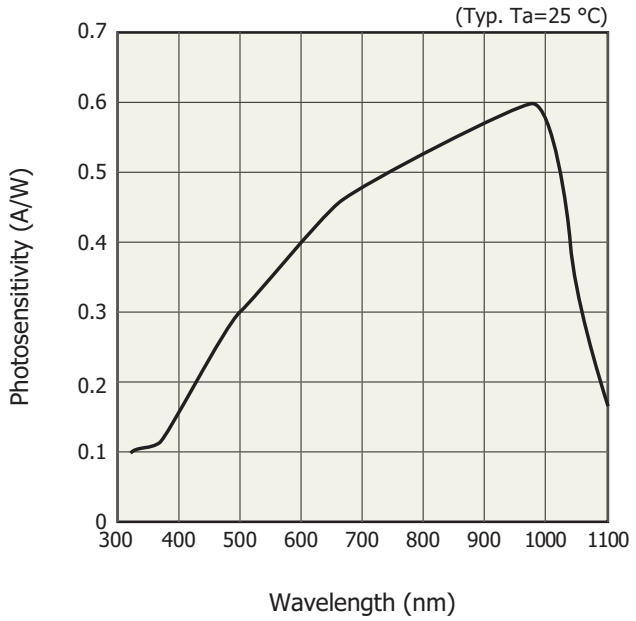
Parameter	Symbol	S1223	S1223-01	Unit
Reverse voltage	V_R max	30		V
Power dissipation	P	100		mW
Operating temperature	Topr	-40 to +100		°C
Storage temperature	Tstg	-55 to +125		°C

Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

Electrical and optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	S1223			S1223-01			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Spectral response range	λ		-	320 to 1100	-	-	320 to 1100	-	nm
Peak sensitivity wavelength	λp		-	960	-	-	960	-	nm
Photosensitivity	S	λ=λp	-	0.6	-	-	0.6	-	A/W
		λ=660 nm	-	0.45	-	-	0.45	-	
		λ=780 nm	-	0.52	-	-	0.52	-	
		λ=830 nm	-	0.54	-	-	0.54	-	
Short circuit current	Isc	100 *lx*	5	6.3	-	10	13	-	μA
Dark current	I_D	V_R=20 V	-	0.1	10	-	0.2	10	nA
Temp. coefficient of I_D	T_{CID}		-	1.15	-	-	1.15	-	times/°C
Cutoff frequency	fc	V_R=20 V, -3 dB	-	30	-	-	20	-	MHz
Terminal capacitance	Ct	V_R=20 V, f=1 MHz	-	10	-	-	20	-	pF
Noise equivalent power	NEP	V_R=20 V, λ=λp	-	9.4×10^{-15}	-	-	1.3×10^{-14}	-	$W/Hz^{1/2}$

Spectral response



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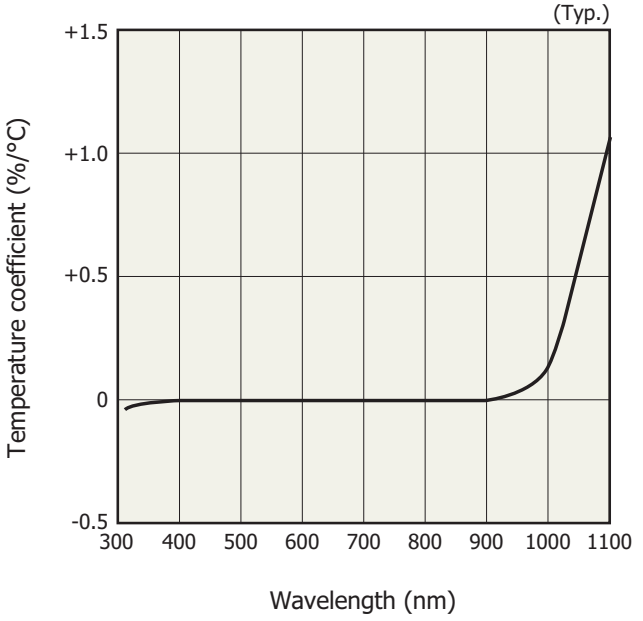
Photosensitivity temperature characteristic



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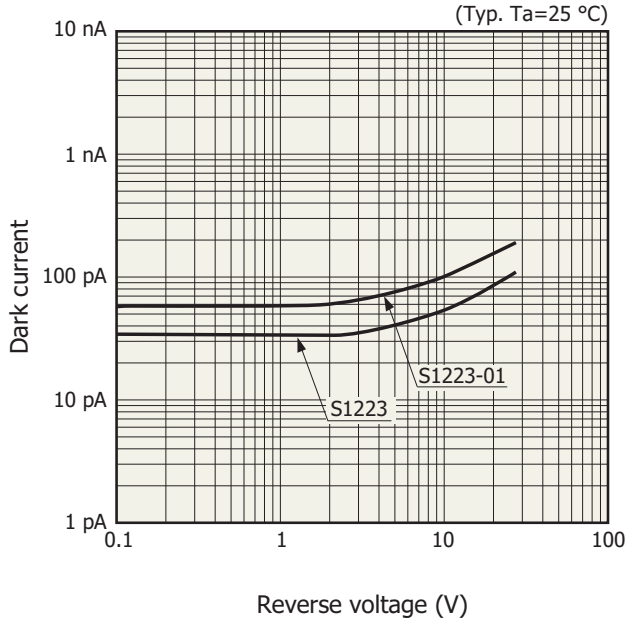
Dark current vs. reverse voltage



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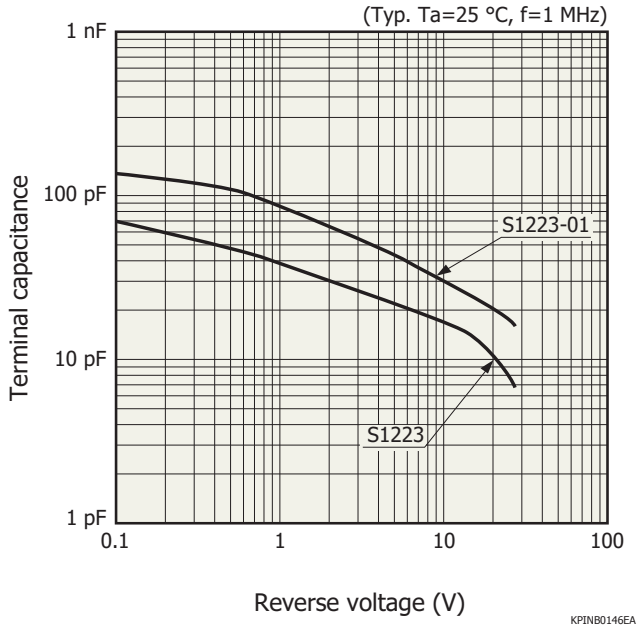
Terminal capacitance vs. reverse voltage



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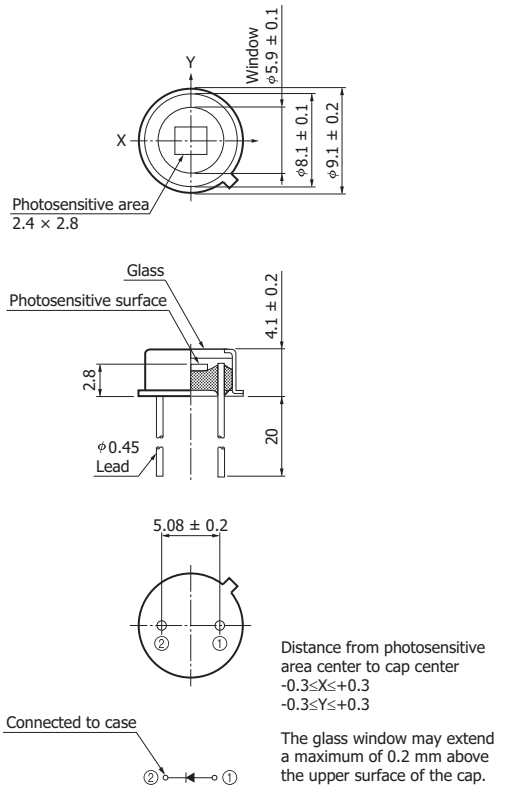
Dimensional outlines (unit: mm)

(1) S1223



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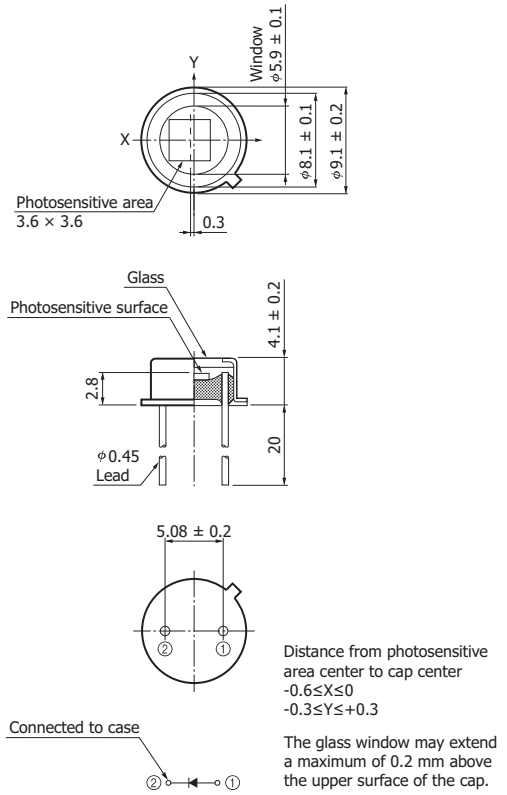
(2) S1223-01



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