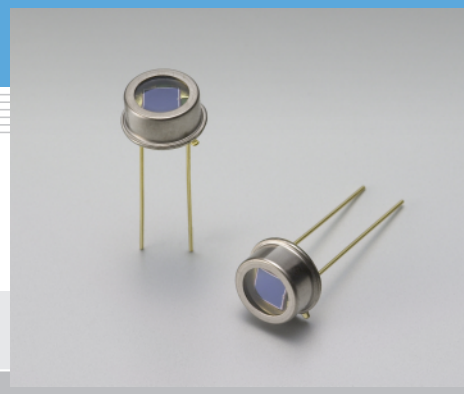


Si PIN photodiode S1223 series

For visible to IR, precision photometry



Features

- High sensitivity
- High reliability
- High-speed response
S1223: $f_c=30$ MHz
S1223-01: $f_c=20$ MHz
- Low capacitance

Applications

- Optical measurement equipment
- Analytical equipment, etc.

General ratings

Parameter	Symbol	S1223	S1223-01	Unit
Window material	-	borosilicate glass		-
Package	-	TO-5		-
Active area size	A	2.4×2.8	3.6×3.6	mm
Effective active area	-	6.6	13	mm ²

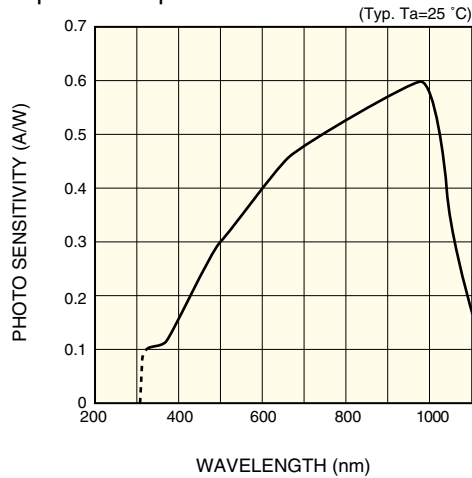
Absolute maximum ratings

Parameter	Symbol	S1223	S1223-01	Unit
Reverse voltage	V_R Max.	30		V
Power dissipation	P	100		mW
Operating temperature	T_{opr}	-40 to +100		°C
Storage temperature	T_{stg}	-55 to +125		°C

Electrical and optical characteristics ($T_a=25$ °C)

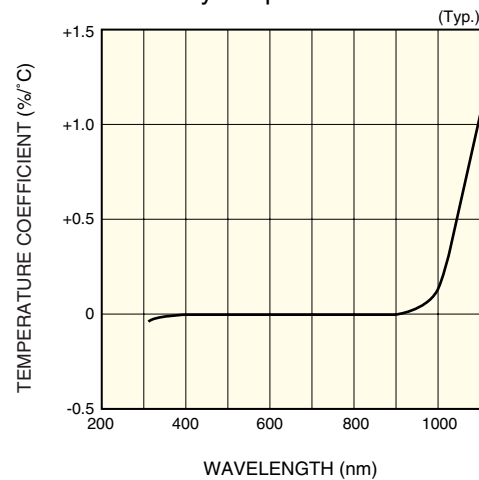
Parameter	Symbol	Condition	S1223			S1223-01			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Spectral response range	λ		-	320 to 1100	-	-	320 to 1100	-	nm
Peak sensitivity wavelength	λ_p		-	960	-	-	960	-	nm
Photo sensitivity	S	$\lambda=\lambda_p$	-	0.6	-	-	0.6	-	A/W
		$\lambda=660$ nm	-	0.45	-	-	0.45	-	
		$\lambda=780$ nm	-	0.52	-	-	0.52	-	
		$\lambda=830$ nm	-	0.54	-	-	0.54	-	
Short circuit current	I_{sc}	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	TC_{ID}		-	1.15	-	-	1.15	-	times/°C
Cut-off frequency	f_c	$V_R=20$ V, -3 dB	-	30	-	-	20	-	MHz
Terminal capacitance	C_t	$V_R=20$ V, $f=1$ MHz	-	10	-	-	20	-	pF
Noise equivalent power	NEP	$V_R=20$ V	-	9.4×10^{-15}	-	-	1.3×10^{-14}	-	W/Hz ^{1/2}

■ Spectral response



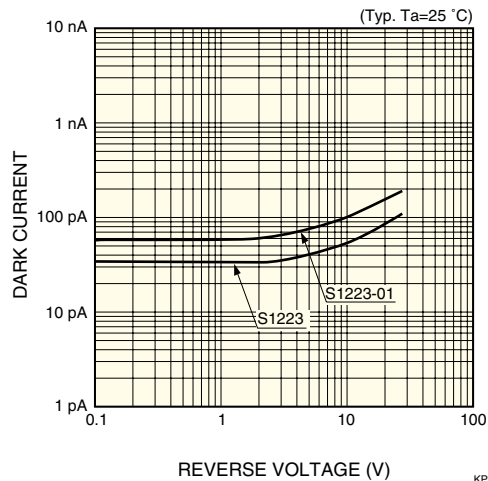
KPINB0143EA

■ Photo sensitivity temperature characteristic



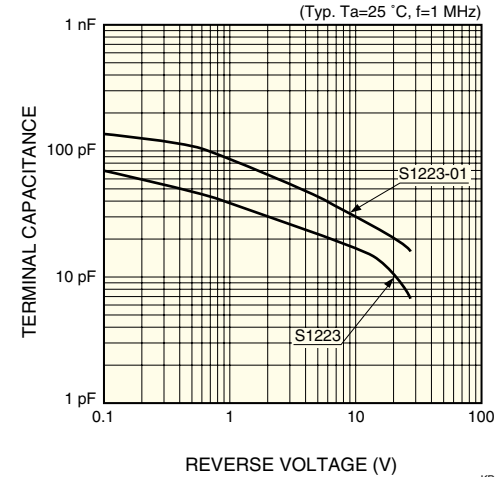
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■ Dark current vs. reverse voltage



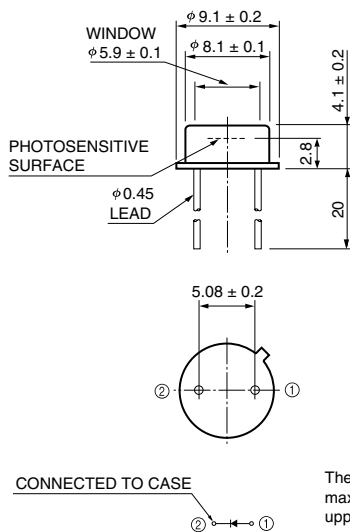
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■ Terminal capacitance vs. reverse voltage



KPINB0146EA

■ Dimensional outline (unit: mm)



The glass window may extend a maximum of 0.2 mm above the upper surface of the cap.

KPINA0073EA

HAMAMATSU

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