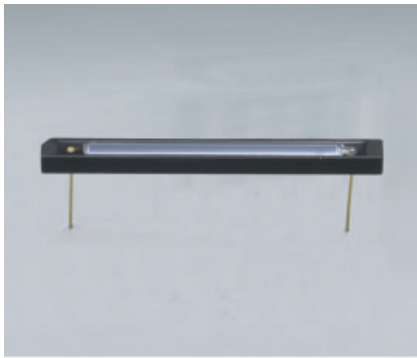


# Si photodiode



S2551

## For visible to infrared precision photometry

S2551 is a Si photodiode having a long active area of  $1.2 \times 29.1$  mm, designed for visible to infrared precision photometry.

### Features

- Long, narrow active area:  $1.2 \times 29.1$  mm
- High sensitivity
- Low capacitance

### Applications

- Analytical instruments
- Optical measurement equipment

### Absolute maximum ratings

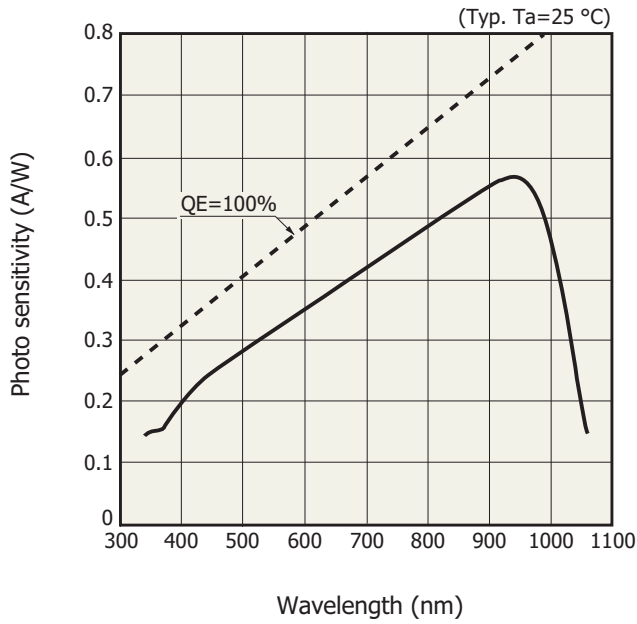
Parameter	Symbol	Value	Unit
Reverse voltage	$V_R$ Max.	30	V
Operating temperature	$T_{opr}$	-20 to +60	°C
Storage temperature	$T_{stg}$	-20 to +80	°C

Note: Absolute maximum ratings are the values that must not be exceeded at any time. If even one of the absolute maximum ratings is exceeded even for a moment, the product quality may be impaired. Always be sure to use the product within the absolute maximum ratings.

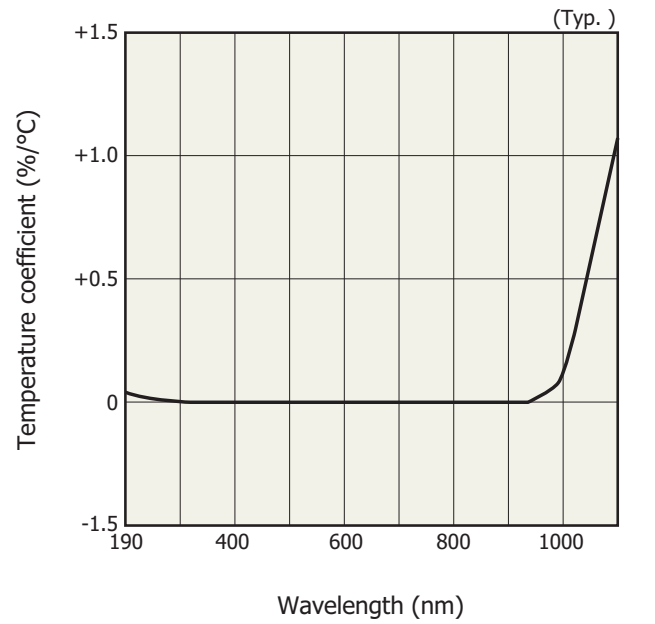
### Electrical and optical characteristics ( $T_a=25$ °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	$\lambda$		-	340 to 1060	-	nm
Peak sensitivity wavelength	$\lambda_p$		-	920	-	nm
Photo sensitivity	S	$\lambda=\lambda_p$	-	0.6	-	A/W
		$\lambda=663$ nm	-	0.37	-	A/W
Short circuit current	$I_{sc}$	100 lx	24	30	-	$\mu$ A
Dark current	$I_D$	$V_R=10$ mV	-	-	1	nA
Temperature coefficient of $I_D$	$T_{CID}$		-	1.15	-	times/°C
Rise time	$t_r$	$V_R=0$ V, $R_L=1$ k $\Omega$	-	1.4	-	$\mu$ s
Terminal capacitance	$C_t$	$V_R=0$ V, $f=10$ kHz	-	350	-	pF
Shunt resistance	Rsh	$V_R=10$ mV	0.01	0.03	-	G $\Omega$
Noise equivalent power	NEP	$V_R=0$ V, $\lambda=\lambda_p$	-	$3.9 \times 10^{-14}$	-	W/Hz <sup>1/2</sup>

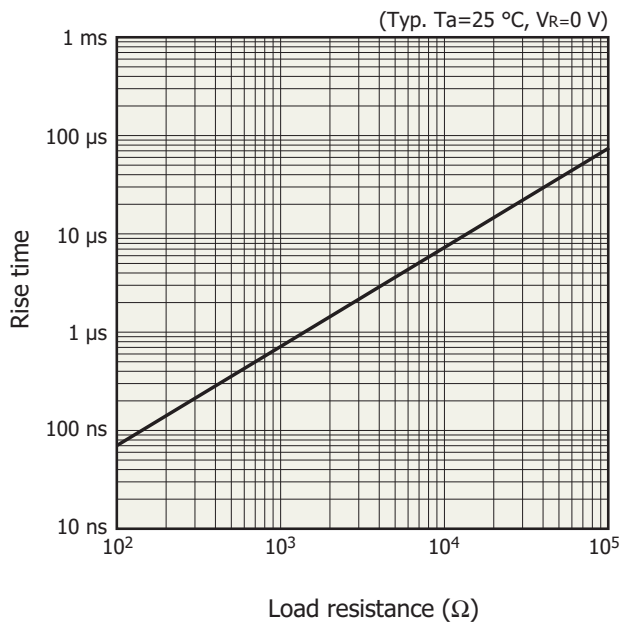
**Spectral response**



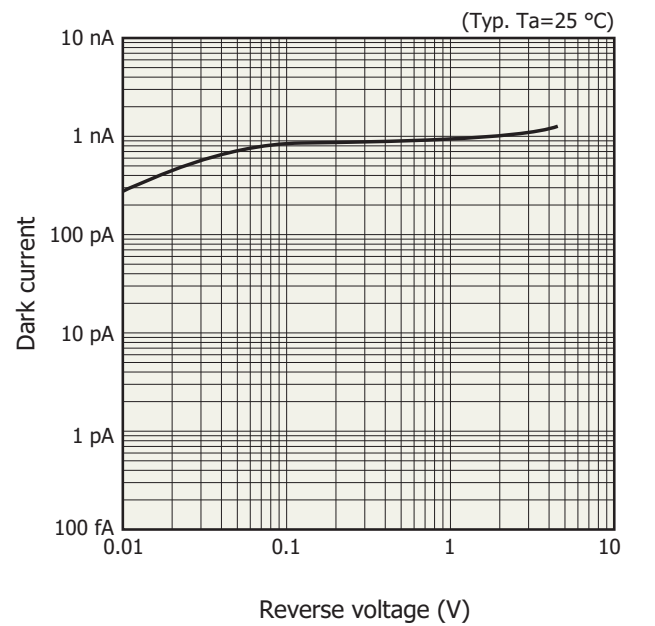
**Photo sensitivity temperature characteristic**



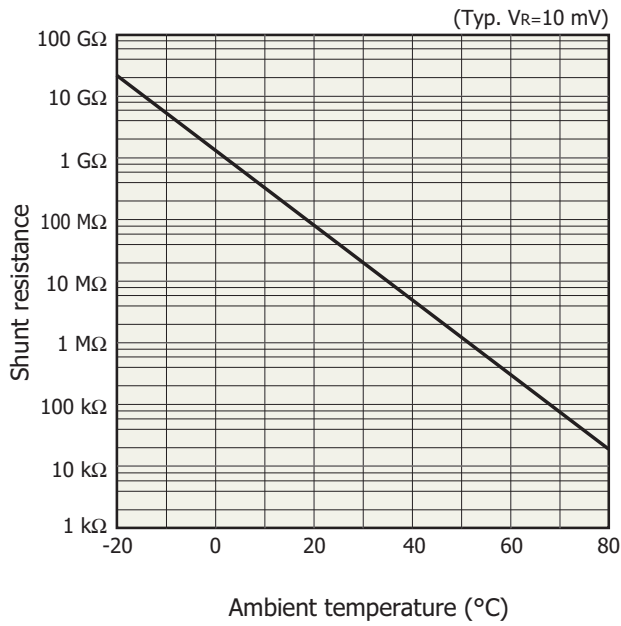
**Rise time vs. load resistance**



**Dark current vs. reverse voltage**

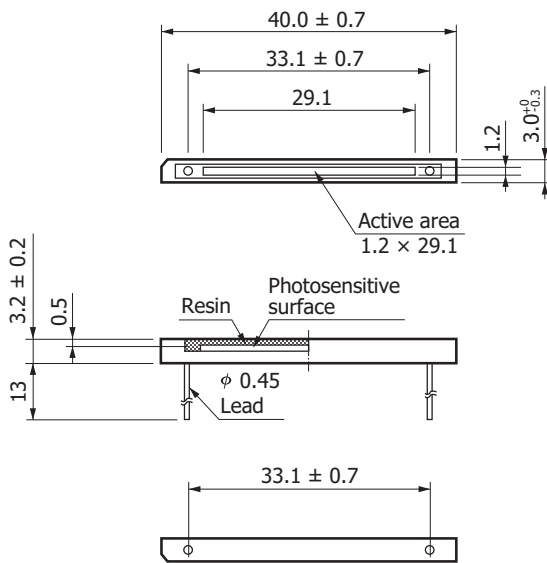


### Shunt resistance vs. ambient temperature



KSPD80176EB

### Dimensional outline (unit: mm)



The resin potting may extend a maximum of 0.1 mm beyond the upper surface of the package.

KSPDA0116EB

Information described in this material is current as of October, 2011.

Product specifications are subject to change without prior notice due to improvements or other reasons. Before assembly into final products, please contact us for the delivery specification sheet to check the latest information.

Type numbers of products listed in the delivery specification sheets or supplied as samples may have a suffix "(X)" which means preliminary specifications or a suffix "(Z)" which means developmental specifications.

The product warranty is valid for one year after delivery and is limited to product repair or replacement for defects discovered and reported to us within that one year period. However, even if within the warranty period we accept absolutely no liability for any loss caused by natural disasters or improper product use.

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# **HAMAMATSU**

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