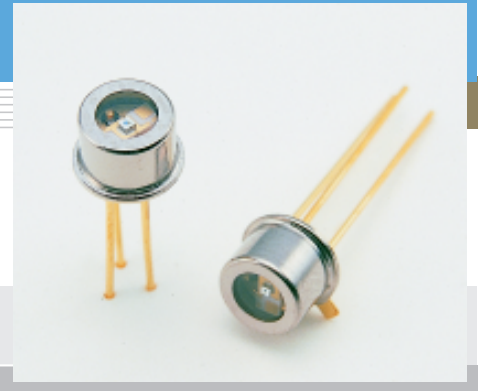


# Si PIN photodiode S7911, S7912

High-speed response at low reverse voltage



## Features

- High-speed response at low reverse voltage  
S7911:  $f_c=2$  GHz ( $V_R=2$  V)  
S7912:  $f_c=1.5$  GHz ( $V_R=2$  V)
- Low terminal capacitance  
S7911:  $C_t=0.45$  pF ( $V_R=2$  V)  
S7912:  $C_t=0.85$  pF ( $V_R=2$  V)
- 3-pin TO-18 package
- Active area  
S7911:  $\phi 0.1$  mm  
S7912:  $\phi 0.2$  mm

## Applications

- Optical fiber communications

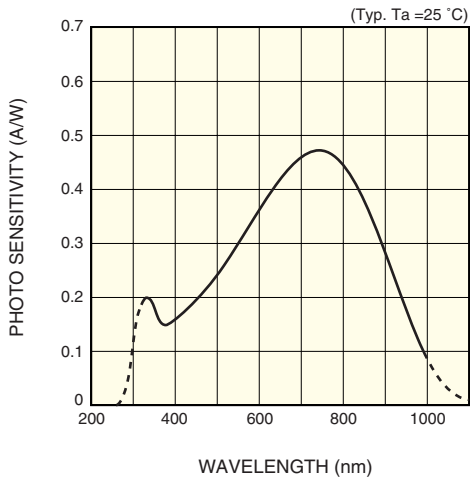
### ■ Absolute maximum ratings ( $T_a=25$ °C)

Parameter	Symbol	Value	Unit
Reverse voltage	$V_R$	20	V
Operating temperature	$T_{opr}$	-40 to +100	°C
Storage temperature	$T_{stg}$	-55 to +125	°C

### ■ Specifications ( $T_a=25$ °C)

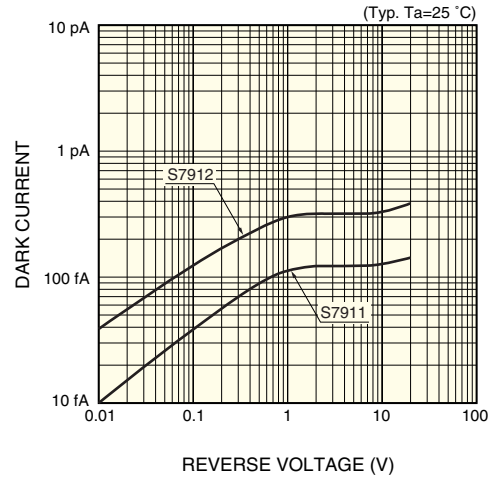
Parameter	Symbol	Condition	S7911			S7912			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Active area	A		-	$\phi 0.1$	-	-	$\phi 0.2$	-	mm
Spectral response range	$\lambda$		-	320 to 1000	-	-	320 to 1000	-	nm
Peak sensitivity wavelength	$\lambda_p$		-	740	-	-	740	-	nm
Photo sensitivity	S	$\lambda=\lambda_p$	-	0.47	-	-	0.47	-	A/W
Dark current	$I_D$	$V_R=2$ V	-	1	100	-	1	100	pA
Cut-off frequency	$f_c$	$V_R=2$ V, $R_L=50$ $\Omega$ , -3 dB	-	2	-	-	1.5	-	GHz
Terminal capacitance	$C_t$	$V_R=2$ V, $f=1$ MHz	-	0.45	-	-	0.85	-	pF

## ■ Spectral response



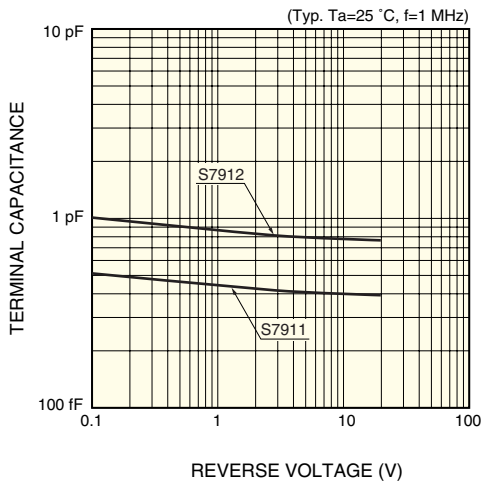
KPINB0137EA

## ■ Dark current vs. reverse voltage



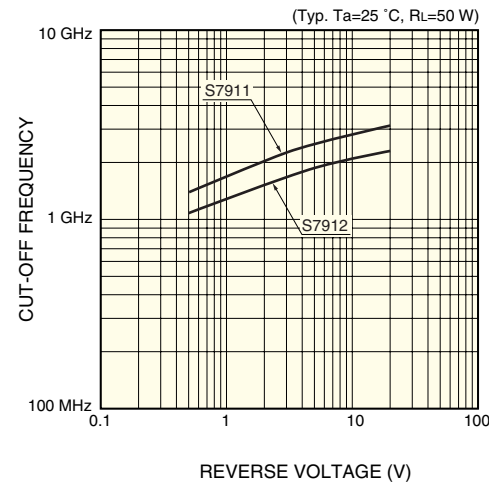
KPINB0138EA

## ■ Terminal capacitance vs. reverse voltage



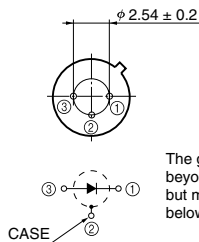
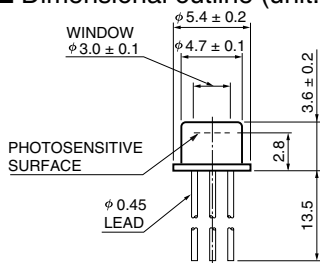
KPINB0139EA

## ■ Cut-off frequency vs. reverse voltage



KPINB0140EA

## ■ Dimensional outline (unit: mm)



The glass window does not protrude beyond the upper edge of the cap, but may be a maximum of 0.1 mm below the upper edge of the cap.

KPINA0071EA

# HAMAMATSU

Information furnished by HAMAMATSU is believed to be reliable. However, no responsibility is assumed for possible inaccuracies or omissions. Specifications are subject to change without notice. No patent rights are granted to any of the circuits described herein. ©2001 Hamamatsu Photonics K.K.

HAMAMATSU PHOTONICS K.K., Solid State Division

1126-1 Ichino-cho, Hamamatsu City, 435-8558 Japan, Telephone: (81) 053-434-3311, Fax: (81) 053-434-5184, <http://www.hamamatsu.com>

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, P.O.Box 6910, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1) 908-231-0960, Fax: (1) 908-231-1218

Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49) 08152-3750, Fax: (49) 08152-2658

France: Hamamatsu Photonics France S.A.R.L.: 8, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: 33-(1) 69 53 71 00, Fax: 33-(1) 69 53 71 10

United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, United Kingdom, Telephone: (44) 1707-294888, Fax: (44) 1707-325777

North Europe: Hamamatsu Photonics Norden AB: Smidesvägen 12, SE-171 41 Solna, Sweden, Telephone: (46) 8-509-031-00, Fax: (46) 8-509-031-01

Italy: Hamamatsu Photonics Italia S.R.L.: Strada della Moia, 1/E, 20020 Arese, (Milano), Italy, Telephone: (39) 02-935-81-733, Fax: (39) 02-935-81-741