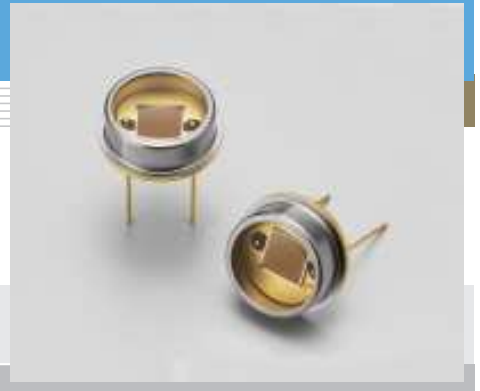


# Si PIN photodiode

## S9195

### Si PIN photodiode for violet-laser detection



S9195 is a Si PIN photodiode designed to have enhanced sensitivity in the emission wavelength range of violet-lasers. A high-speed response is achieved despite the large active area.

#### Features

- High sensitivity: 0.28 A/W Typ. ( $\lambda=405$  nm)
- High-speed response: 50 MHz Typ. ( $V_R=10$  V)
- Active area: 5.0 × 5.0 mm
- TO-8 metal package

#### Applications

- Violet-laser detection and monitor

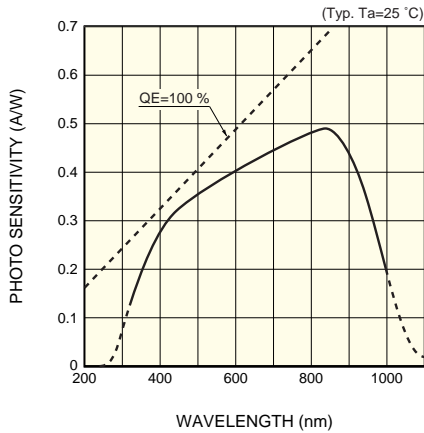
#### ■ Absolute maximum ratings

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

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

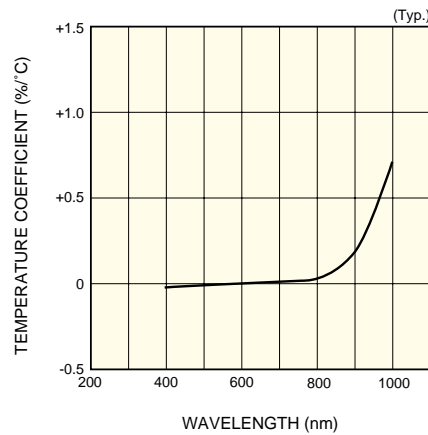
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	$\lambda$		-	320 to 1000	-	nm
Peak sensitivity wavelength	$\lambda_p$		-	840	-	nm
Photo sensitivity	S	$\lambda=405$ nm	0.25	0.28	-	A/W
Dark current	$I_D$	$V_R=10$ V	-	0.5	5	nA
Terminal capacitance	$C_t$	$V_R=10$ V, $f=1$ MHz	-	60	80	pF
Cut-off frequency	$f_c$	$V_R=10$ V, $R_L=50$ $\Omega$ $\lambda=405$ nm, -3 dB	30	50	-	MHz
Noise equivalent power	NEP	$V_R=10$ V, $\lambda=\lambda_p$		$2.5 \times 10^{-14}$	-	W/Hz <sup>1/2</sup>

■ Spectral response



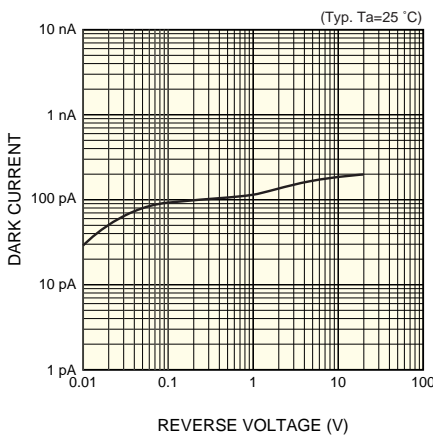
KPINB0289EA

■ Photo sensitivity temperature characteristic



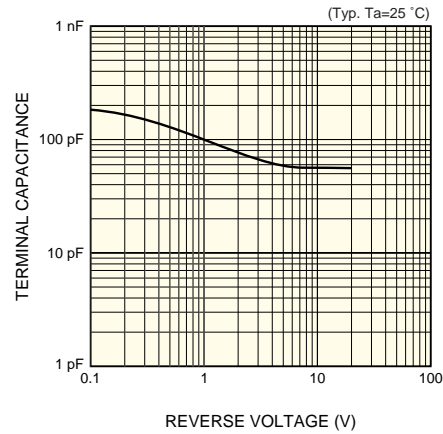
KPINB0290EA

■ Dark current vs. reverse voltage



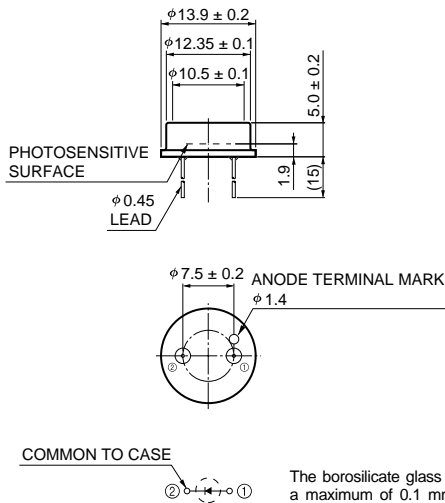
KPINB0291EA

■ Terminal capacitance vs. reverse voltage



KPINB0292EA

■ Dimensional outline (unit: mm)



KPINA0094EA

**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. ©2004 Hamamatsu Photonics K.K.

HAMAMATSU PHOTONICS K.K., Solid State Division

1126-1 Ichino-cho, Higashi-ku, Hamamatsu City, 435-8558 Japan, Telephone: (81) 53-434-3311, Fax: (81) 53-434-5184, <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.: 19, Rue du Saule Traipu, 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: Smidsvägen 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