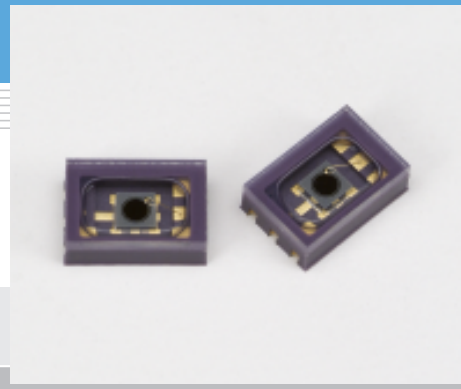


Si PIN photodiode

S9687

Si PIN photodiode for violet-laser detection



S9687 is a Si PIN photodiode developed to detect light emitted from violet-laser diodes. S9687 features high sensitivity and high-speed response in the violet region. S9687 is smaller than the conventional type (S8910-01).

Features

- Active area: $\phi 0.8$ mm
- Miniature chip carrier package: $3 \times 4.5 \times 1.5$ mm
- High sensitivity: 0.3 A/W Typ. ($\lambda=405$ nm)
- High-speed response: 500 MHz Typ. ($V_R=2.5$ V)
- Surface-mount package suitable for lead-free solder

Applications

- Violet-laser diode monitor in optical disk drive (High-speed APC)
- Violet-laser detection ($\lambda=405$ nm)

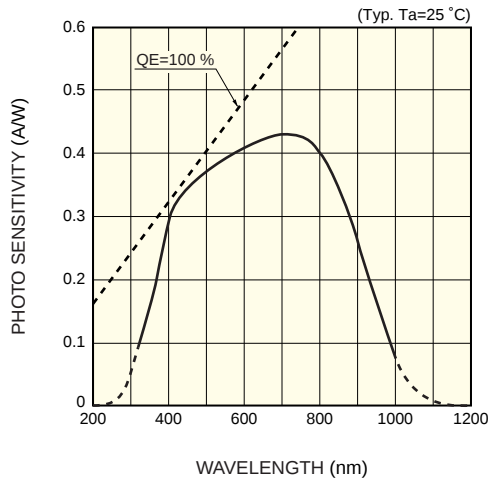
■ Absolute maximum ratings

Parameter	Symbol	Value	Unit
Reverse voltage	V_R Max.	20	V
Operating temperature	T_{opr}	-25 to +85	°C
Storage temperature	T_{stg}	-40 to +100	°C

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

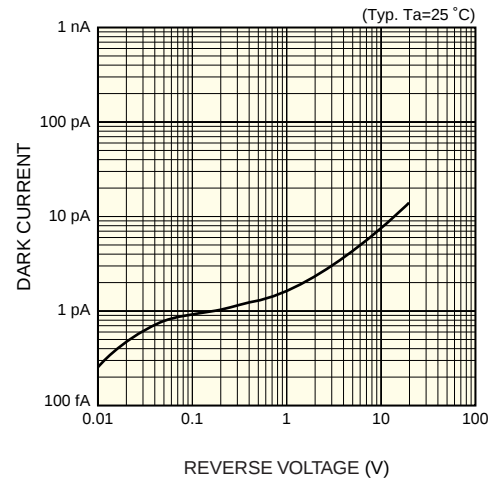
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	λ		-	320 to 1000	-	nm
Peak sensitivity wavelength	λ_p		-	760	-	nm
Photo sensitivity	S	$\lambda=405$ nm	0.26	0.3	-	A/W
Dark current	I_D	$V_R=2.5$ V	-	0.01	0.3	nA
Cut-off frequency	f_c	$V_R=2.5$ V, $R_L=50$ Ω $\lambda=405$ nm, -3 dB	300	500	-	MHz
Terminal capacitance	C_t	$V_R=2.5$ V, $f=1$ MHz	-	6	12	pF

■ Spectral response



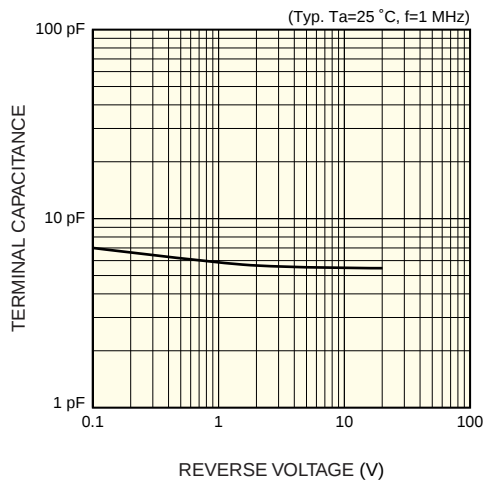
KPINB0285EB

■ Dark current vs. reverse voltage



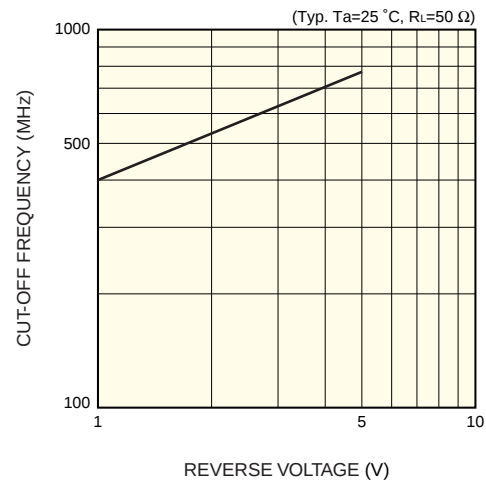
KPINB0286EA

■ Terminal capacitance vs. reverse voltage



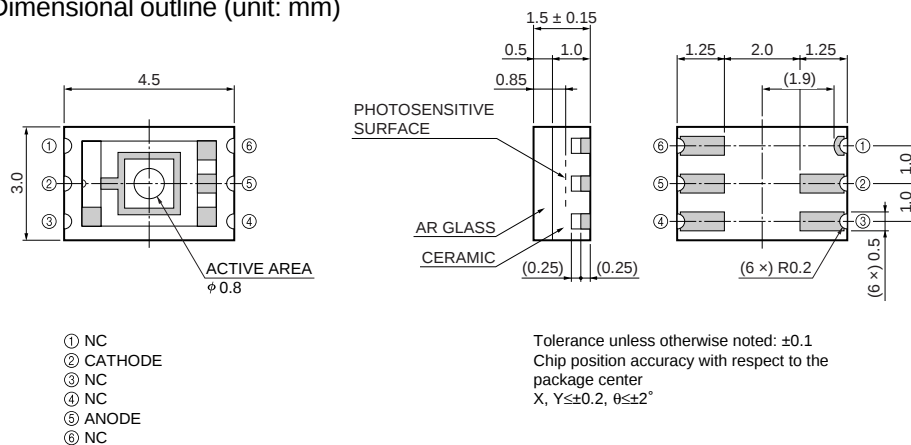
KPINB0287EA

■ Cut-off frequency vs. reverse voltage



KPINB0288EA

■ Dimensional outline (unit: mm)



KPINA0100EA

HAMAMATSU

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, 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

Cat. No. KPIN1071E02
Jan. 2006 DN