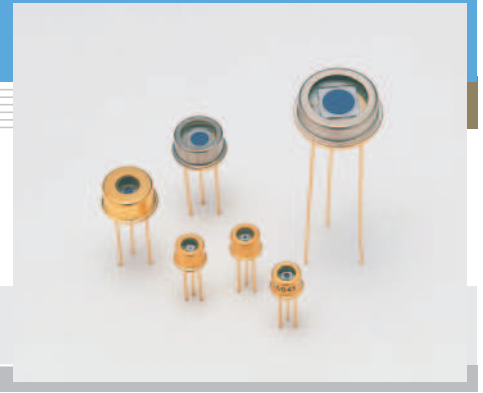


Si APD

S6045 series

Low temperature coefficient type APD for 800 nm band



Features

- Low temperature coefficient: 0.4 V/°C
- High-speed response
- High sensitivity, low noise

Applications

- Optical fiber communications
- Spatial light transmission
- Rangefinder

General ratings / Absolute maximum ratings

Type No.	Dimensional outline/ Window material *1	Package	Effective active area size *2 (mm)	Effective active area (mm ²)	Absolute maximum ratings	
					Operating temperature Topr (°C)	Storage temperature Tstg (°C)
S6045-01	①/K	TO-18	φ0.2	0.03	-40 to +85	-55 to +125
S6045-02			φ0.5	0.19		
S6045-03			φ1.0	0.78		
S6045-04	②/K	TO-5	φ1.5	1.77		
S6045-05	③/K		φ3.0	7.0		
S6045-06	④/K	TO-8	φ5.0	19.6		

Electrical and optical characteristics (Typ. Ta=25 °C, unless otherwise noted)

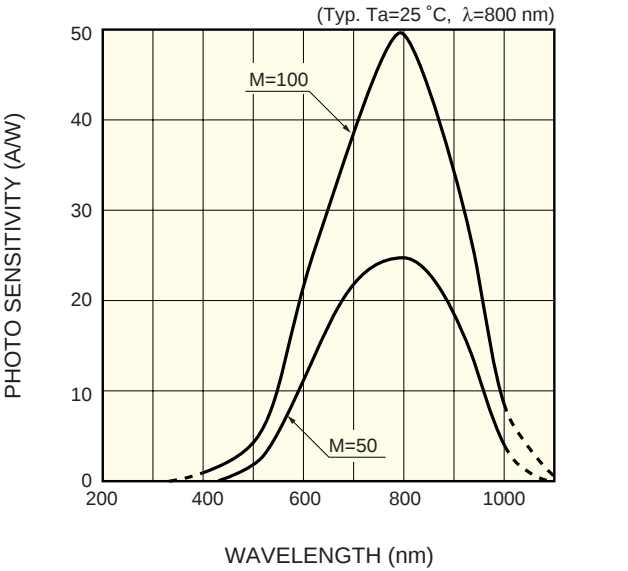
Type No.	Spectral response range λ (nm)	Peak *3 sensitivity wavelength λ_p (nm)	Photo sensitivity S M=1 $\lambda=800$ nm (A/W)	Quantum efficiency QE M=1 $\lambda=800$ nm (%)	Breakdown voltage VBR ID=100 μ A		Temp. coefficient of VBR (V/°C)	Dark current *3 ID		Cut-off frequency *3 fc RL=50 Ω (MHz)	Terminal capacitance *3 Ct (pF)	Excess noise figure *3 x $\lambda=800$ nm	Gain M $\lambda=800$ nm
					Typ. (V)	Max. (V)		Typ. (nA)	Max. (nA)				
S6045-01	400 to 1000	800	0.5	75	200	300	0.4	0.05	0.5	1000	1.5	0.3	100
S6045-02								0.1	1	900	3		
S6045-03								0.2	2	600	6		
S6045-04								0.5	5	350	12		
S6045-05								1	10	80	50		60
S6045-06								3	30	35	120		40

*1: K: borosilicate glass

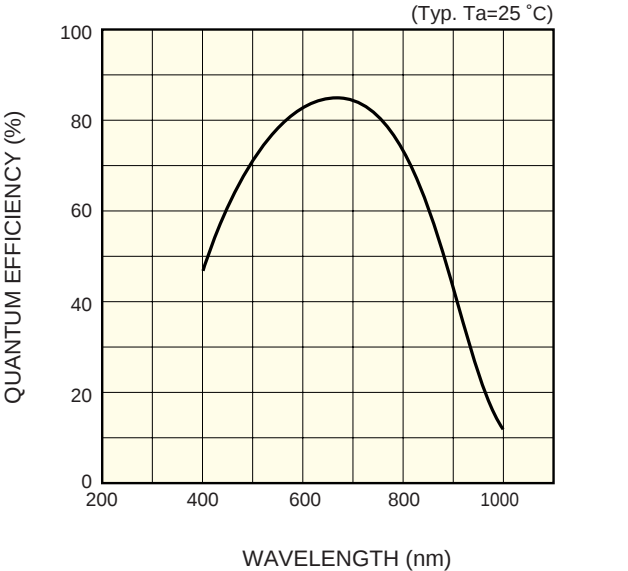
*2: Area in which a typical gain can be obtained.

*3: Values measured at a gain listed in the characteristics table.

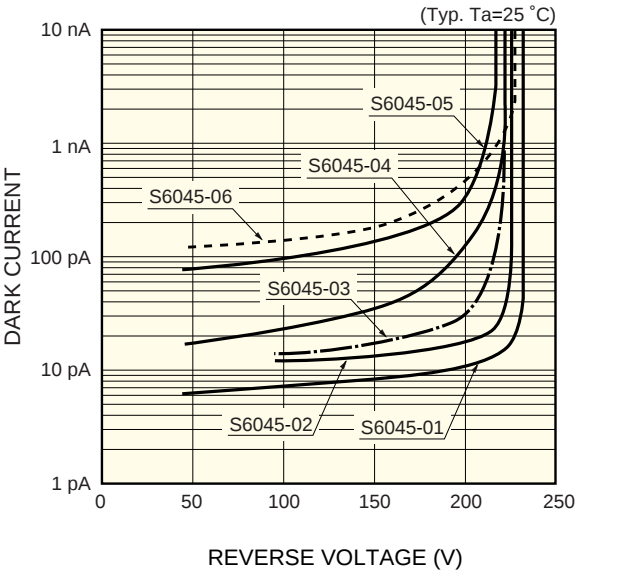
■ Spectral response



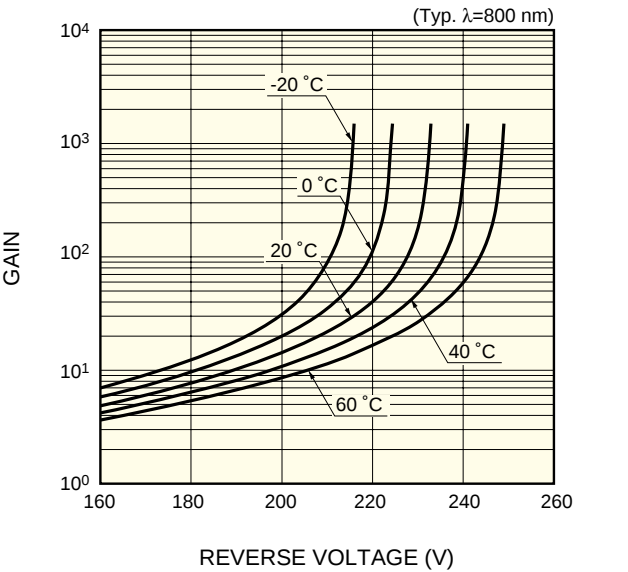
■ Quantum efficiency vs. wavelength



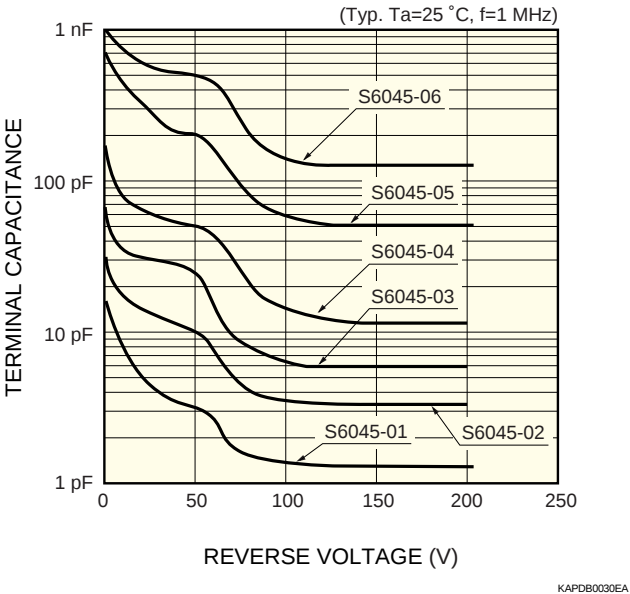
■ Dark current vs. reverse voltage



■ Gain vs. reverse voltage

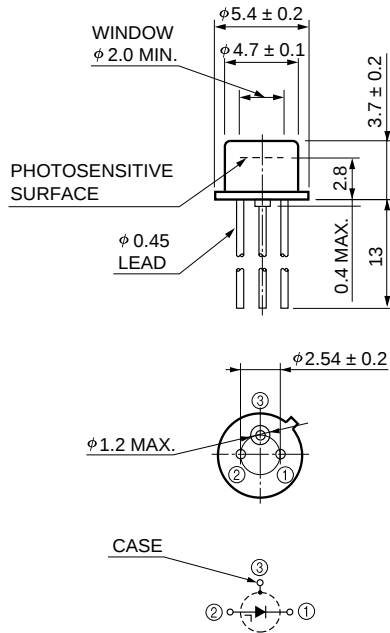


■ Terminal capacitance vs. reverse voltage



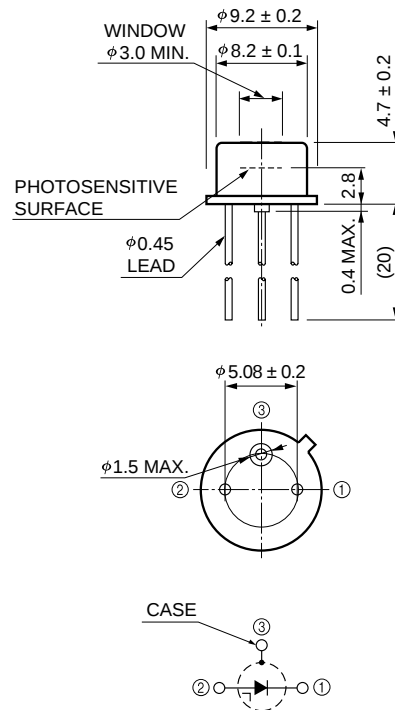
Dimensional outlines (unit: mm)

① S6045-01/-02/-03



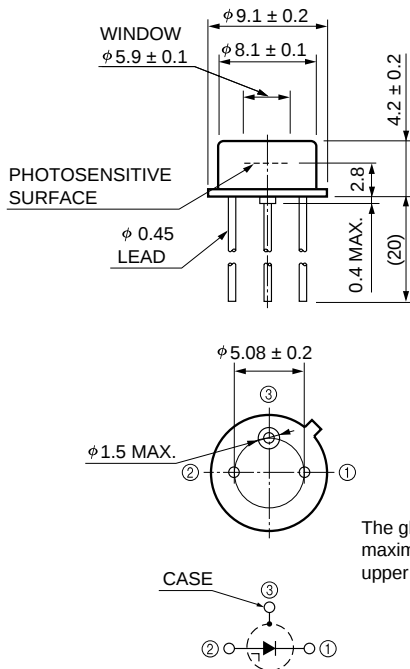
KAPDA0010EA

② S6045-04



KAPDA0011EB

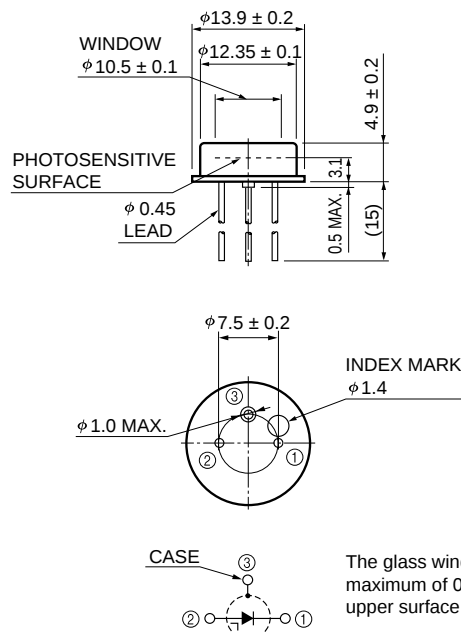
③ S6045-05



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

KAPDA0012EB

④ S6045-06



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

KAPDA0013ED

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, 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 Trépu, 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

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. ©2005 Hamamatsu Photonics K.K.