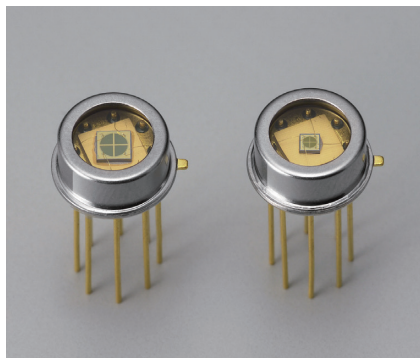


InGaAs PIN photodiodes



G6849 series

Quadrant type

Features

- **Photosensitive area**
G6849 : ϕ 2 mm quadrant element
G6849-01: ϕ 1 mm quadrant element
- **Low noise**
- **High reliability**

Applications

- **Light spot position detection**
- **Measurement equipment**

Structure

Parameter	G6849	G6849-01	Unit
Photosensitive area	ϕ 2/quadrant	ϕ 1/quadrant	mm
Number of elements	4		-
Package	TO-5		-
Window material	Borosilicate glass		-

Absolute maximum ratings (Ta=25 °C)

Parameter	Symbol	Value	Unit
Reverse voltage	V _R	5	V
Operating temperature*1	T _{opr}	-40 to +85	°C
Storage temperature*1	T _{stg}	-55 to +125	°C
Soldering condition	-	260 °C or less, within 10 s	-

*1: No dew condensation

When there is a temperature difference between a product and the surrounding area in high humidity environments, dew condensation may occur on the product surface. Dew condensation on the product may cause deterioration in characteristics and reliability.

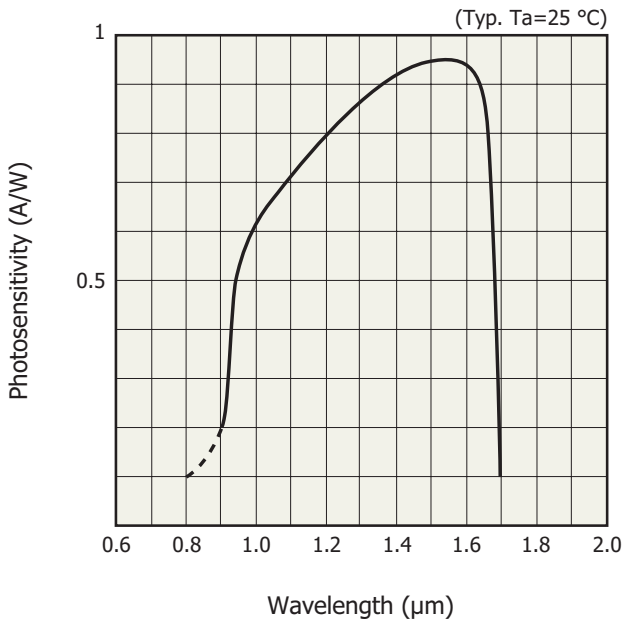
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

Electrical and optical characteristics (Ta=25 °C, per 1 element)

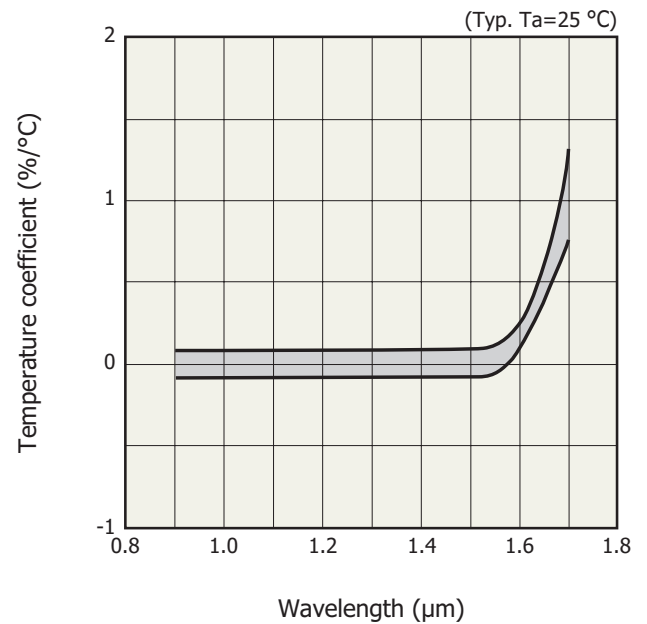
Parameter	Symbol	Condition	G6849			G6849-01			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Spectral response range	λ		-	0.9 to 1.7	-	-	0.9 to 1.7	-	μ m
Peak sensitivity wavelength	λ_p		-	1.55	-	-	1.55	-	μ m
Photosensitivity	S	$\lambda=1.3 \mu$ m	0.8	0.9	-	0.8	0.9	-	A/W
		$\lambda=1.55 \mu$ m	0.85	0.95	-	0.85	0.95	-	
Dark current	I _D	V _R =1 V	-	0.5	5	-	0.15	1.5	nA
Temperature coefficient of I _D	Δ T _{ID}	V _R =1 V	-	1.09	-	-	1.09	-	times/°C
Cutoff frequency	f _c	V _R =1 V, R _L =50 Ω $\lambda=1.3 \mu$ m, -3 dB	15	30	-	80	120	-	MHz
Terminal capacitance	C _t	V _R =1 V, f=1 MHz	-	100	160	-	25	40	pF
Shunt resistance	R _{sh}	V _R =10 mV	10	50	-	80	200	-	M Ω
Detectivity	D*	$\lambda=\lambda_p$	1×10^{12}	5×10^{12}	-	1×10^{12}	5×10^{12}	-	cm ² ·Hz ^{1/2} /W
Noise equivalent power	NEP	$\lambda=\lambda_p$	-	2×10^{-14}	6×10^{-14}	-	1×10^{-14}	4×10^{-14}	W/Hz ^{1/2}

The G6849 series may be damaged by Electro Static Discharge. Be careful when using the G6849 series.

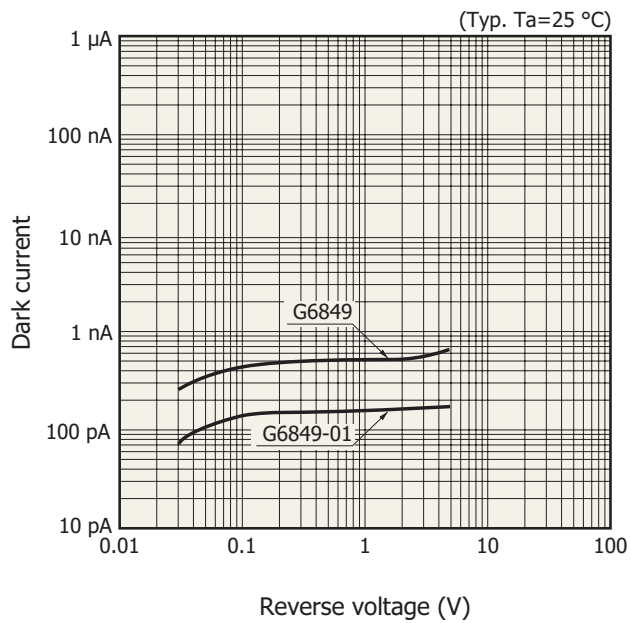
Spectral response



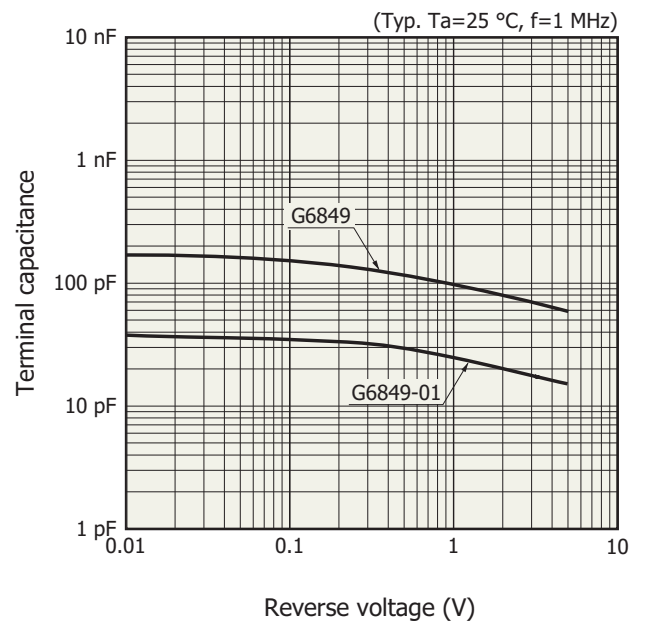
Photosensitivity temperature characteristics



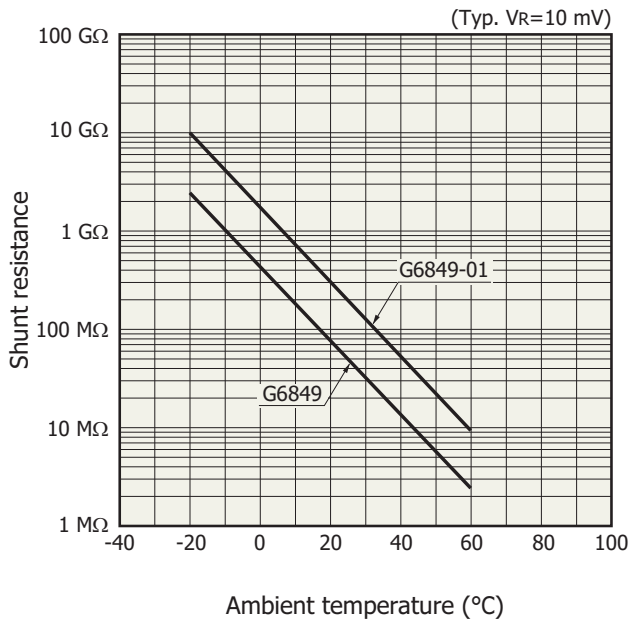
Dark current vs. reverse voltage



Terminal capacitance vs. reverse voltage



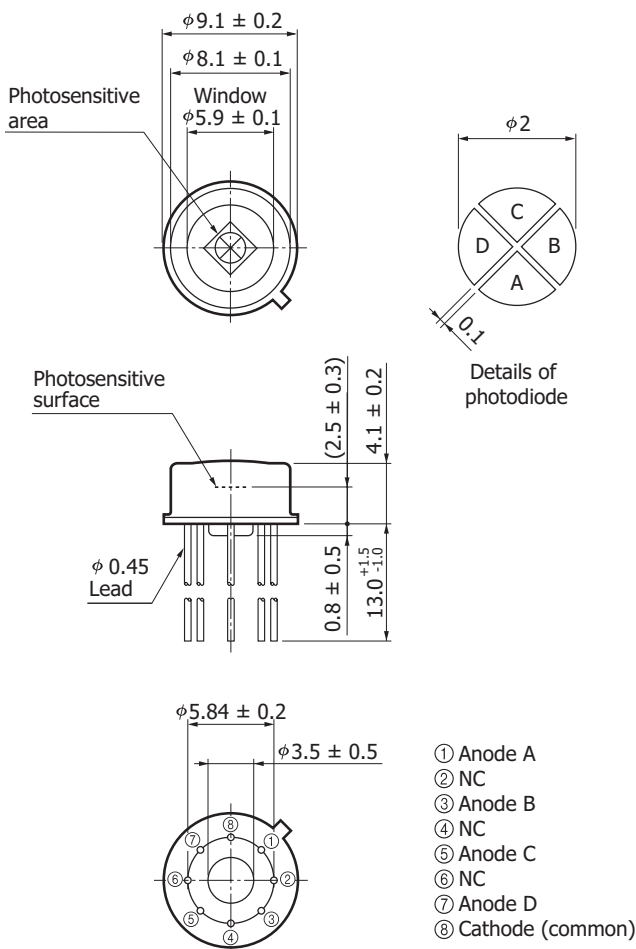
Shunt resistance vs. ambient temperature



KMIRB0014EA

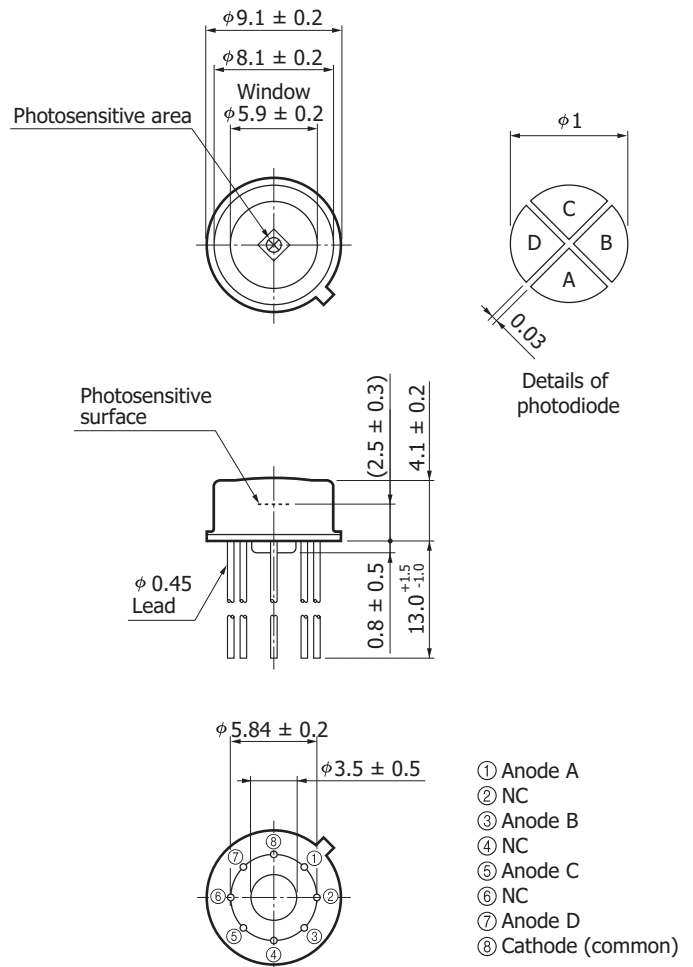
Dimensional outlines (unit: mm)

G6849



KIRDA0059EB

G6849-01



KIRDA0143EB

Related information

www.hamamatsu.com/sp/ssd/doc_en.html

■ Precautions

- Notice
- Metal, ceramic, plastic products

■ Technical information

- Compound semiconductor photosensors / Technical note

Information described in this material is current as of July, 2021.

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HAMAMATSU

www.hamamatsu.com

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

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, Bridgewater, N.J. 08807, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218, E-mail: usa@hamamatsu.com

Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49)8152-375-0, Fax: (49)8152-265-8, E-mail: info@hamamatsu.de

France: Hamamatsu Photonics France S.A.R.L.: 19, 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, E-mail: infos@hamamatsu.fr

United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, UK, Telephone: (44)1707-294888, Fax: (44)1707-325777, E-mail: info@hamamatsu.co.uk

North Europe: Hamamatsu Photonics Norden AB: Torshamnsgatan 35 16440 Kista, Sweden, Telephone: (46)8-509 031 00, Fax: (46)8-509 031 01, E-mail: info@hamamatsu.se

Italy: Hamamatsu Photonics Italia S.r.l.: Strada della Moia, 1 int. 6, 20044 Arese (Milano), Italy, Telephone: (39)02-93 58 17 33, Fax: (39)02-93 58 17 41, E-mail: info@hamamatsu.it

China: Hamamatsu Photonics (China) Co., Ltd.: 1201 Tower B, Jiaming Center, 27 Dongsanhuan Bellu, Chaoyang District, 100020 Beijing, P.R.China, Telephone: (86)10-6586-6006, Fax: (86)10-6586-2866, E-mail: hpc@hamamatsu.com.cn

Taiwan: Hamamatsu Photonics Taiwan Co., Ltd.: 8F-3, No. 158, Section2, Gongdao 5th Road, East District, Hsinchu, 300, Taiwan R.O.C. Telephone: (886)3-659-0080, Fax: (886)3-659-0081, E-mail: info@hamamatsu.com.tw