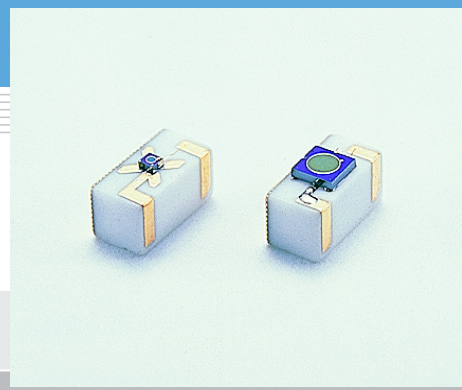


InGaAs PIN photodiode

G6742 series

Surface-mount type



Features

- Small chip carrier package
- High reliability
- Low price

Applications

- Laser diode monitors

General ratings

Parameter	G6742-003	G6742-01	Unit
Package	Ceramic base		-
Active area	$\phi 0.3$	$\phi 1.0$	mm

Absolute maximum ratings

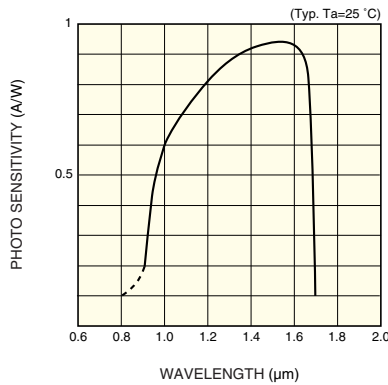
Parameter	Symbol	G6742-003	G6742-01	Unit
Reverse voltage	V_R Max.	20	10	V
Operating temperature	T_{opr}	-40 to +85 *		°C
Storage temperature	T_{stg}	-55 to +125 *		°C

* No condensation

Electrical and optical characteristics ($T_a=25^\circ\text{C}$)

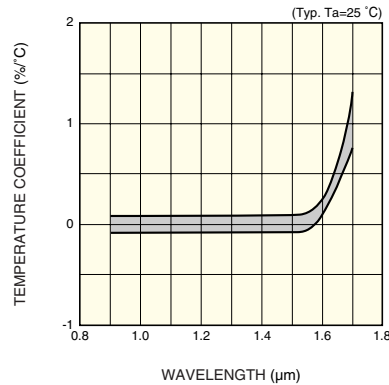
Parameter	Symbol	Condition	G6742-003			G6742-01			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Spectral response range	λ		-	0.9 to 1.7	-	-	0.9 to 1.7	-	μm
Peak sensitivity wavelength	λ_p		-	1.55	-	-	1.55	-	μm
Photo sensitivity	S	$\lambda=1.3 \mu\text{m}$	0.8	0.9	-	0.8	0.9	-	A/W
		$\lambda=1.55 \mu\text{m}$	0.85	0.95	-	0.85	0.95	-	
Dark current	I_D	$V_R=5 \text{ V}$	-	0.3	1.5	-	1	5	nA
Cut-off frequency	f_c	$V_R=5 \text{ V}$, $R_L=50 \Omega$ -3 dB	-	300	-	-	35	-	MHz
Terminal capacitance	C_t	$f=1 \text{ MHz}$ $V_R=5 \text{ V}$	-	10	-	-	90	-	pF
Shunt resistance	R_{sh}	$V_R=10 \text{ mV}$	-	1000	-	-	100	-	M Ω
Detectivity	D^*	$\lambda=\lambda_p$	-	5×10^{12}	-	-	5×10^{12}	-	$\text{cm} \cdot \text{Hz}^{1/2}/\text{W}$
Noise equivalent power	NEP	$\lambda=\lambda_p$	-	4×10^{-15}	-	-	2×10^{-14}	-	$\text{W}/\text{Hz}^{1/2}$

Spectral response



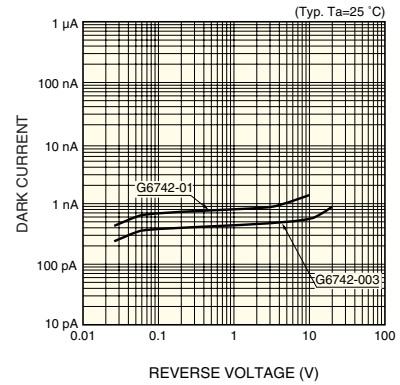
KIRDB0002EB

Photo sensitivity temperature characteristic



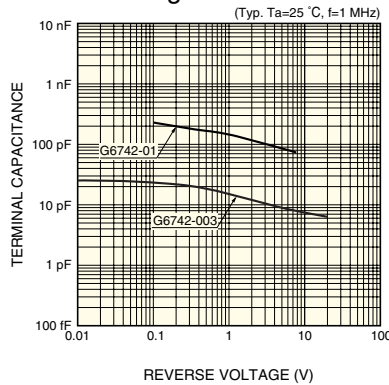
KIRDB0004EA

Dark current vs. reverse voltage



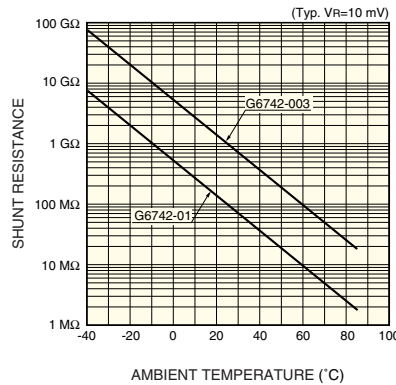
KIRDB0150EA

Terminal capacitance vs. reverse voltage



KIRDB0209EA

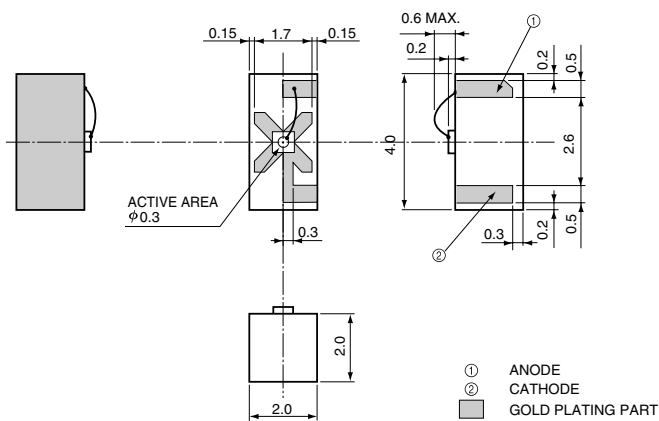
Shunt resistance vs. ambient temperature



KIRDB0210EA

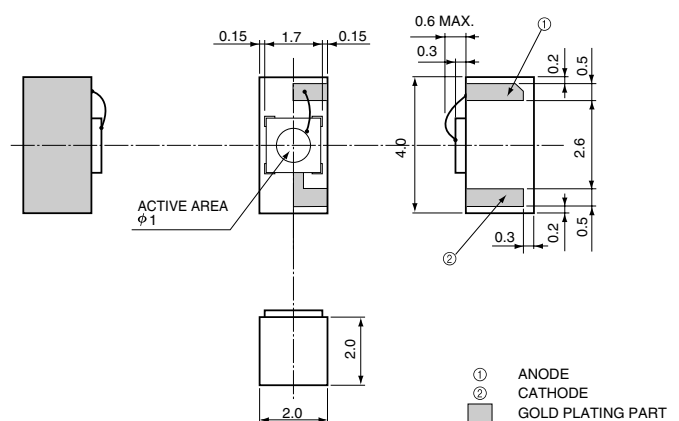
Dimensional outlines (unit: mm, tolerance: ±0.1)

G6742-003



KIRDA0057EA

G6742-01



KIRDA0058EA

HAMAMATSU

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

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.