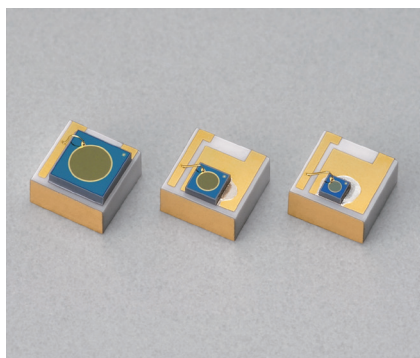


InGaAs PIN photodiodes



G15553 series

Sub-mount type photodiodes for LD monitor

Features

- Photosensitive area
G15553-003C: $\phi 0.3$ mm
G15553-005C: $\phi 0.5$ mm
G15553-010C: $\phi 1$ mm
- Miniature package: $2 \times 2 \times 1$ mm
- Precise chip position tolerance: ± 0.075 mm

Applications

- LD monitor

Structure

Parameter	G15553-003C	G15553-005C	G15553-010C	Unit
Photosensitive area	$\phi 0.3$	$\phi 0.5$	$\phi 1$	mm

Absolute maximum ratings

Parameter	Symbol	Remark	G15553-003C	G15553-005C	G15553-010C	Unit
Reverse voltage	V_R max		20	20	10	V
Operating temperature	T_{opr}	No dew condensation*	-40 to +85			$^{\circ}\text{C}$
Storage temperature	T_{stg}		-55 to +125			$^{\circ}\text{C}$

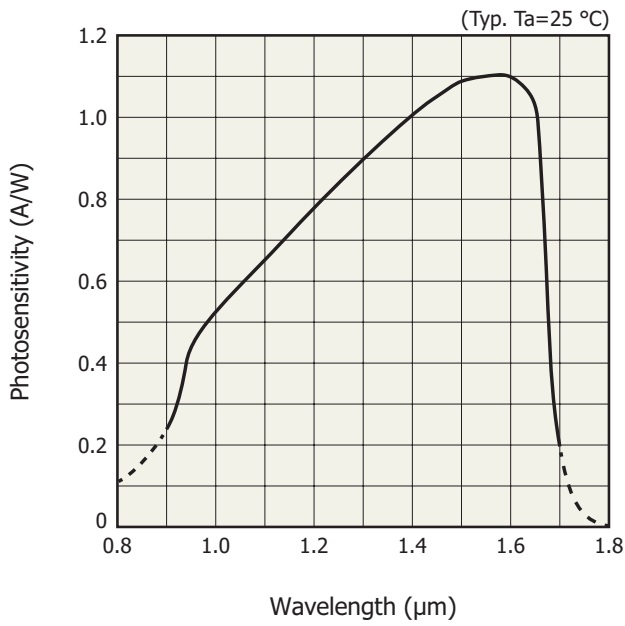
* When there is a temperature difference between a product and the surrounding area in high humidity environment, dew condensation may occur on the product surface. Dew condensation on the product may cause deterioration in characteristics and reliability.
Note: Exceeding the absolute maximum ratings 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 ($T_a=25^{\circ}\text{C}$)

Parameter	Symbol	Condition	G15553-003C			G15553-005C			G15553-010C			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Spectral response range	λ		0.9 to 1.7			0.9 to 1.7			0.9 to 1.7			μm
Photosensitivity	S	$\lambda=1.3 \mu\text{m}$	0.8	0.9	-	0.8	0.9	-	0.8	0.9	-	A/W
		$\lambda=1.55 \mu\text{m}$	0.9	1.1	-	0.9	1.1	-	0.9	1.1	-	
Dark current	I_D	$V_R=5$ V	-	0.1	0.5	-	0.15	0.75	-	0.8	4	nA
Temperature coefficient of I_D	$\Delta T I_D$	$V_R=1$ V	-	1.09	-	-	1.09	-	-	1.09	-	times/ $^{\circ}\text{C}$
Shunt resistance	Rsh	$V_R=10$ mV	200	1000	-	80	400	-	25	125	-	$\text{M}\Omega$
Terminal capacitance	C_t	$V_R=5$ V $f=1$ MHz	-	5	7.5	-	15	20	-	55	120	pF
Cutoff frequency	f_c	$V_R=5$ V $R_L=50 \Omega$	450	600	-	160	200	-	25	60	-	MHz
Noise equivalent power	NEP	$\lambda=\lambda_p$	-	4×10^{-15}	2×10^{-14}	-	7×10^{-15}	2×10^{-14}	-	2×10^{-14}	4×10^{-14}	$\text{W}/\text{Hz}^{1/2}$
Detectivity	D^*	$\lambda=\lambda_p$	2.4×10^{12}	6.3×10^{12}	-	2.4×10^{12}	6.3×10^{12}	-	2.4×10^{12}	6.3×10^{12}	-	$\text{cm}^2 \cdot \text{Hz}^{1/2}/\text{W}$

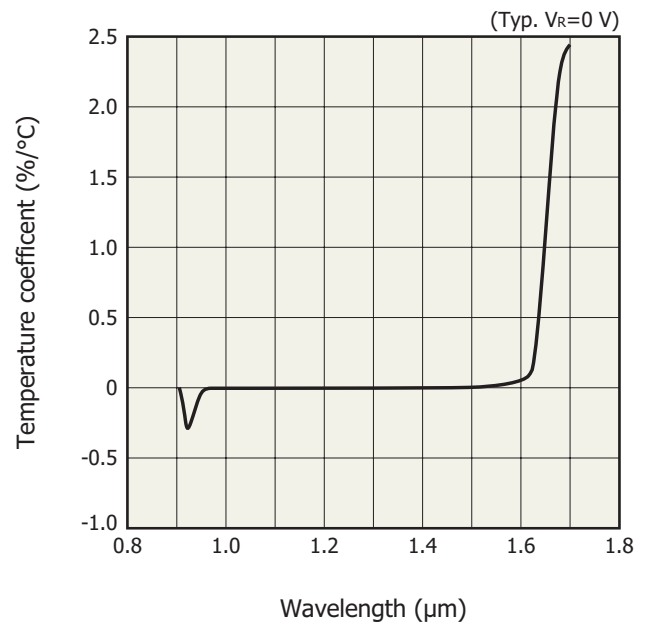
The G15553 series may be damaged by electrostatic discharge, etc. Be careful when using the G15553 series.

Spectral response



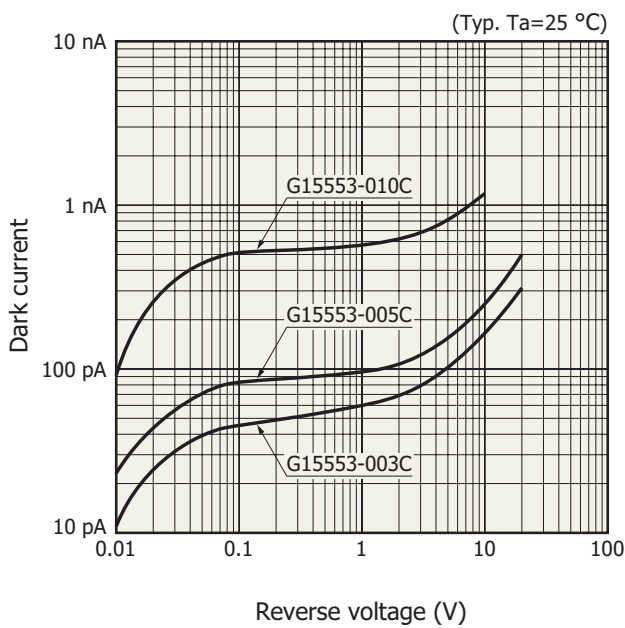
KIRDB0692EA

Sensitivity temperature characteristics



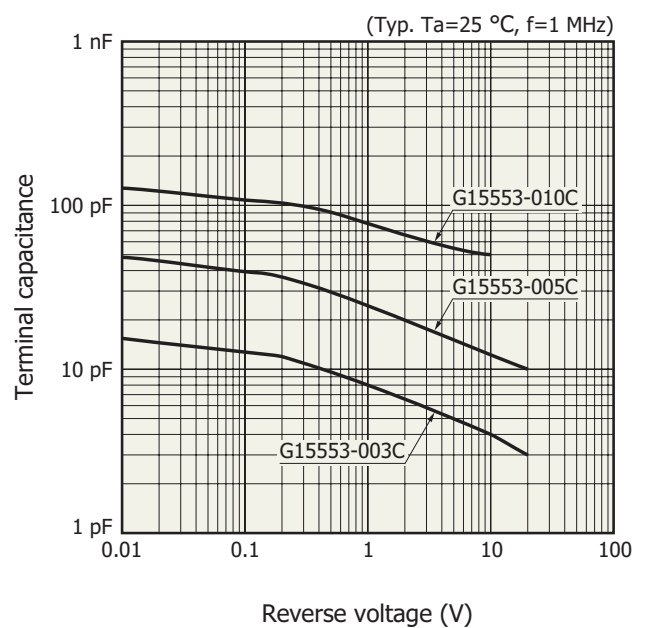
KIRDB0636EA

Dark current vs. reverse voltage



KIRDB0693EA

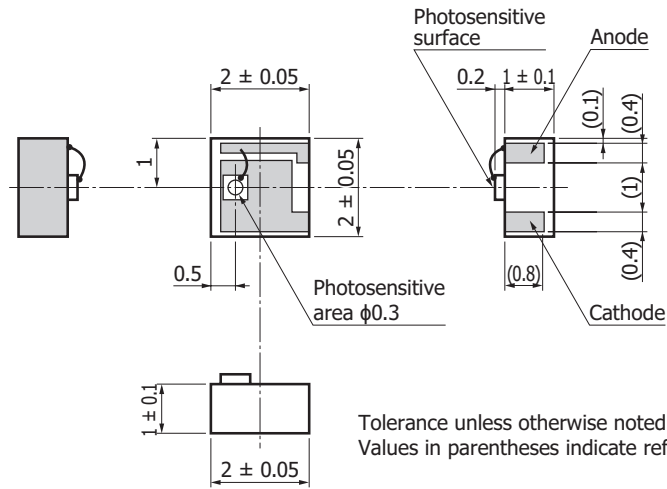
Terminal capacitance vs. reverse voltage



KIRDB0694EA

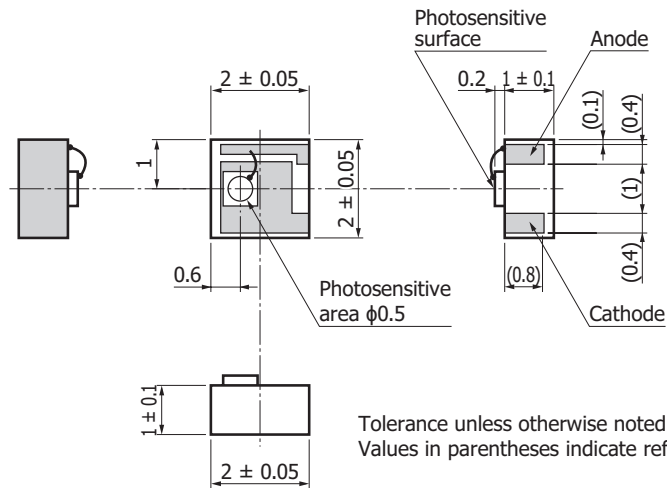
Dimensional outlines (unit: mm)

G15553-003C



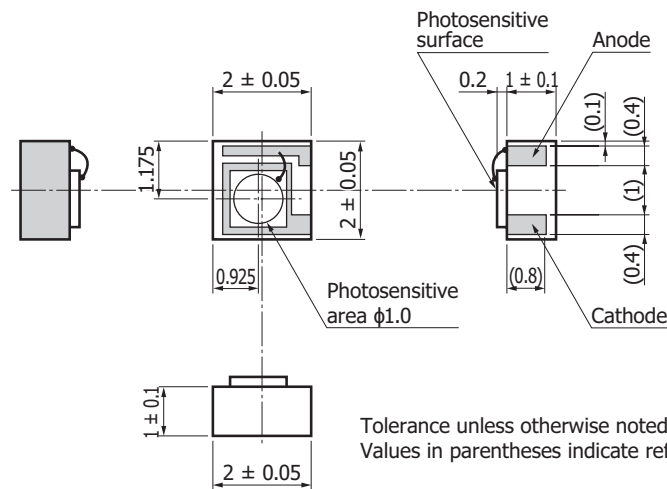
KIRDA0273EB

G15553-005C



KIRDA0274EB

G15553-010C



KIRDA0275E8

Related information

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

Precautions

- Disclaimer
- Safety consideration
- Surface mount type products
- Unsealed products

Information described in this material is current as of June 2020.

Product specifications are subject to change without prior notice due to improvements or other reasons. This document has been carefully prepared and the information contained is believed to be accurate. In rare cases, however, there may be inaccuracies such as text errors. Before using these products, always contact us for the delivery specification sheet to check the latest specifications.

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