

G11193 series

Small package, surface mount type

Features

- Small SMD (surface mount device) package
- Low noise, low dark current
- Low price

Applications

- Optical power meter
- Measurement/analytical instruments

Structure

Parameter	G11193-02R	G11193-03R	G11193-10R	Unit
Package	SMD			-
Photosensitive area	φ0.2	φ0.3	φ1.0	mm
Window	Resin			-

Absolute maximum ratings

Parameter	Symbol	Condition	G11193-02R	G11193-03R	G11193-10R	Unit
Reverse voltage	V_R Max.		10			V
Operating temperature	T_{opr}	No dew condensation*1	-25 to +85			°C
Storage temperature	T_{stg}	No dew condensation*1	-40 to +100			°C
Reflow soldering conditions	-		Peak temperature 240 °C, one time			-

*1: 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 (Ta=25 °C)

Parameter	Symbol	Condition	G11193-02R			G11193-03R			G11193-10R			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Spectral response range	λ	Higher than 10% of peak	-	0.9 to 1.7	-	-	0.9 to 1.7	-	-	0.9 to 1.7	-	μm
Peak sensitivity wavelength	λ_p		-	1.55	-	-	1.55	-	-	1.55	-	μm
Photo sensitivity	S	$\lambda=1.3 \mu\text{m}$	0.75	0.85	-	0.75	0.85	-	0.75	0.85	-	A/W
		$\lambda=1.55 \mu\text{m}$	0.77	1.0	-	0.77	1.0	-	0.77	1.0	-	
Dark current	I_D	$V_R=5 \text{ V}$	-	40	800	-	100	1200	-	800	4000	pA
Temperature coefficient of dark current	ΔT_{ID}	$V_R=1 \text{ V}$	-	1.09	-	-	1.09	-	-	1.09	-	times/°C
Cut-off frequency	f_c	$V_R=5 \text{ V}$, $R_L=50 \Omega$, -3 dB	0.6	1	-	0.2	0.5	-	0.025	0.06	-	GHz
Terminal capacitance	C_t	$V_R=5 \text{ V}$, $f=1 \text{ MHz}$	-	3	5	-	5	8	-	55	120	pF
Shunt resistance	Rsh	$V_R=10 \text{ mV}$	0.25	1.4	-	0.2	1	-	0.025	0.125	-	GΩ
Detectivity	D^*	$\lambda=\lambda_p$	1×10^{12}	5×10^{12}	-	1×10^{12}	5×10^{12}	-	1×10^{12}	5×10^{12}	-	$\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$
Noise equivalent power	NEP	$\lambda=\lambda_p$	-	3×10^{-15}	1×10^{-14}	-	4×10^{-15}	1×10^{-14}	-	1.4×10^{-14}	4×10^{-14}	$\text{W}/\text{Hz}^{1/2}$

The G11193 series may be damaged by electrostatic discharge, etc. Be careful when using the G11193 series.

Spectral response

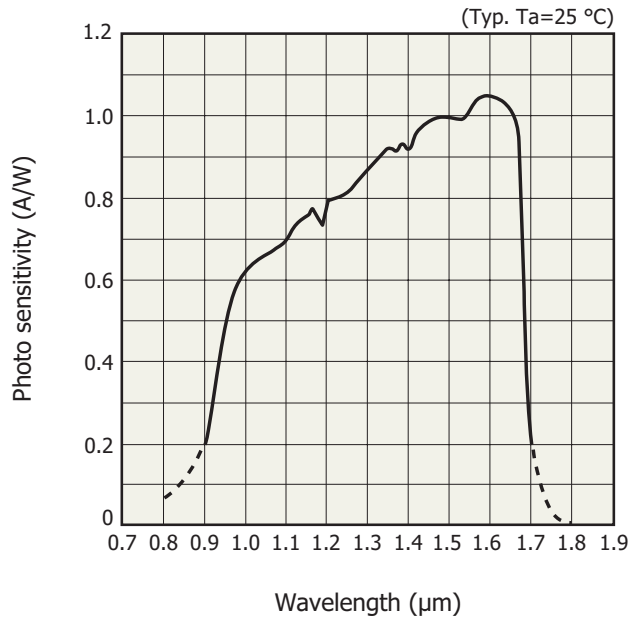
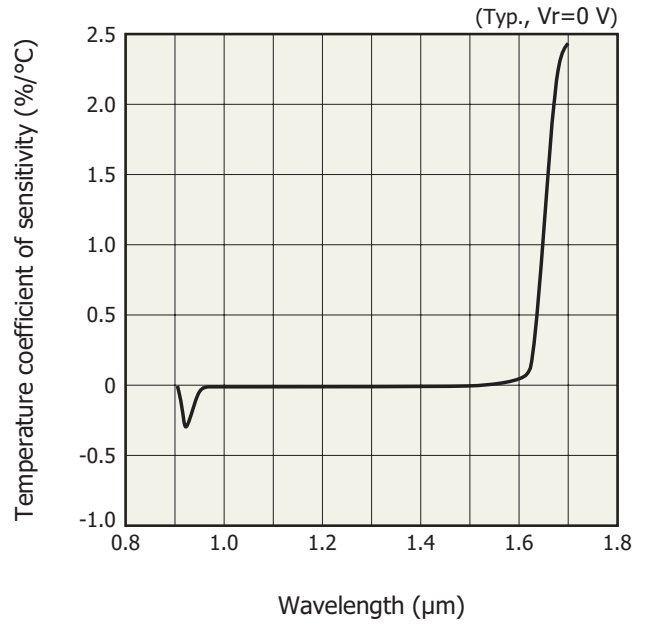
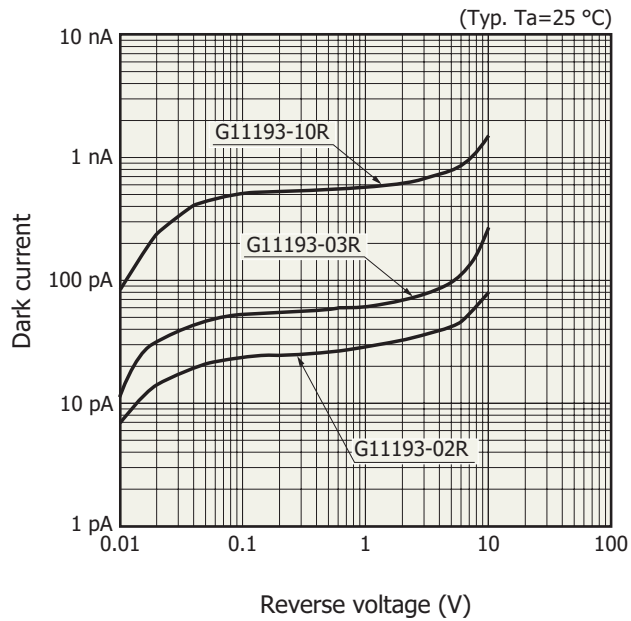


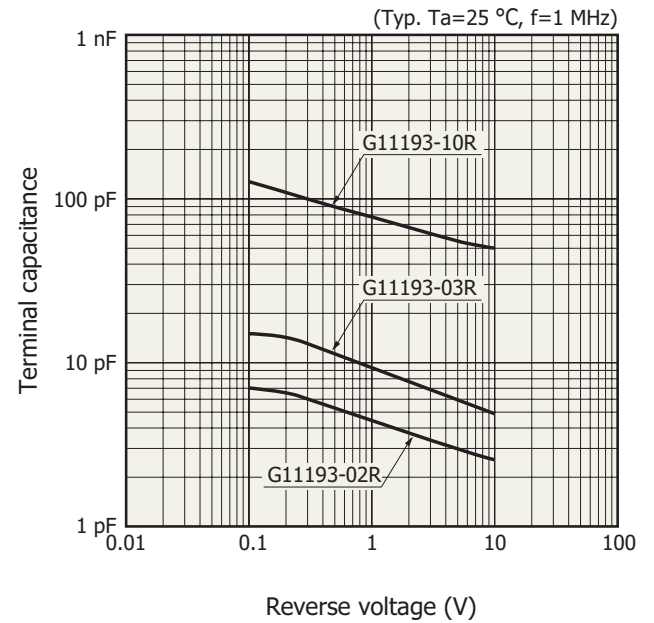
Photo sensitivity temperature characteristic



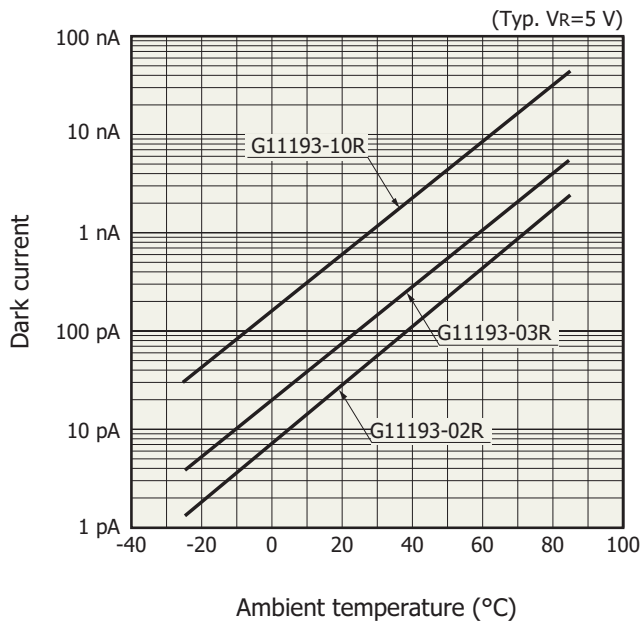
Dark current vs. reverse voltage



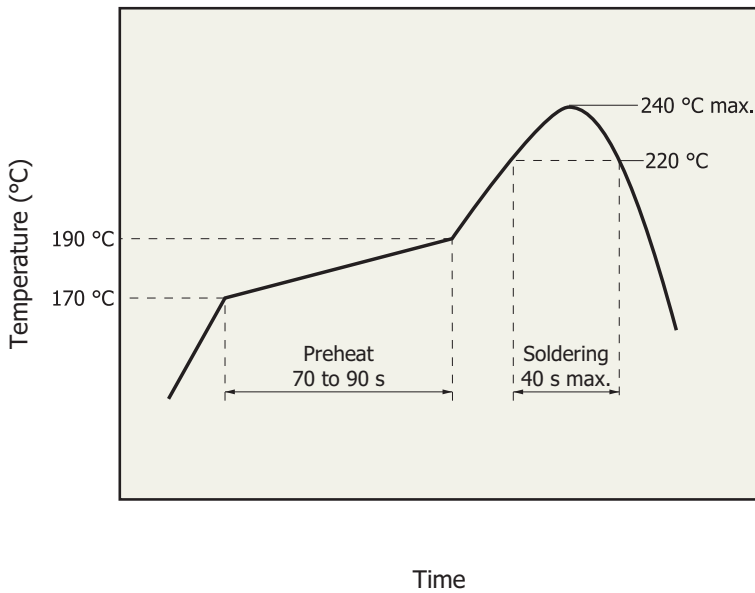
Terminal capacitance vs. reverse voltage



Dark current vs. ambient temperature



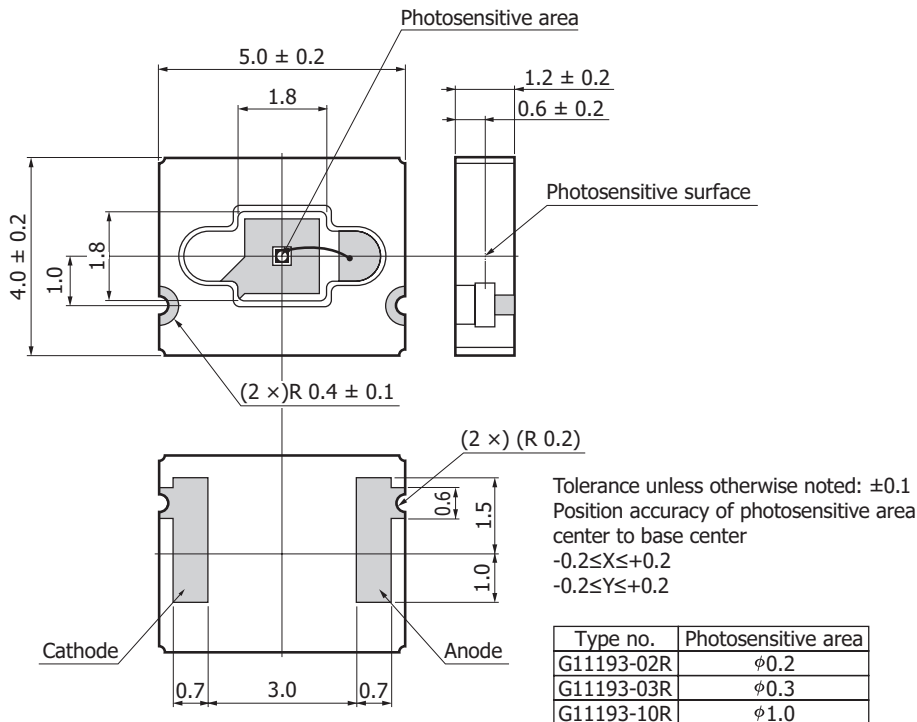
Recommended solder reflow conditions



- After unpacking, store the device in an environment at a temperature range of 5 to 30 °C and a humidity of 60% or less, and perform reflow soldering within 1 year.
- Thermal stress applied to the device during reflow soldering differs depending on the PC board and reflow oven being used.
- When setting the reflow conditions, make sure that the reflow soldering process does not degrade device reliability.

KIRD0627EA

Dimensional outline (unit: mm)



KIRDA0210EC

Related information

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

Precautions

- Disclaimer
- Safety consideration
- Surface mount type products

Technical information

- Infrared detectors

Information described in this material is current as of November 2017.

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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