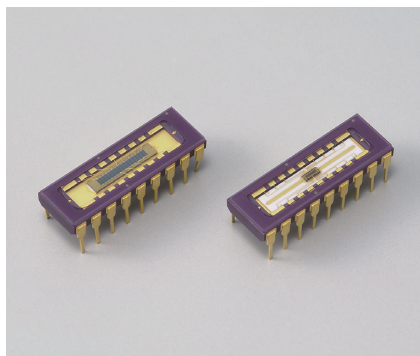


InGaAs PIN photodiode arrays



G7150/G7151-16

16-element arrays

Features

- 16-element arrays
- For simple measurement

Applications

- Near infrared (NIR) spectrophotometers

Structure

Parameter	G7150-16	G7151-16	Unit
Photosensitive area	0.45 × 1	0.08 × 0.2	mm
Element pitch	0.5	0.1	mm
Number of elements	16		-
Package	18-pin DIP		-
Window material	Borosilicate glass		-

Absolute maximum ratings (Ta=25 °C)

Parameter	Symbol	Value	Unit
Reverse voltage	V _R	5	V
Operating temperature*	T _{opr}	-25 to +70	°C
Storage temperature*	T _{stg}	-25 to +70	°C
Soldering conditions	-	260 °C or less, within 5 s	-

* No condensation

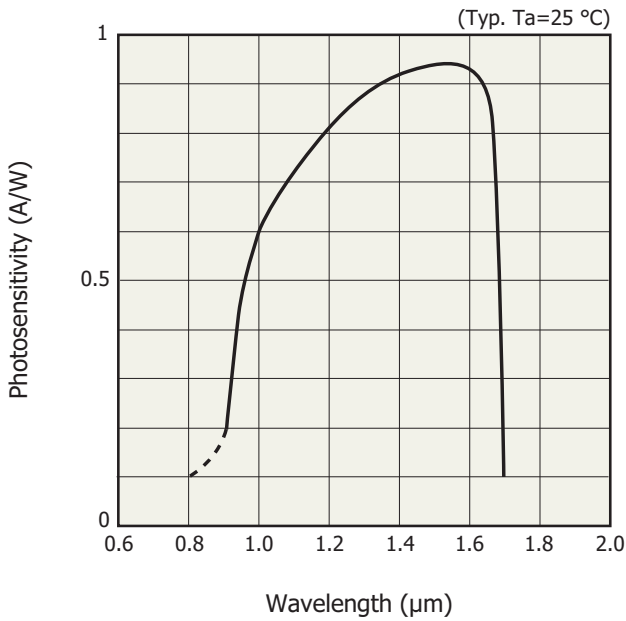
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

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

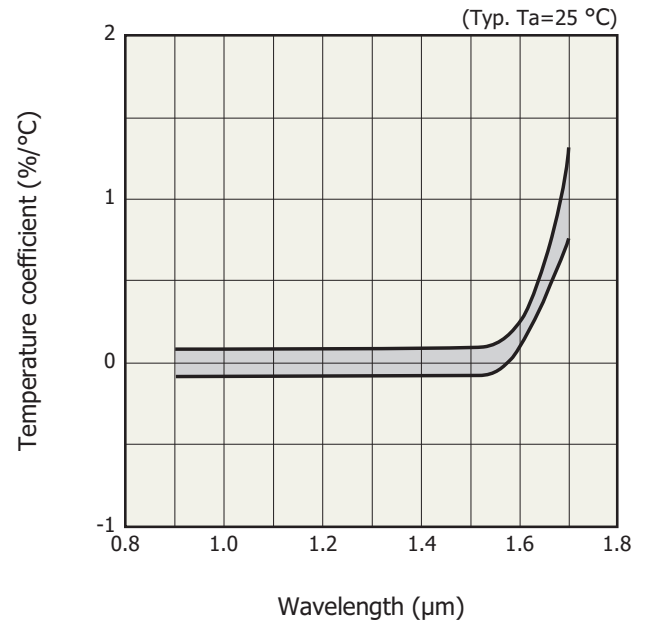
Parameter	Symbol	Condition	G7150-16			G7151-16			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Spectral response range	λ		-	0.9 to 1.7	-	-	0.9 to 1.7	-	μm
Peak sensitivity wavelength	λ _p		-	1.55	-	-	1.55	-	μm
Photosensitivity	S	λ=1.3 μm	0.8	0.9	-	0.8	0.9	-	A/W
		λ=λ _p	0.85	0.95	-	0.85	0.95	-	
Dark current	I _D	V _R =1 V	-	5	25	-	0.2	1	nA
Temperature coefficient of I _D	ΔT _{ID}	V _R =1 V	-	1.09	-	-	1.09	-	times/°C
Cutoff frequency	f _c	V _R =1 V, R _L =50 Ω λ=1.3 μm, -3 dB	10	30	-	100	300	-	MHz
Terminal capacitance	C _t	V _R =1 V, f=1 MHz	-	100	200	-	10	20	pF
Shunt resistance	R _{sh}	V _R =10 mV	10	100	-	100	1000	-	MΩ
Detectivity	D*	λ=λ _p	1 × 10 ¹²	5 × 10 ¹²	-	1 × 10 ¹²	5 × 10 ¹²	-	cm·Hz ^{1/2} /W
Noise equivalent power	NEP	λ=λ _p	-	2 × 10 ⁻¹⁴	5 × 10 ⁻¹⁴	-	3 × 10 ⁻¹⁵	2 × 10 ⁻¹⁴	W/Hz ^{1/2}

The G7150/G7151-16 may be damaged by electrostatic discharge, etc. Be carefull when using the G7150/G7151-16.

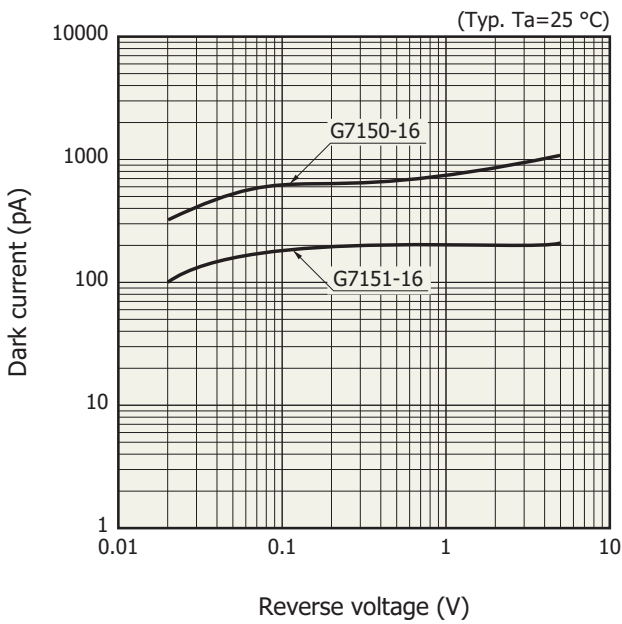
Spectral response



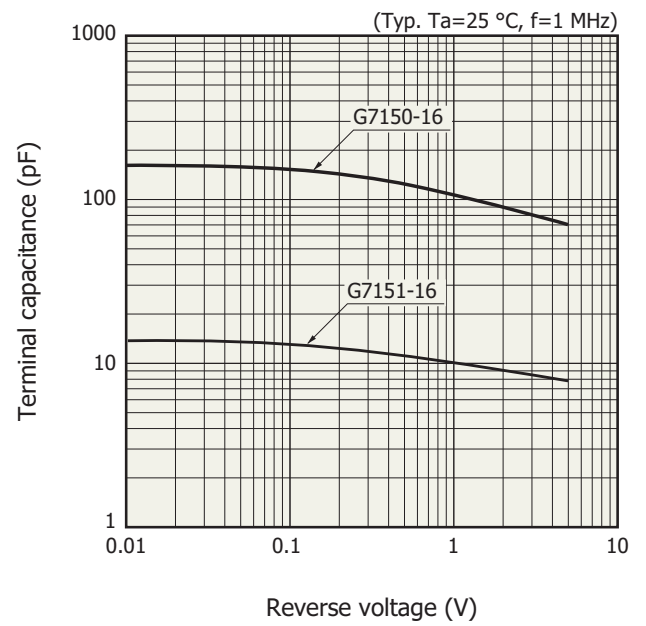
Photosensitivity temperature characteristics



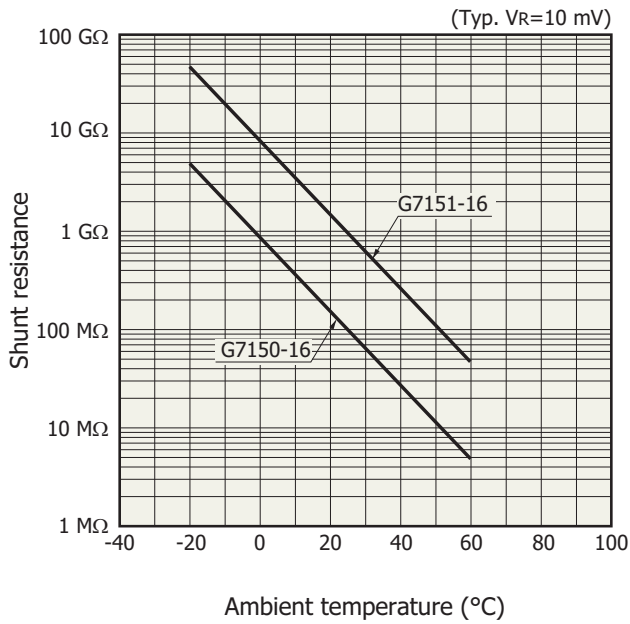
Dark current vs. reverse voltage



Terminal capacitance vs. reverse voltage



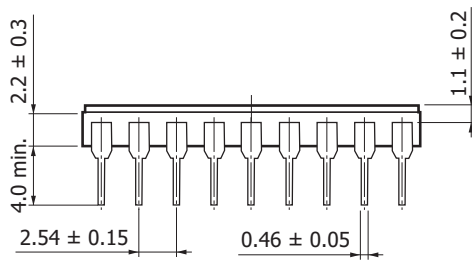
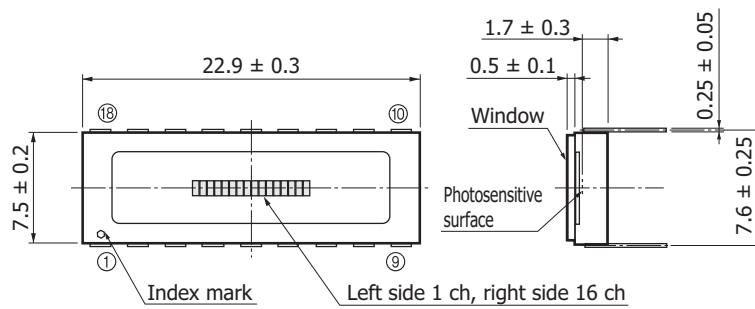
Shunt resistance vs. ambient temperature



KMIRB0013EA

Dimensional outlines (unit: mm)

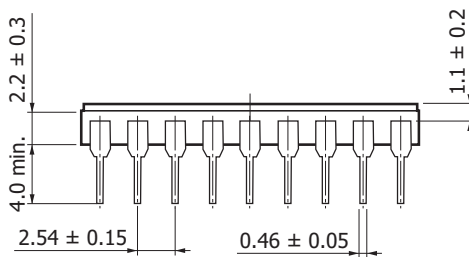
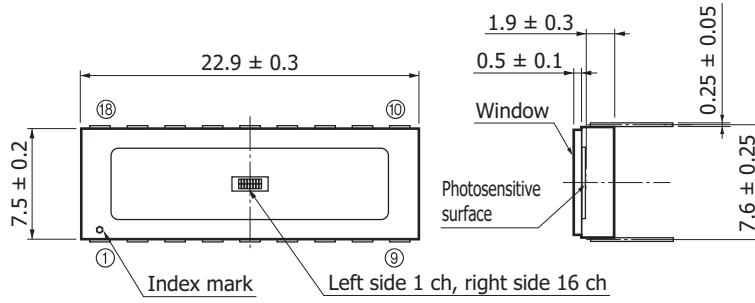
G7150-16



Position accuracy of photosensitive area center: $-0.3 \leq X \leq +0.3$
 $-0.3 \leq Y \leq +0.3$
 Position accuracy of photosensitive area inclination: $-5^\circ \leq \theta \leq +5^\circ$

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G7151-16



Position accuracy of photosensitive area center: $-0.3 \leq X \leq +0.3$
 $-0.3 \leq Y \leq +0.3$

Position accuracy of photosensitive area inclination: $-5^\circ \leq \theta \leq +5^\circ$

KIRDA0030EF

Pin connections

Pin no.	Function
1	1 ch (anode)
2	3 ch (anode)
3	5 ch (anode)
4	7 ch (anode)
5	9 ch (anode)
6	Common (cathode)
7	11 ch (anode)
8	13 ch (anode)
9	15 ch (anode)
10	16 ch (anode)
11	14 ch (anode)
12	12 ch (anode)
13	Common (cathode)
14	10 ch (anode)
15	8 ch (anode)
16	6 ch (anode)
17	4 ch (anode)
18	2 ch (anode)

Related information

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

■ Precautions

- Notice
- Metal, ceramic, plastic products/Precautions

■ Technical information

- Infrared detector/Technical information

Information described in this material is current as of July, 2012.

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The product warranty is valid for one year after delivery and is limited to product repair or replacement for defects discovered and reported to us within that one year period. However, even if within the warranty period we accept absolutely no liability for any loss caused by natural disasters or improper product use.

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