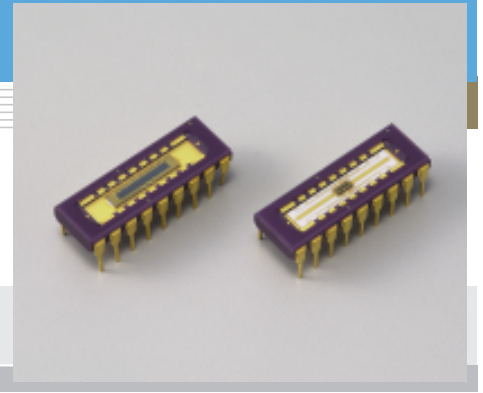


InGaAs PIN photodiode array

G7150/G7151-16

16-element array



Features

- 16-element array
- For simple measurement

Applications

- Near Infrared (NIR) spectrophotometer

General ratings

| Parameter | G7150-16 | G7151-16 | Unit |
|-------------|--------------------------|----------------------------|------|
| Package | DIP | | - |
| Active area | 0.45 × 1 (× 16 elements) | 0.08 × 0.2 (× 16 elements) | mm |

Absolute maximum ratings (Ta=25 °C)

| Parameter | Symbol | Value | Unit |
|-----------------------|--------|--------------|------|
| Reverse voltage | VR | 5 | V |
| Operating temperature | Topr | -25 to +70 * | °C |
| Storage temperature | Tstg | -25 to +70 * | °C |

* No condensation

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 |
| 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 | ID | VR=1 V | - | 5 | 25 | - | 0.2 | 1 | nA |
| Cut-off frequency | fc | VR=1 V, RL=50 Ω $\lambda=1.3 \mu\text{m}$, -3 dB | - | 30 | - | - | 300 | - | MHz |
| Terminal capacitance | Ct | VR=1 V, f=1 MHz | - | 100 | - | - | 10 | - | pF |
| Shunt resistance | Rsh | VR=10 mV | - | 100 | - | - | 1000 | - | 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 | $\lambda=\lambda_p$ | - | 2×10^{-14} | - | - | 3×10^{-15} | - | $\text{W}/\text{Hz}^{1/2}$ |

G7150/G7151-16 may be damaged by Electro Static Discharge, etc. Be careful when using G7150/G7151-16.

Spectral response

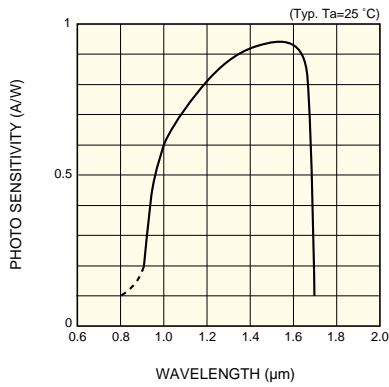
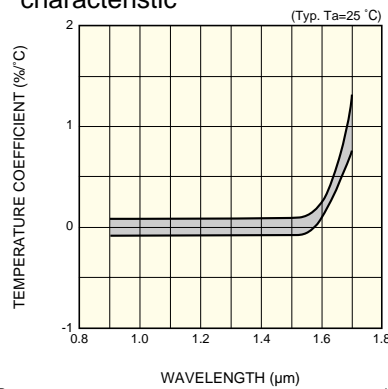
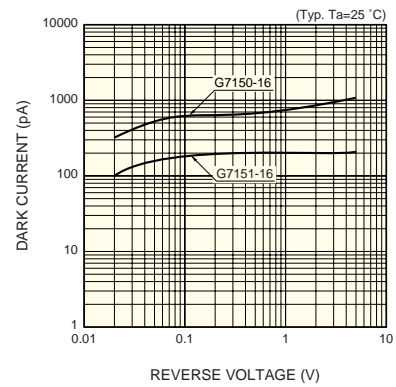


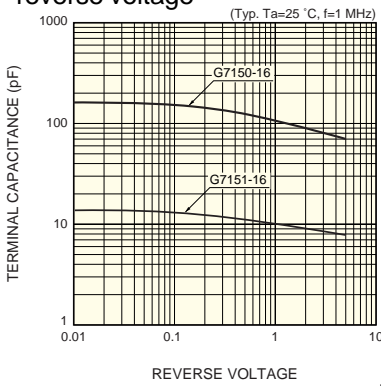
Photo sensitivity temperature characteristic



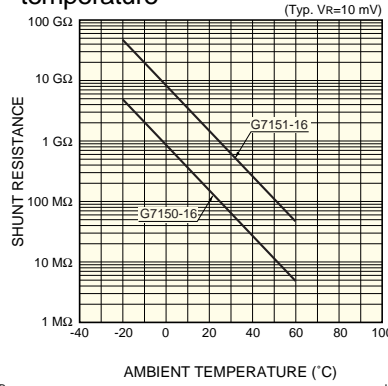
Dark current vs. reverse voltage



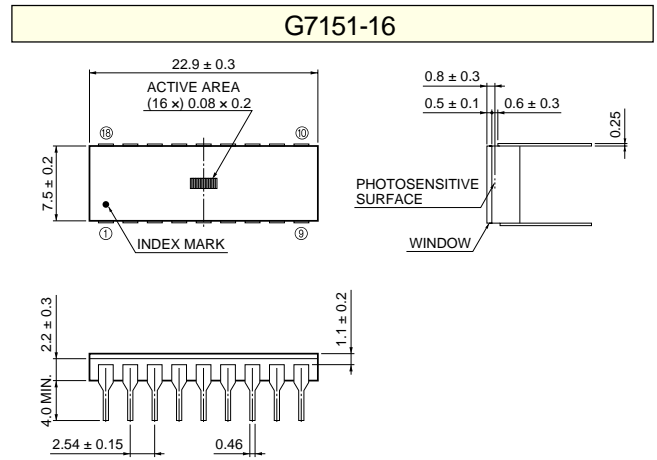
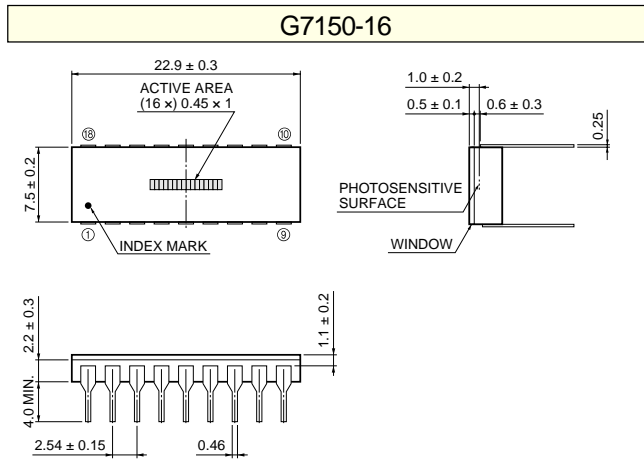
Terminal capacitance vs. reverse voltage



Shunt resistance vs. ambient temperature



Dimensional outlines (unit: mm)



| PIN No. | DETECTOR | PIN No. | DETECTOR | PIN No. | DETECTOR | PIN No. | DETECTOR |
|---------|----------|---------|----------|---------|----------|---------|----------|
| ① | 1 | ⑥ | * | ⑪ | 14 | ⑯ | 6 |
| ② | 3 | ⑦ | 11 | ⑫ | 12 | ⑰ | 4 |
| ③ | 5 | ⑧ | 13 | ⑬ | * | ⑱ | 2 |
| ④ | 7 | ⑨ | 15 | ⑭ | 10 | | |
| ⑤ | 9 | ⑩ | 16 | ⑮ | 8 | | |

* CATHODE COMMON

| PIN No. | DETECTOR | PIN No. | DETECTOR | PIN No. | DETECTOR | PIN No. | DETECTOR |
|---------|----------|---------|----------|---------|----------|---------|----------|
| ① | 1 | ⑥ | * | ⑪ | 14 | ⑯ | 6 |
| ② | 3 | ⑦ | 11 | ⑫ | 12 | ⑰ | 4 |
| ③ | 5 | ⑧ | 13 | ⑬ | * | ⑱ | 2 |
| ④ | 7 | ⑨ | 15 | ⑭ | 10 | | |
| ⑤ | 9 | ⑩ | 16 | ⑮ | 8 | | |

* CATHODE COMMON

KIRDA0144EC

KIRDA0030EE

HAMAMATSU

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. ©2007 Hamamatsu Photonics K.K.

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, 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.: 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

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