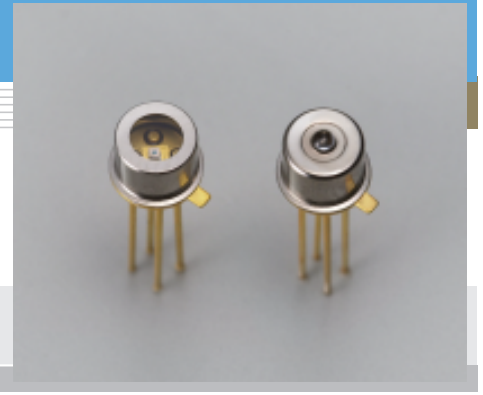


Si/GaAs PIN photodiode with preamp S7861/G8336 series

TO-18 package, 0.8 μm , 1.25, 2.1 Gbps



S7861/G8336 series are high-speed receivers specifically developed for 0.8 μm band optical fiber communications. These devices incorporate a high-speed, high-sensitivity Si or GaAs PIN photodiode integrated with a high-speed preamp, allowing easy connection to a latter-stage circuit. Lens window types are also available for efficient and easy coupling to an optical fiber.

Features

- Wide dynamic range
S7861 series (1.25 Gbps) : -21 to +3 dBm
G8336 series (2.1 Gbps) : -20 to +3 dBm
- Integrated with trans-impedance amplifier
- Active area
S7861 series: Si photodiode ($\phi 0.2$ mm)
G8336 series: GaAs photodiode ($\phi 0.08$ mm)
- Supply voltage
S7861 series: 3.3 V, 5 V
G8336 series: 3.3 V, 5 V
- Differential output

Applications

- Optical fiber communications
- IEEE1394
- Fiber channel
- Gigabit Ethernet

■ Absolute maximum ratings (Ta=25 °C)

Parameter	Symbol	S7861	S7861-02	G8336	G8336-02	Unit
Supply voltage	Vcc			-0.3, +5.5		V
Operating temperature	Topr			-20 to +70		°C
Storage temperature	Tstg			-40 to +85		°C

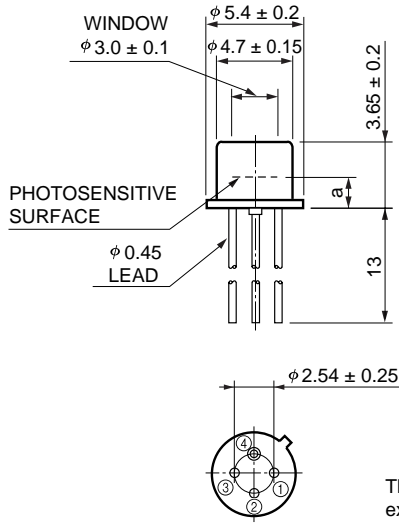
■ Specifications (Typ. Ta=25 °C, Vee=0 V, capacitive coupling, $\lambda=840$ nm, unless otherwise noted)

Parameter	Symbol	Condition	S7861	S7861-02	G8336	G8336-02	Unit
			Vcc=3.3/5 V RL=50 Ω		Vcc=3.3/5 V RL=50 Ω		
Dimensional outline	-		③	④	①	②	-
Window	-		flat	lens	flat	lens	-
Active area	A		$\phi 0.2$		$\phi 0.08$		mm
Photo sensitivity	S	Pin= -17 dBm, *1	1		0.45		V/mW
Supply current	Icc	dark state, RL= ∞	35		35 (Vcc=5 V) 25 (Vcc=3.3 V)		mA
Output bias voltage	Vo	dark state, RL= ∞	Vcc - 1.7		Vcc - 0.2		V
Rise time	tr	Pin= -17 dBm 20 to 80 %	300		200		ps
Data rate	B		1.25 G		2.1 G		bps

*1: Single ended (Vout+) measurement

■ Dimensional outlines (unit: mm)

① G8336



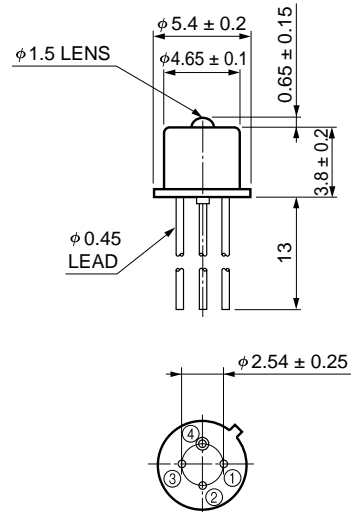
- ① Vout +
- ② Vcc
- ③ Vout -
- ④ Vee (CASE)

The borosilicate glass window may extend a maximum of 0.1 mm beyond the upper surface of the cap.

	S8334	G8336
a	1.8	1.6

KPINA0080EA

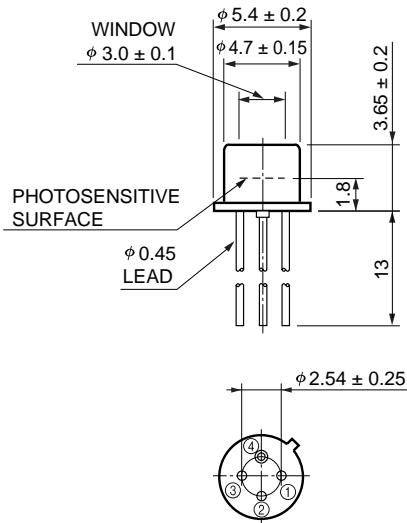
② G8336-02



- ① Vout +
- ② Vcc
- ③ Vout -
- ④ Vee (CASE)

KIRDA0098EA

③ S7861

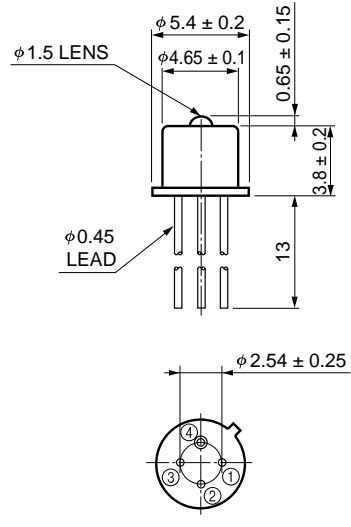


- ① Vout -
- ② Vcc
- ③ Vout +
- ④ Vee (CASE)

The borosilicate glass window may extend a maximum of 0.1 mm beyond the upper surface of the cap.

KSPDA0130EA

④ S7861-02



- ① Vout -
- ② Vcc
- ③ Vout +
- ④ Vee (CASE)

KIRDA0067EA

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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