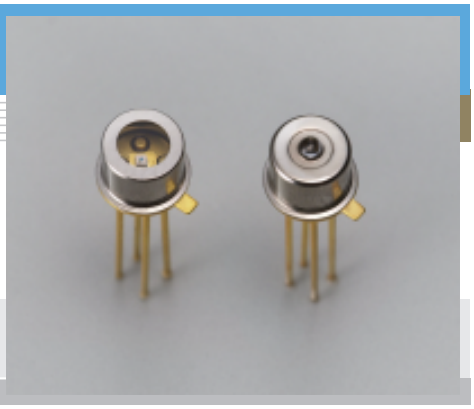
InGaAs PIN photodiode with preamp
G8338/G8341/G7871/G8795 series



TO-18 package, 1.3/1.55 μm, 156, 622 Mbps/1.25, 2.5 Gbps

G8338/G8341/G7871/G8795 series are high-speed receivers specifically developed for 1.3/1.55 μm band optical fiber communications. These devices incorporate a high-speed, high-sensitivity InGaAs 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
  G8338 series (156 Mbps) : -37 to -5 dBm
  G8341 series (622 Mbps) : -32 to -5 dBm
  G7871 series (1.25 Gbps) : -25 to -1 dBm
  G8795 series (2.5 Gbps) : -22 to +1 dBm
- Integrated with trans-impedance amplifier
- Active area
  G8338/G7871 series: ϕ0.08 mm
  G8341/G8795 series: ϕ0.04 mm
- Supply voltage
  G8338/G8341 series: 3.3 V
  G7871/G8795 series: 3.3 V, 5 V
- Differential output

Applications

- Optical fiber communications
- Fiber channel
- Gigabit Ethernet
- HDTV
- SDH

■ Absolute maximum ratings (Ta=25 °C)

Parameter	Symbol	G8338	G8338-02	G8341	G8341-02	G7871	G7871-02	G8795	G8795-02	Unit
Supply voltage	Vcc	-0.3, +3.8		-0.3, +3.8		-0.3, +5.5		-0.5, +6		V
Operating temperature	Topr	-40 to +85								°C
Storage temperature	Tstg	-40 to +85								°C

■ Specifications (Typ. Ta=25 °C, Vee=0 V, capacitive coupling, λ=1.31 μm, unless otherwise noted)

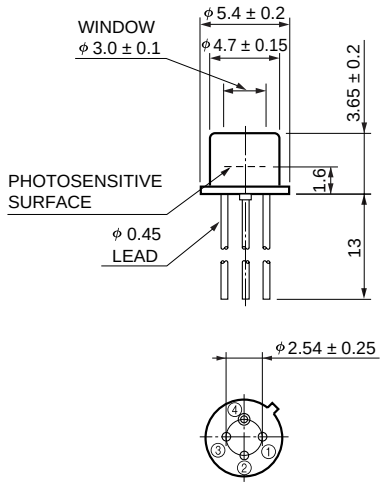
Parameter	Symbol	Condition	G8338	G8338-02	G8341	G8341-02	G7871	G7871-02	G8795	G8795-02	Unit
			Vcc=3.3 V RL=500 Ω *1		Vcc=3.3 V RL=500 Ω *1		Vcc=3.3/5 V RL=50 Ω		Vcc=3.3/5 V RL=50 Ω		
Dimensional outline	-		①	②	①	②	③	④	①	②	-
Window	-		flat	lens	flat	lens	flat	lens	flat	lens	-
Active area	A		ϕ0.08		ϕ0.04		ϕ0.08		ϕ0.04		mm
Photo sensitivity	S	*2, *3	27		17		2.8		1.2		V/mW
Supply current	Icc	dark state, RL=∞	25		30		35		35		mA
Output bias voltage	Vo	dark state, RL=∞	1.5		1.65		Vcc - 1.7		Vcc - 0.25		V
Rise time	tr	*3 20 to 80 %	2000		500		250		150		ps
Data rate	B		156 M		622 M		1.25 G		2.5 G		bps

*1: G8338/G8341 series cannot be operated with RL=50 Ω, so they should be used with a load resistance larger than 500 Ω.
*2: Single ended (Vout+) measurement.
*3: G8338/G8341 series: Pin= -30 dBm
G7871 series: Pin= -22 dBm
G8795 series: Pin= -17 dBm

SOLID STATE DIVISION

■ Dimensional outlines (unit: mm)

① G8338, G8341, G8795

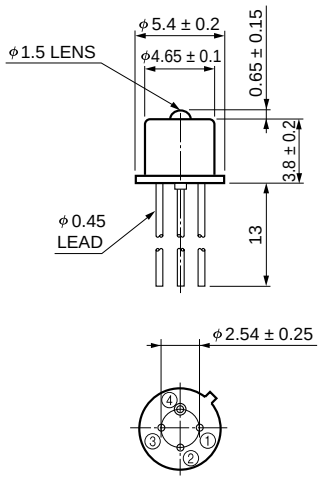


① Vout +
② Vcc
③ Vout -
④ Vee (CASE)

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

KIRDA0104EA

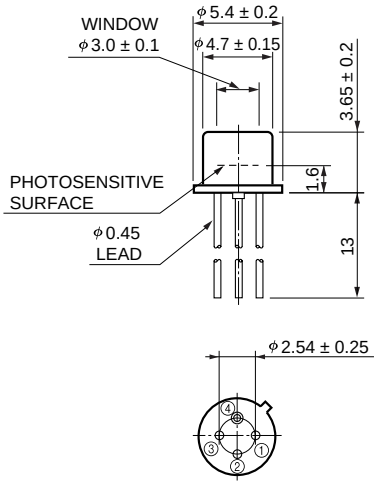
② G8338-02, G8341-02, G8795-02



① Vout +
② Vcc
③ Vout -
④ Vee (CASE)

KIRDA0098EA

③ G7871

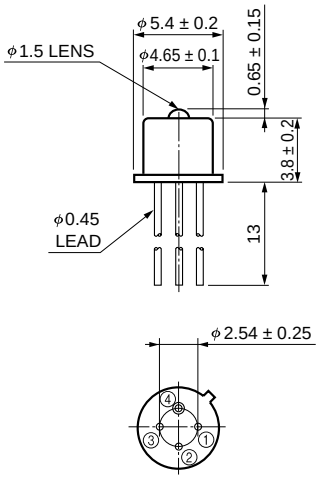


① Vout -
② Vcc
③ Vout +
④ Vee (CASE)

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

KIRDA0105EA

④ G7871-02



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

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