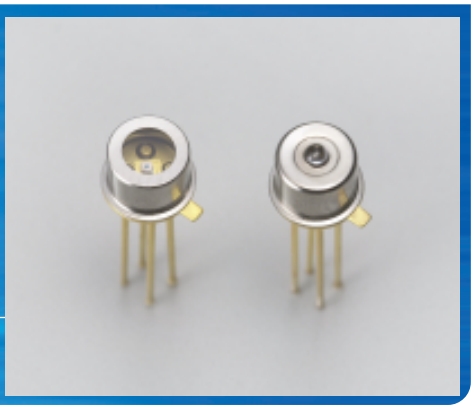
NEW

PHOTODIODE

Si/GaAs PIN photodiode with preamp
S8334/S7861/G8336 series

TO-18 package, 0.65/0.8 μm, 500 Mbps/1.25, 2.1 Gbps



S8334/S7861/G8336 series devices are high-speed receivers specifically developed for 0.65/0.8 μm band optical fiber communications. These devices use a high-speed, high-sensitivity PIN photodiode integrated with a fast 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
  S8334 series (500 Mbps) : -25 to +3 dBm
  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
  S8334 series: Si photodiode (ϕ0.4 mm)
  S7861 series: Si photodiode (ϕ0.2 mm)
  G8336 series: GaAs photodiode (ϕ0.08 mm)
- Supply voltage
  S8334 series: 5 V
  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	S8334	S8334-02	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, λ=840 nm, unless otherwise noted)

Parameter	Symbol	Condition	S8334	S8334-02	S7861	S7861-02	G8336	G8336-02	Unit
			Vcc=5 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	③	④	①	②	
Window	-		flat	lens	flat	lens	flat	lens	-
Active area	A		ϕ0.4		ϕ0.2		ϕ0.08		mm
Photo sensitivity	S	Pin= -17 dBm, *2	2		1		0.45		V/mW
Supply current	Icc	dark state, RL=∞	45		35		35 (Vcc=5 V) 25 (Vcc=3.3 V)		mA
Output bias voltage	Vo	dark state, RL=∞	2.5		Vcc - 1.7		Vcc - 0.2		V
Rise time	tr	Pin= -17 dBm 20 to 80 %	1000		300		200		ps
Data rate	B		500 M		1.25 G		2.1 G		bps

*1: S8334 series cannot be operated with RL=50 Ω, so it should be used with a load resistance larger than 500 Ω.
*2: Single ended (Vout+) measurement

PRELIMINARY DATA
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SOLID STATE DIVISION

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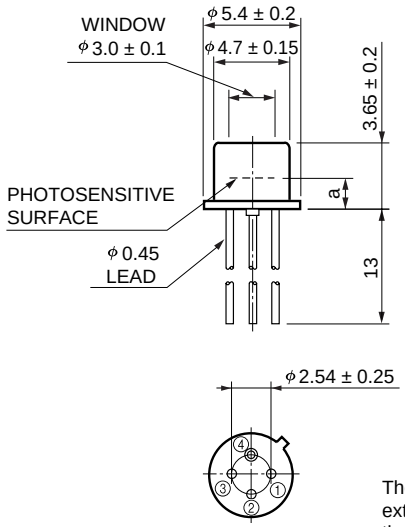
■ Dimensional outlines (unit: mm)

① S8334, G8336



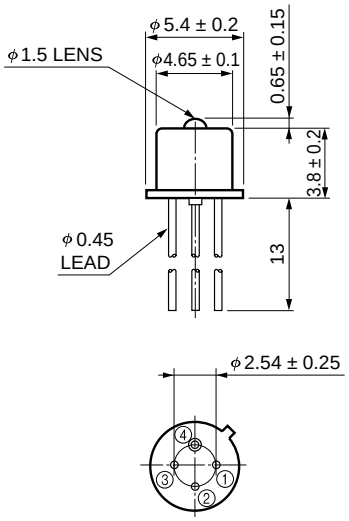
The borosilicate glass window may extend a maximum of 0.1 mm beyond the upper surface of the cap.

	S8334	G8336
a	1.8	1.6

① Vout +
② Vcc
③ Vout -
④ Vee (CASE)

KPINA0080EA

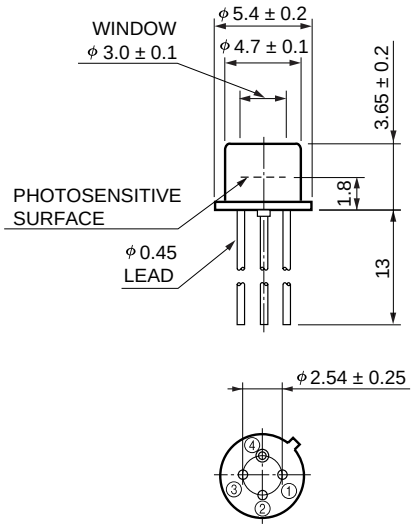
② S8334-02, G8336-02



① Vout +
② Vcc
③ Vout -
④ Vee (CASE)

KIRDA0098EA

③ S7861

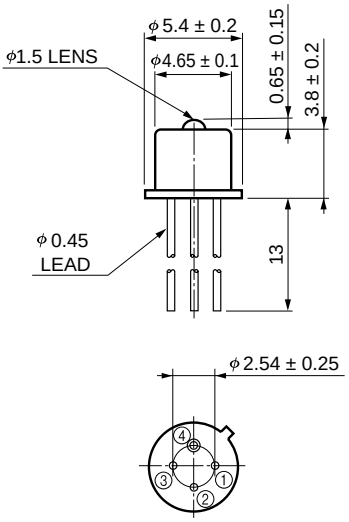


① Vout -
② Vcc
③ Vout +
④ Vee (CASE)

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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