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Infrared LED

L9337 series

High power LED for optical switches

The L9337 series is an infrared LED developed for optical switches. Because a high-power LED chip is mounted, the L9337 series provides higher radiant output power than previous devices, moreover it is available at a low cost due to the improved manufacturing process. The L9337-01/-02 use a high reliability package making them suitable for automobile applications.

Features

- **High radiant output power**
- **High reliability**
- **Low price**

Applications

- **Optical switches**
- **Automobiles**

Absolute maximum ratings (Ta=25 °C, unless otherwise noted)

Parameter	Symbol	Condition	Value	Unit
Reverse voltage	V_R		5	V
Forward current	I_F		80	mA
Forward current decrease rate	-	Ta > 25 °C	1.1	mA/°C
Pulse forward current	I_{FP}	Pulse width=10 µs Duty ratio=1%	1.0	A
Pulse forward current decrease rate	-	Ta > 25 °C	13	mA/°C
Power dissipation	P		150	mW
Operating temperature	Topr		-30 to +85	°C
Storage temperature	Tstg		-40 to +100*1	°C

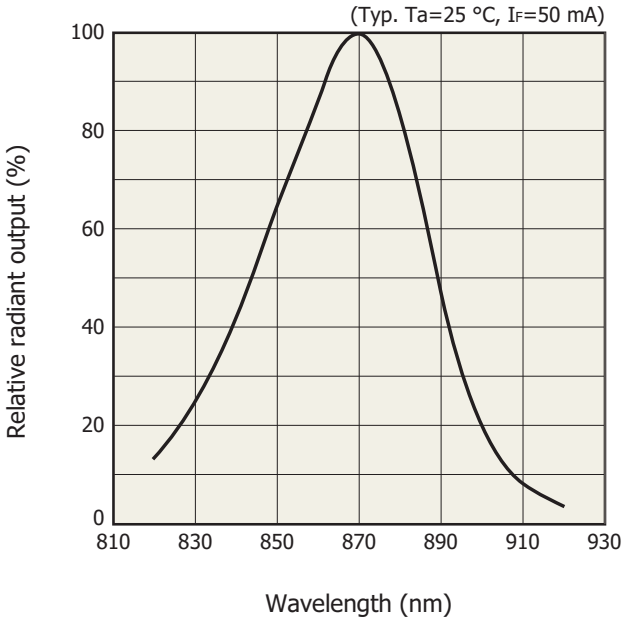
*1: The L9337 is guaranteed to resist temperature cycle test of up to 5 cycles.
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

Electrical and optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	L9337			L9337-01			L9337-02			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Peak emission wavelength	λp	I_F=50 mA	840	870	900	840	870	900	840	870	900	nm
Spectral half width	Δλ	I_F=50 mA	-	45	-	-	45	-	-	45	-	nm
Forward voltage	V_F	I_F=50 mA	-	1.42	1.5	-	1.42	1.5	-	1.42	1.5	V
Pulse forward voltage	V_{FP}	I_F=1 A	-	2.7	3.4	-	2.7	3.4	-	2.7	3.4	V
Reverse current	I_R	V_R=5 V	-	-	5	-	-	5	-	-	5	µA
Radiant flux	ϕe	I_F=50 mA	18	23	-	10	13	-	7.5	10	-	mW
Cut-off frequency*2	fc	I_F=50 mA ± 4 mAp-p	25	40	-	25	40	-	25	40	-	MHz

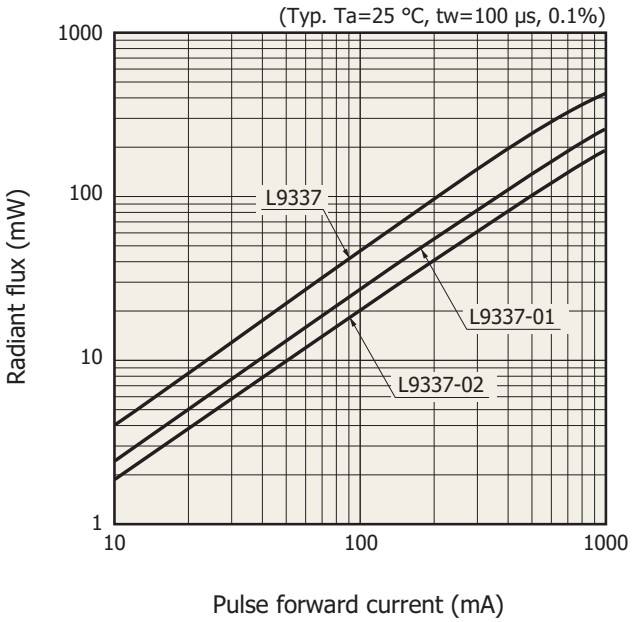
*2: Frequency at which the optical output drops by -3 dB from that at 100 kHz.

Emission spectrum



KLEDB0249EA

Radiant flux vs. pulse forward current



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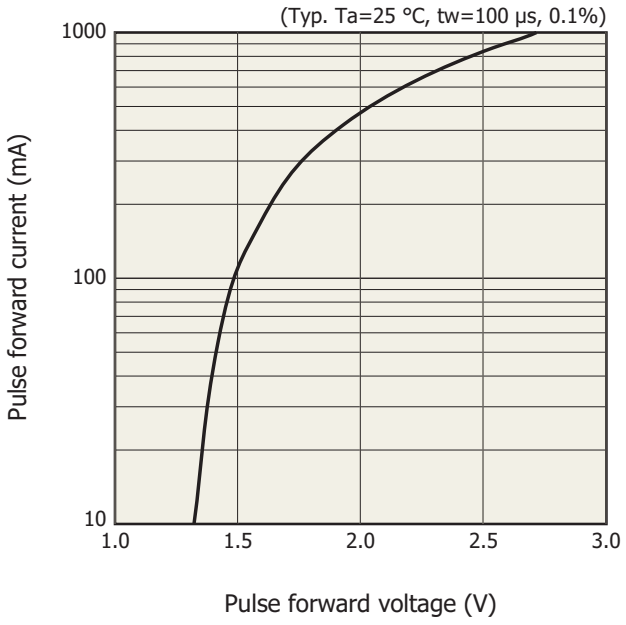
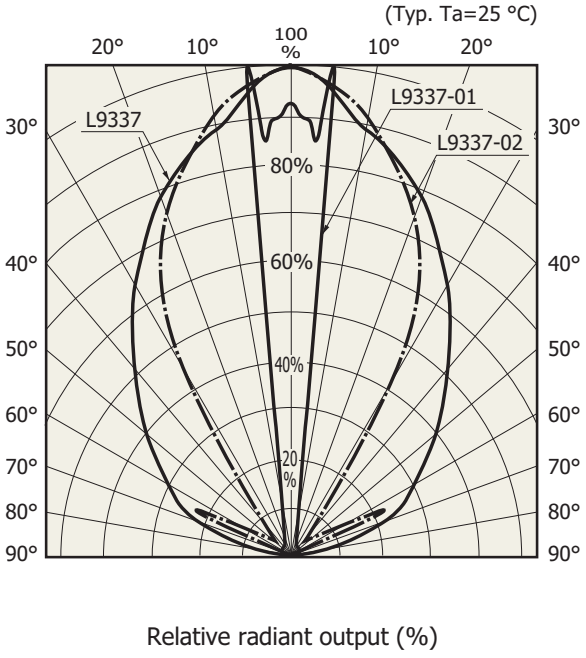
Pulse forward current vs. pulse forward voltage



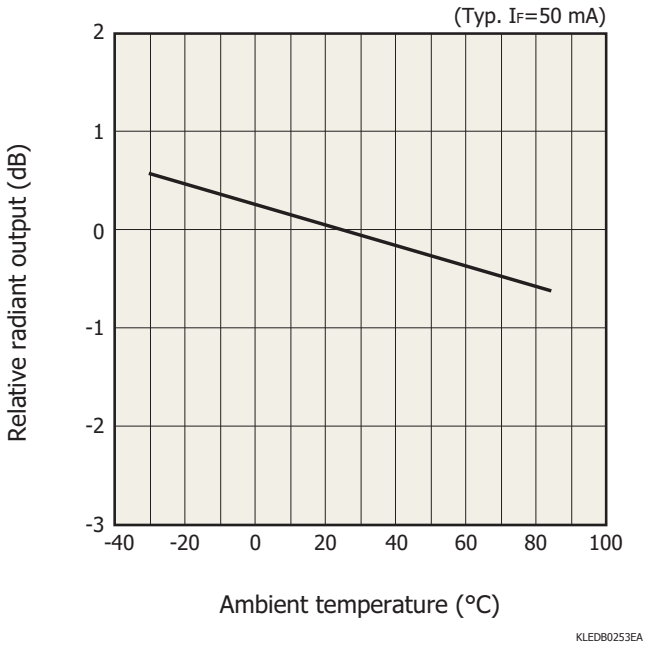
KLEDB0251EC

Directivity



KLEDB0252EB

Radiant output vs. ambient temperature



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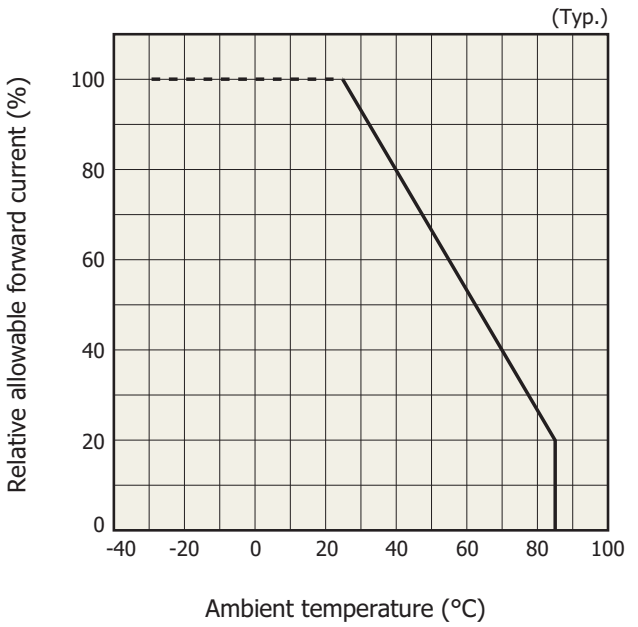
Allowable forward current vs. ambient temperature



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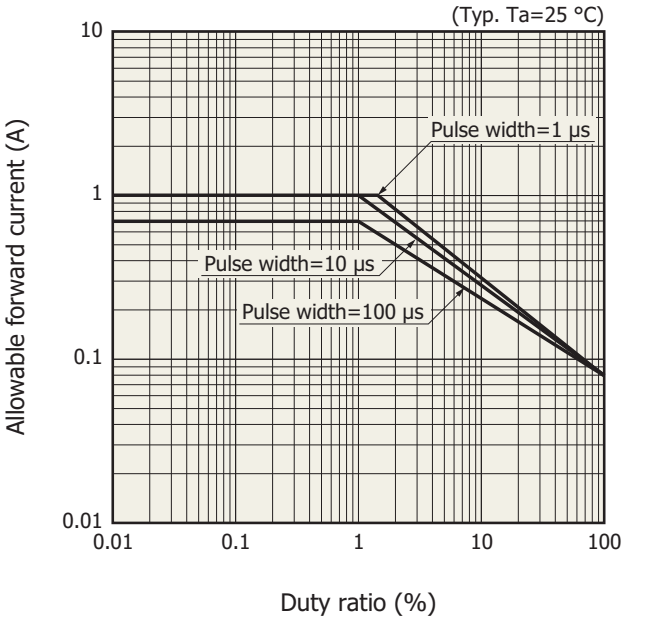
Allowable forward current vs. duty ratio



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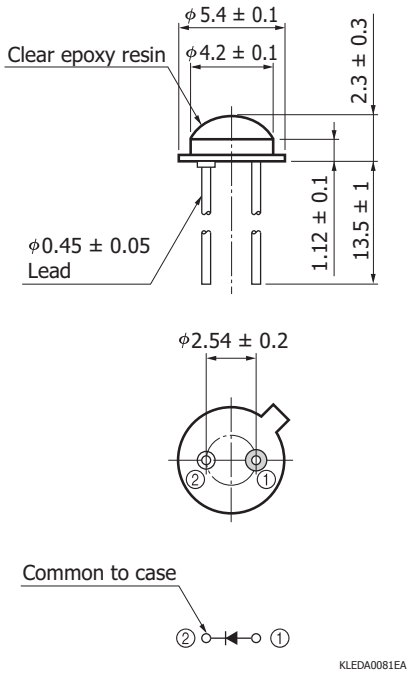
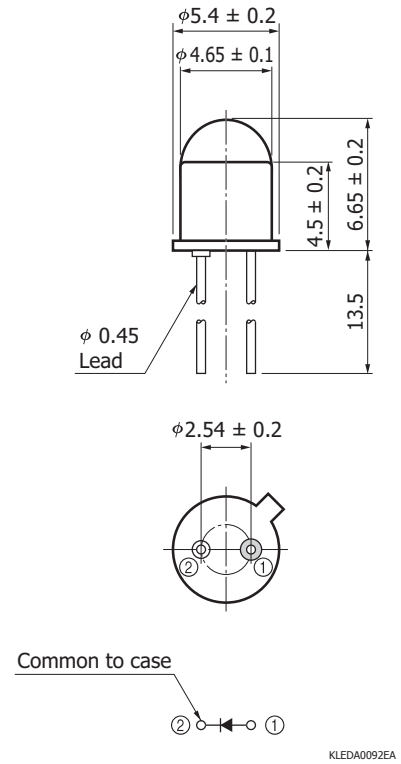
Dimensional outlines (unit: mm)

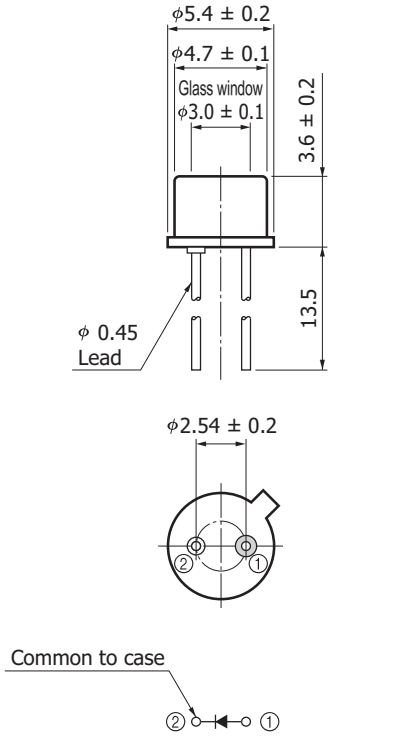
L9337



L9337-01



L9337-02



Related information

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

■ Precautions

· Notice
· Metal, ceramic, plastic package products / Precautions

■ Technical information

· LED / Technical information

Information described in this material is current as of September, 2013.
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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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HAMAMATSU www.hamamatsu.com

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
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) 8152-375-0, Fax: (49) 8152-265-8
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: Thorshamnsgatan 35 16440 Kista, Sweden, Telephone: (46) 8-509-031-00, Fax: (46) 8-509-031-01
Italy: Hamamatsu Photonics Italia S.R.L.: Strada della Moia, 1 int. 6, 20020 Arese, (Milano), Italy, Telephone: (39) 02-935-81-733, Fax: (39) 02-935-81-741
China: Hamamatsu Photonics (China) Co., Ltd.: 1201 Tower B, Jiaming Center, No.27 Dongsanhuan Beilu, Chaoyang District, Beijing 100020, China, Telephone: (86) 10-6586-6006, Fax: (86) 10-6586-2866

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