

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	-	T _a > 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	-	T _a > 25 °C	13	mA/°C
Power dissipation	P		150	mW
Operating temperature	T _{opr}		-30 to +85	°C
Storage temperature	T _{stg}		-40 to +100*1	°C

*1: The L9337 is guaranteed to resist temperature cycle test of up to 5 cycles.

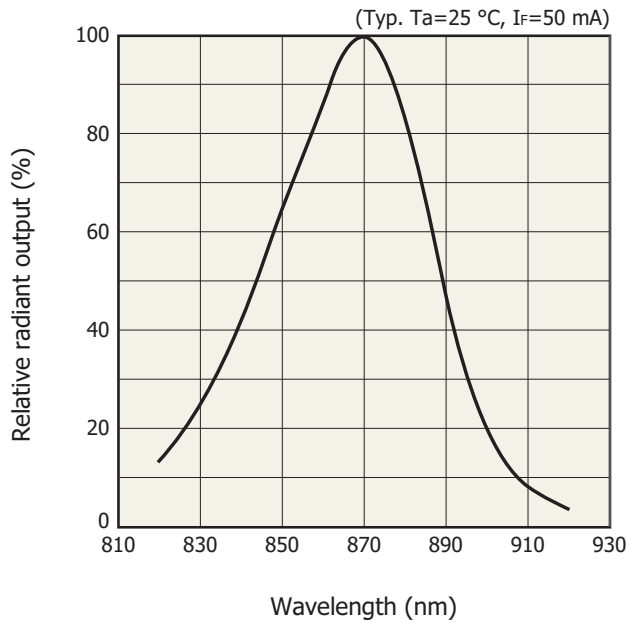
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

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	λ _p	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	φ _e	I _F =50 mA	18	23	-	10	13	-	7.5	10	-	mW
Cut-off frequency*2	f _c	I _F =50 mA ± 4 mAp-p	25	40	-	25	40	-	25	40	-	MHz

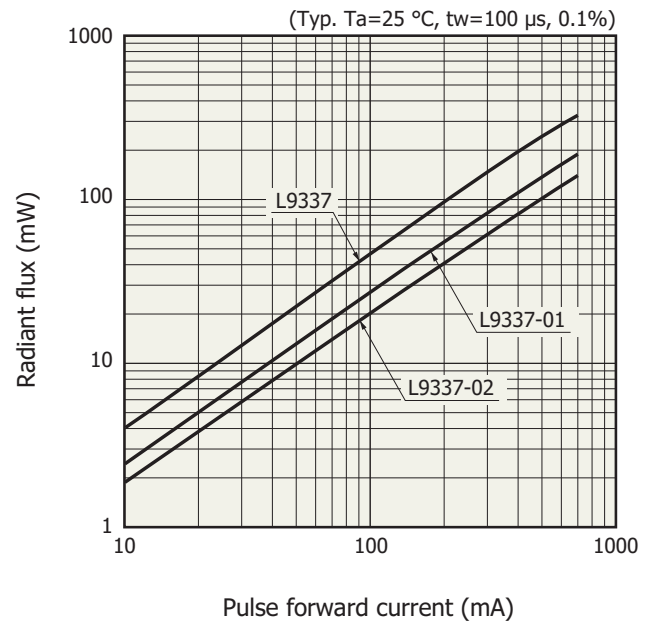
*2: Frequency at which the optical output drops by -3 dB from that at 100 kHz.

Emission spectrum



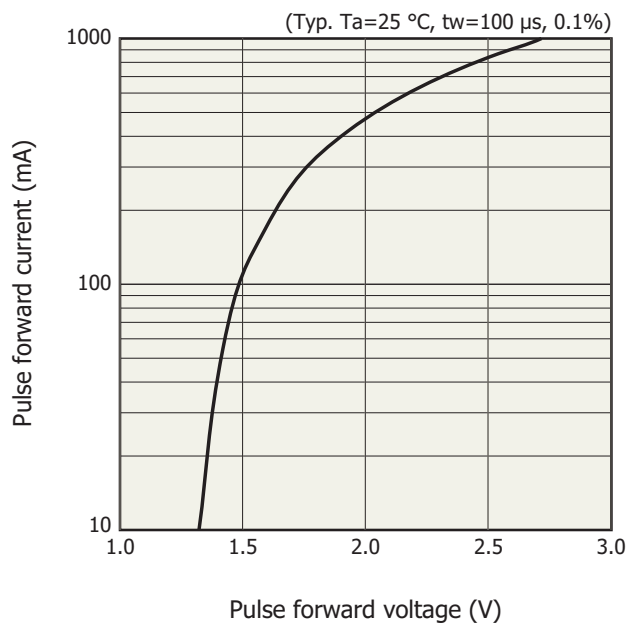
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Radiant flux vs. pulse forward current



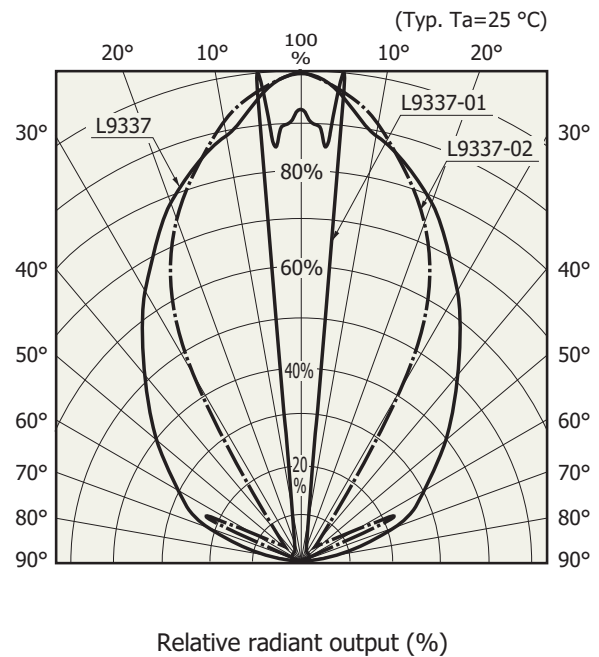
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Pulse forward current vs. pulse forward voltage



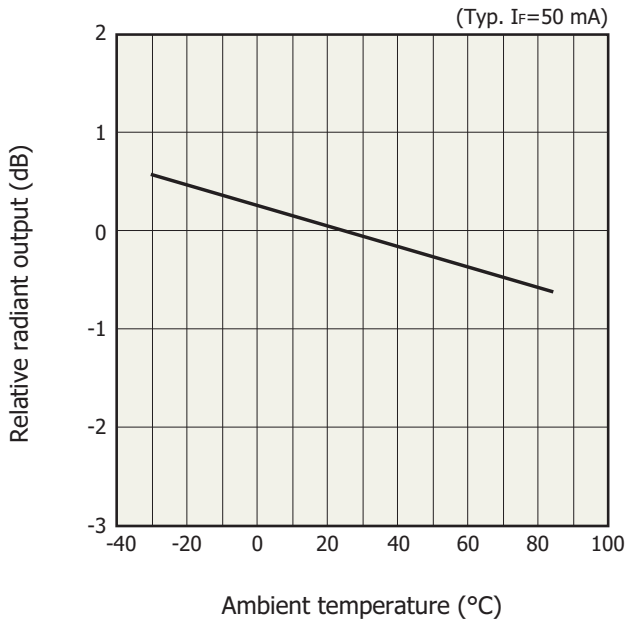
KLEDB0251EC

Directivity



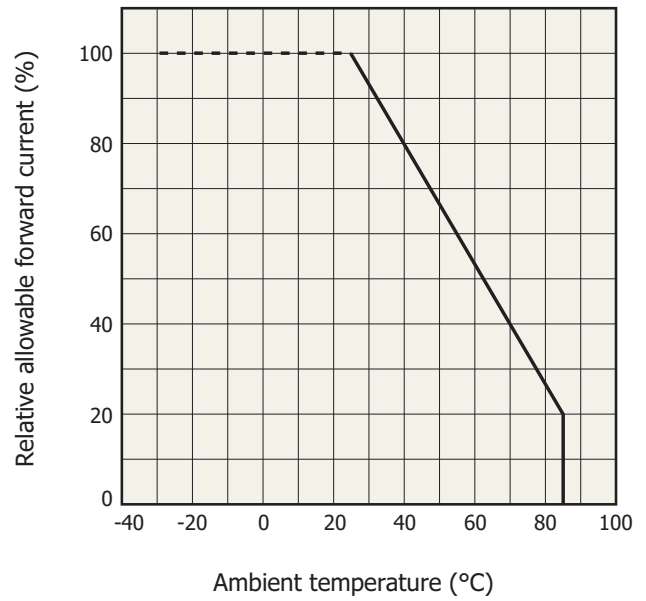
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❑ Radiant output vs. ambient temperature



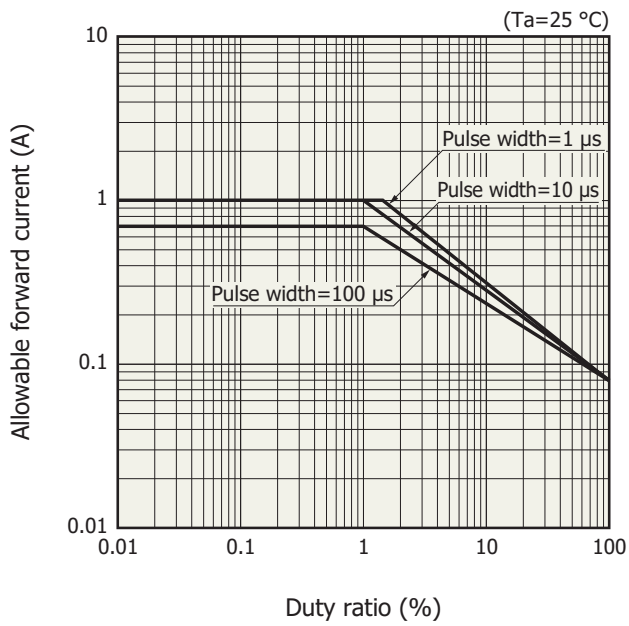
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❑ Allowable forward current vs. ambient temperature



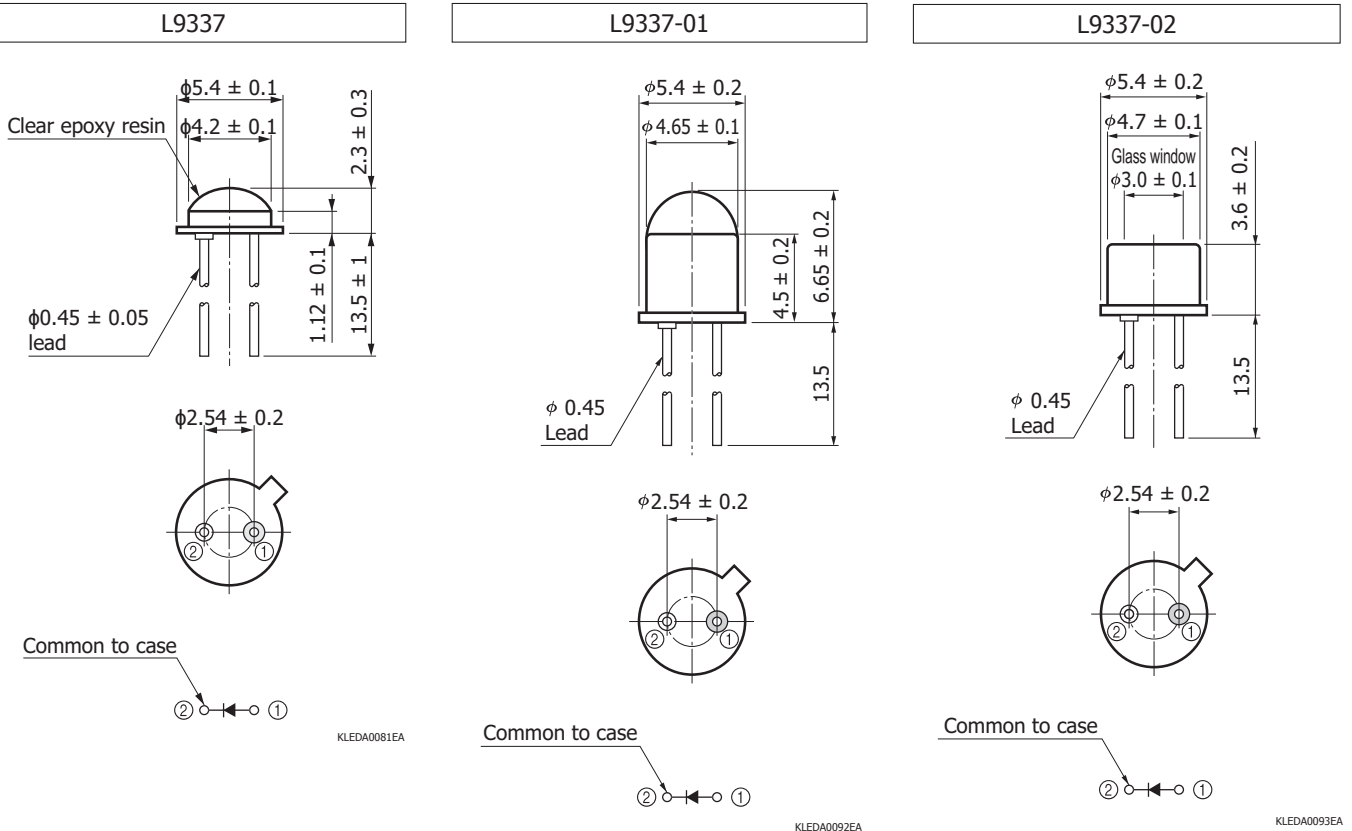
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❑ Allowable forward current vs. duty ratio



KLEDB0038EB

Dimensional outlines (unit: mm)



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 January, 2016.

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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, Bridgewater, N.J. 08807, 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: Torshamnsgatan 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) 02-93581733, Fax: (39) 02-93581741

China: Hamamatsu Photonics (China) Co., Ltd.: B1201, Jiaiming Center, No.27 Dongsanhuan Beilu, Chaoyang District, Beijing 100020, China, Telephone: (86) 10-6586-6006, Fax: (86) 10-6586-2866

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