



L12170

## High-speed, high power LED encapsulated in a low cost package

The L12170 is an infrared LED encapsulated in a bullet-shaped package. It offers low-cost, high output power, and high-speed response.

### Features

- Low cost package: bullet type
- High-speed response
- High output power

### Applications

- Infrared lighting
- Measuring devices
- Industrial instrument

### Absolute maximum ratings (Ta=25 °C)

Parameter	Symbol	Condition	Value	Unit
Reverse voltage	VR		5	V
Forward current	IF		300	mA
Forward current decrease rate	-	Ta>25 °C	4	mA/°C
Pulse forward current	IFP	*1	5	A
Pulse forward current decrease rate	-	Ta>25 °C *1	66	mA/°C
Power dissipation	P		600	mW
Operating temperature	Topr	No condensation	-30 to +85	°C
Storage temperature	Tstg	No condensation	-40 to +100	°C
Soldering condition	-		230 °C or less, within 5 second, at least 2 mm away from resin bottom surface	

\*1: Pulse width=10 μs, duty ratio=1%

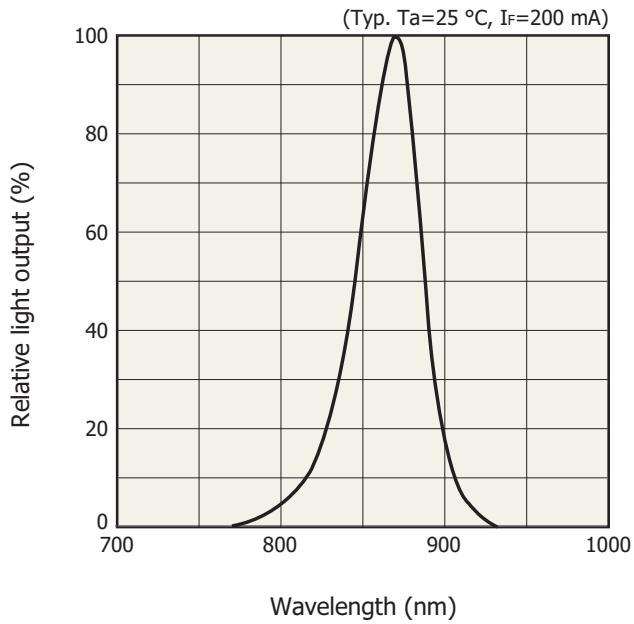
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

### Electrical and optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Peak emission wavelength	λp	IF=200 mA	840	870	900	nm
Forward voltage	VF	IF=200 mA	-	1.45	1.7	V
Pulse forward voltage	VFP	IFP=3 A *1	-	2.4	4.5	V
Reverse current	IR	VR=5 V	-	-	20	μA
Radiant flux	φe	IF=200 mA	60	80	-	mW
Radiant intensity	Ie	IF=200 mA	100	150	-	mW/sr
Pulse radiant flux	φep	IFP=3 A *1	900	1200	-	mW
Pulse radiant intensity	Iep	IFP=3 A *1	1600	2200	-	mW/sr
Cutoff frequency*2	fc	IF=200 mA ± 1 mA p-p	25	40	-	MHz

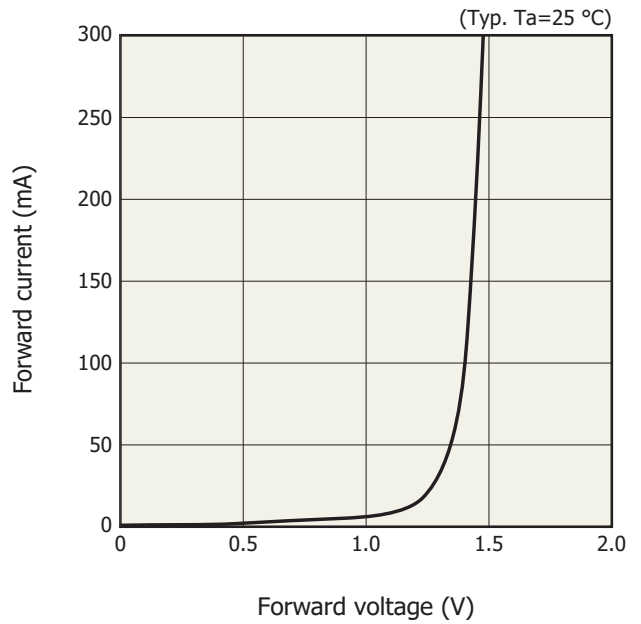
\*2: Frequency at which the radiant output drops by 3 dB relative to the output at 100 kHz

**Emission spectrum**



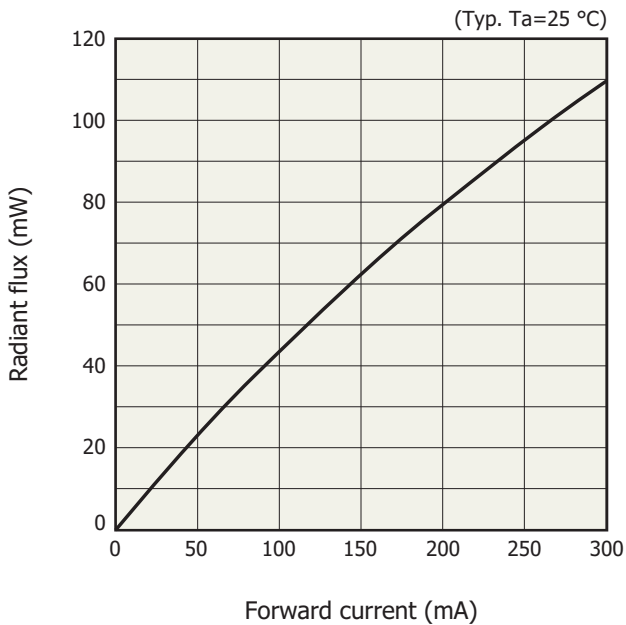
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**Forward current vs. forward voltage**



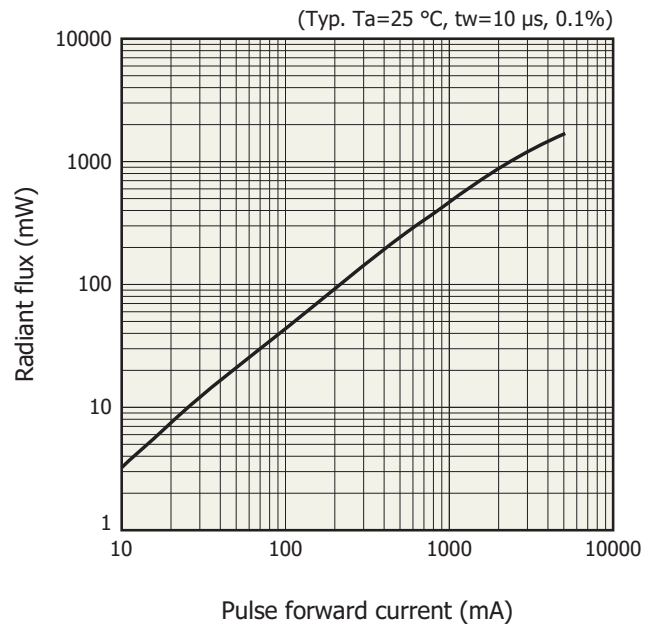
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**Radiant flux vs. forward current**



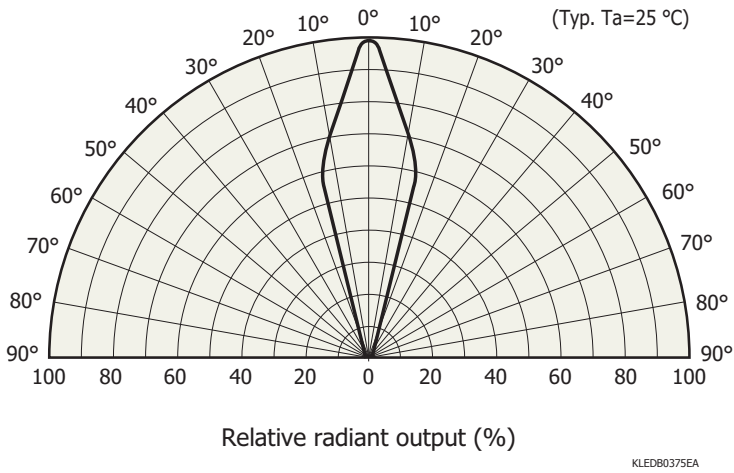
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**Radiant flux vs. pulse forward current**

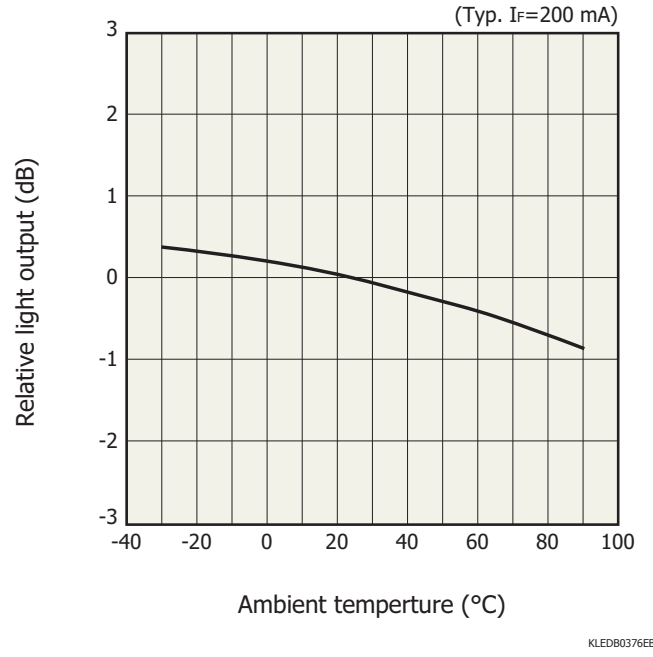


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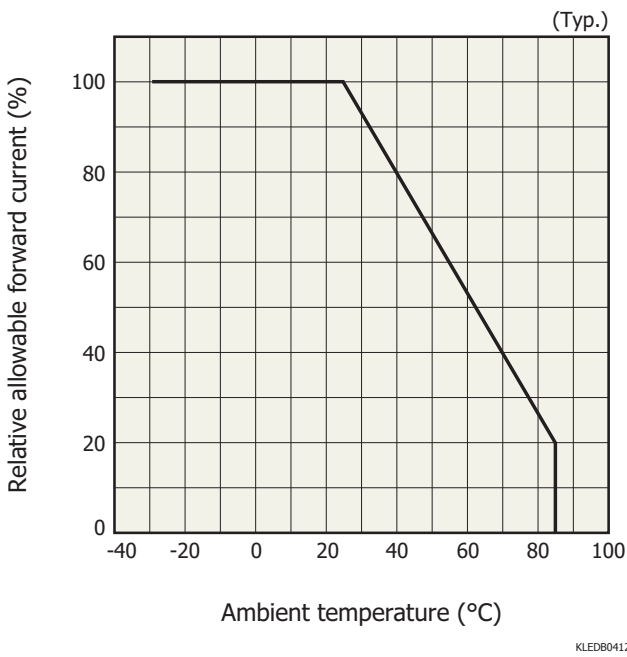
**Directivity**



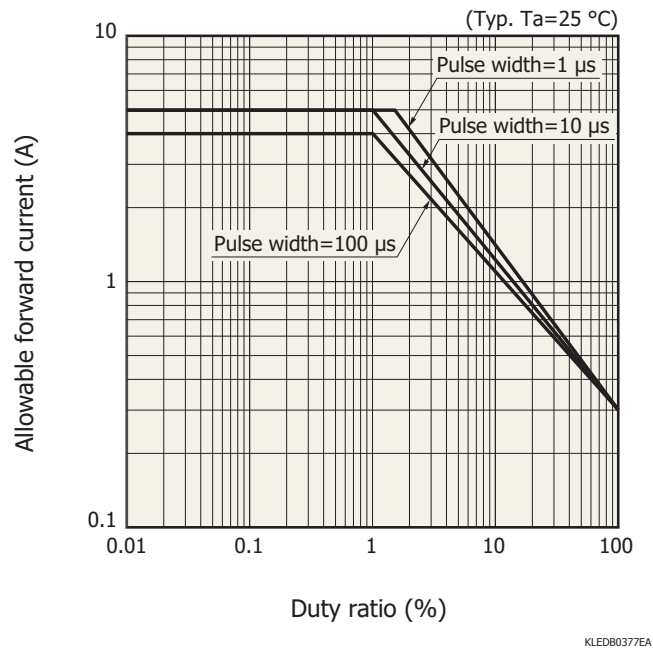
**Light output vs. ambient temperature**



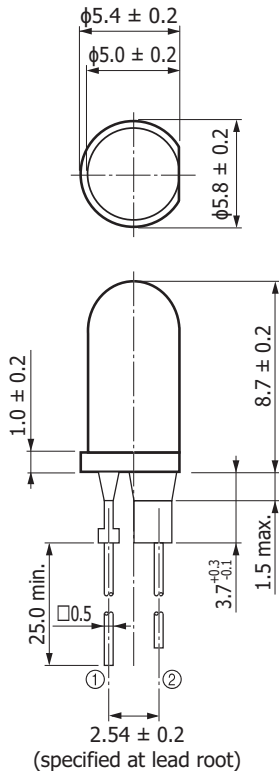
**Allowable forward current vs. ambient temperature**



**Allowable forward current vs. duty ratio**



### Dimensional outline (unit: mm)



① ○ ▶ ○ ②      Standard packing state: anti-static bag  
(100 pcs/pack)

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### Related information

[www.hamamatsu.com/sp/ssd/doc\\_en.html](http://www.hamamatsu.com/sp/ssd/doc_en.html)

#### Precautions

- Notice
- Metal, ceramic, plastic products

Information described in this material is current as of August, 2014.

Product specifications are subject to change without prior notice due to improvements or other reasons. This document has been carefully prepared and the information contained is believed to be accurate. In rare cases, however, there may be inaccuracies such as text errors. Before using these products, always contact us for the delivery specification sheet to check the latest specifications.

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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