

Infrared LED

L12170



High power LED in a bullet-shaped package (φ5 mm)

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

Features

- Peak emission wavelength: 870 nm
- High output power
- High-speed response

Applications

- Infrared lighting
- Industrial instrument
- Measuring device

Absolute maximum ratings (Ta=25 °C)

Parameter	Symbol	Condition	Value	Unit
Reverse voltage	V _R		5	V
Forward current	I _F		300	mA
Forward current decrease rate	-	T _a >25 °C	4	mA/°C
Pulse forward current	I _{FP}	*1	5	A
Pulse forward current decrease rate	-	T _a >25 °C*1	66	mA/°C
Power dissipation	P		600	mW
Operating temperature	T _{opr}	No condensation	-30 to +85	°C
Storage temperature	T _{stg}	No condensation	-40 to +100	°C
Soldering condition	-		230 °C or less, within 5 second, at least 2 mm away from resin bottom surface	-

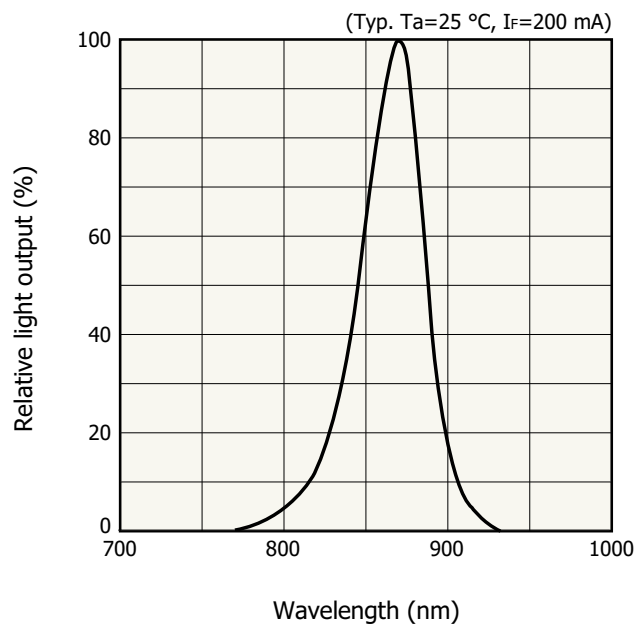
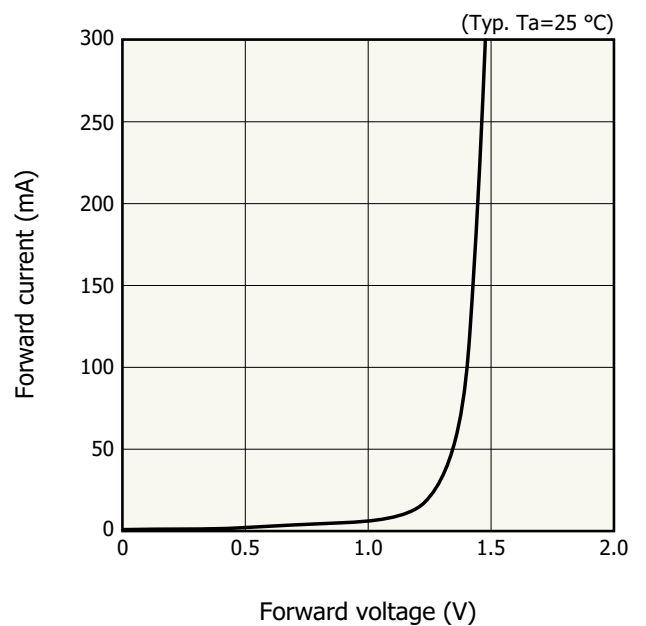
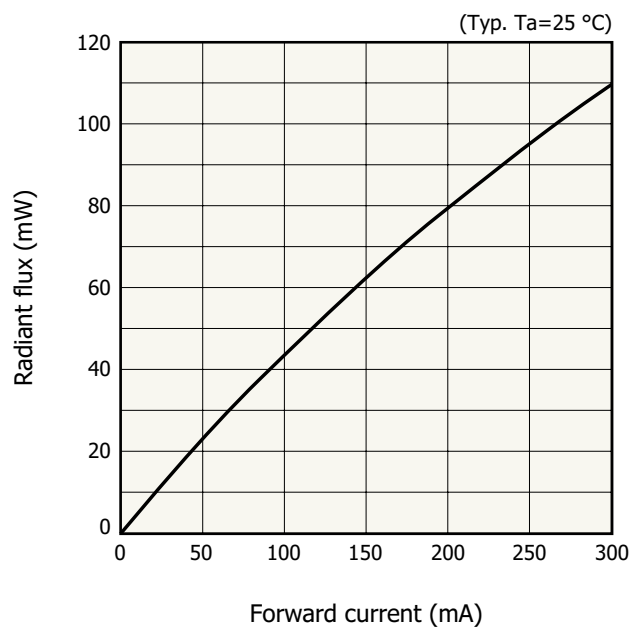
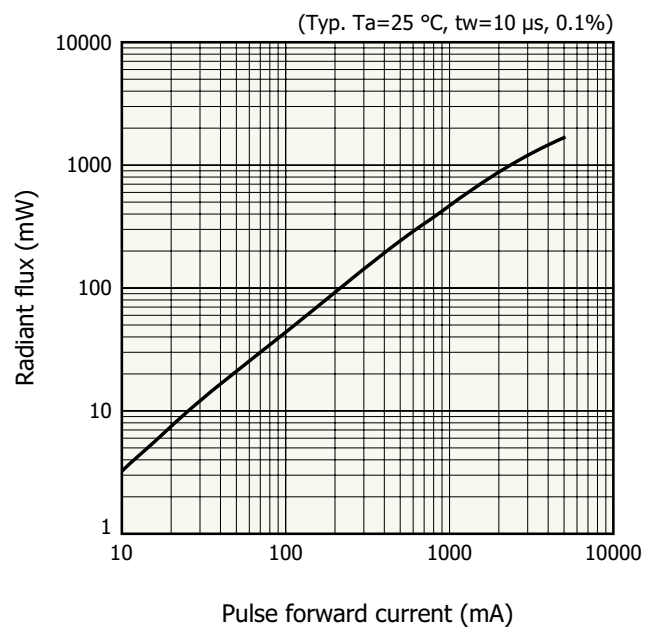
*1: Pulse width=10 μs, duty ratio=1%

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.

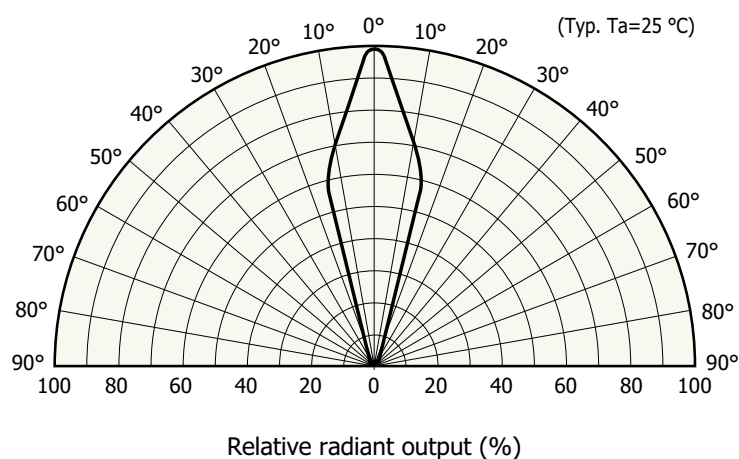
Electrical and optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Peak emission wavelength	λ _p	I _F =200 mA	840	870	900	nm
Forward voltage	V _F	I _F =200 mA	-	1.45	1.7	V
Pulse forward voltage	V _{FP}	I _{FP} =3 A*1	-	2.4	4.5	V
Reverse current	I _R	V _R =5 V	-	-	20	μA
Radiant flux	φ _e	I _F =200 mA	60	80	-	mW
Radiant intensity	I _e	I _F =200 mA	100	150	-	mW/sr
Pulse radiant flux	φ _{ep}	I _{FP} =3 A*1	900	1200	-	mW
Pulse radiant intensity	I _{ep}	I _{FP} =3 A*1	1600	2200	-	mW/sr
Cutoff frequency*2	f _c	I _F =200 mA ± 1 mAp-p	25	40	-	MHz

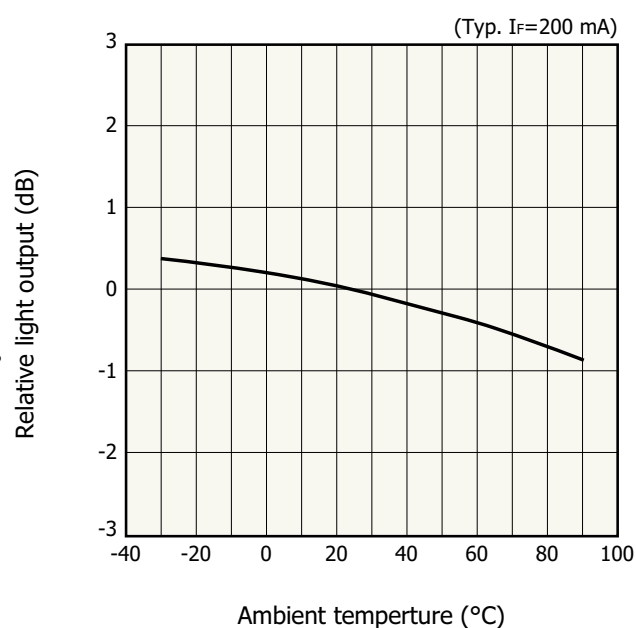
*2: Frequency at which the radiant output drops by 3 dB relative to the output at 100 kHz

Emission spectrum**Forward current vs. forward voltage****Radiant flux vs. forward current****Radiant flux vs. pulse forward current**

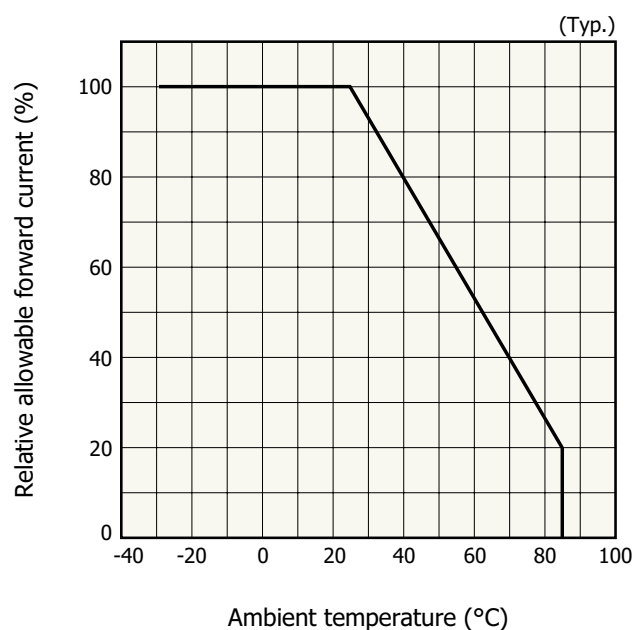
Directivity



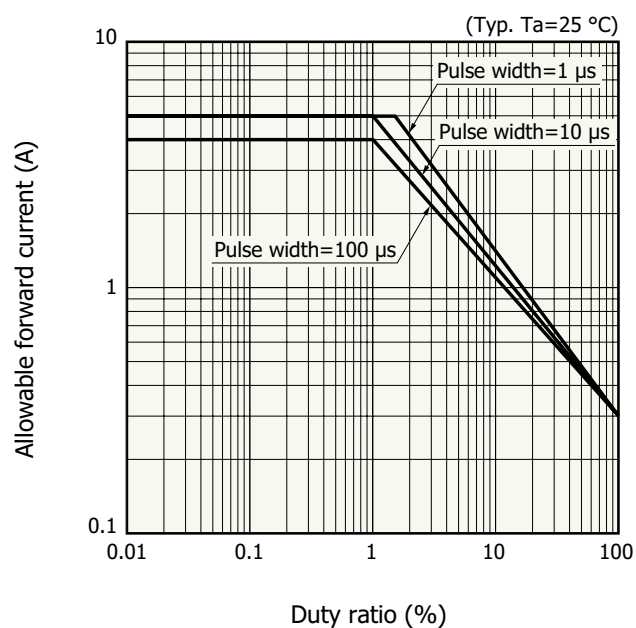
Light output vs. ambient temperature



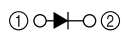
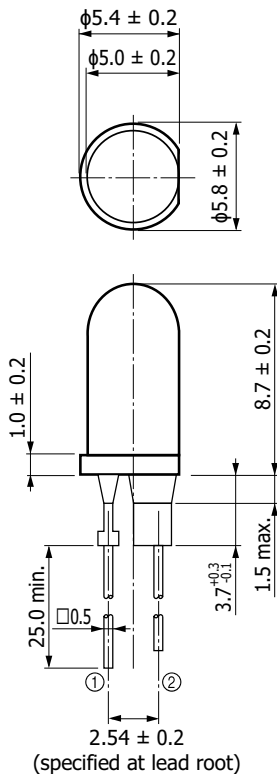
Allowable forward current vs. ambient temperature



Allowable forward current vs. duty ratio



Dimensional outline (unit: mm)



Standard packing state: anti-static bag
(100 pcs/pack)

KLEDA0096EB

Related information

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

■ Precautions

- Disclaimer
- Safety consideration / Opto-semiconductor products
- Precautions / Metal, ceramic, plastic package products
- Precautions / Compound opto-semiconductors (photosensors, light emitters)

■ Catalogs

- Selection guide / LED
- Technical note / LED

Information described in this material is current as of January 2025.

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