

L10843



## High power LED for optical switches

The L10843 is an infrared LED developed for optical switches. Equipped with a high power chip, it provides higher output than the previous product. Further, a reflector-less structure was employed to achieve wide directivity.

### Features

- High light output
- High-speed response
- Wide directivity

### Applications

- Optical switches

### Structure

Parameter	Specification
Package	TO-46
Reflector	None
Window material	Epoxy resin

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

Parameter	Symbol	Condition	Value	Unit
Reverse voltage	VR		5	V
Forward current	IF		100	mA
Forward current decrease rate	-	Ta > 25 °C	1.3	mA/°C
Pulse forward current	IFP	Pulse width=10 μs Duty ratio=1%	1.0	A
Pulse forward current decrease rate	-	Ta > 25 °C	13	mA/°C
Power dissipation	P		180	mW
Operating temperature	Topr	No dew condensation*1	-30 to +85	°C
Storage temperature	Tstg	No dew condensation*1	-40 to +100*2	°C
Soldering conditions	-		260 °C or less, within 5 s, at least 1 mm away from lead roots	-

\*1: When there is a temperature difference between a product and the surrounding area in high humidity environment, dew condensation may occur on the product surface. Dew condensation on the product may cause deterioration in characteristics and reliability.

\*2: The L10843 is guaranteed to resist temperature cycle test of up to 5 cycles.

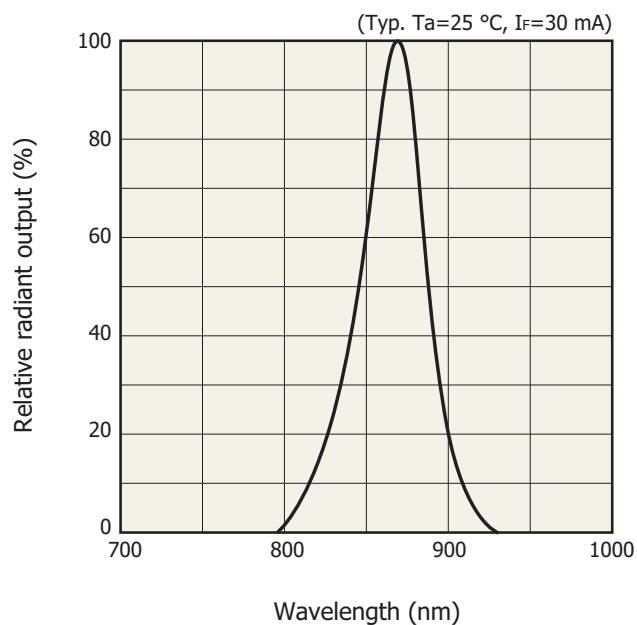
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

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

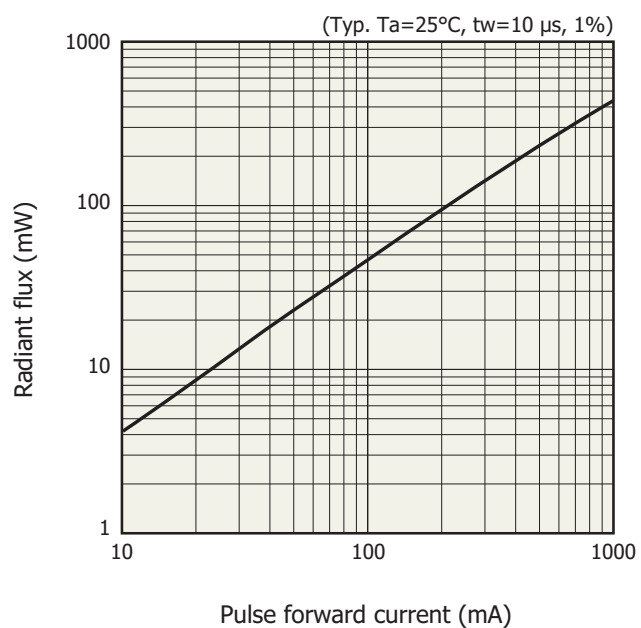
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Peak emission wavelength	$\lambda_p$	IF=50 mA	840	870	900	nm
Spectral half width	$\Delta\lambda$	IF=50 mA	-	45	-	nm
Forward voltage	VF	IF=50 mA	-	1.45	1.65	V
Reverse current	IR	VR=5 V	-	-	5	μA
Radiant flux	$\phi_e$	IF=50 mA	16	23	-	mW
Cutoff frequency*2	fc	IF=50 mA ± 4 mAp-p	30	50	-	MHz

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

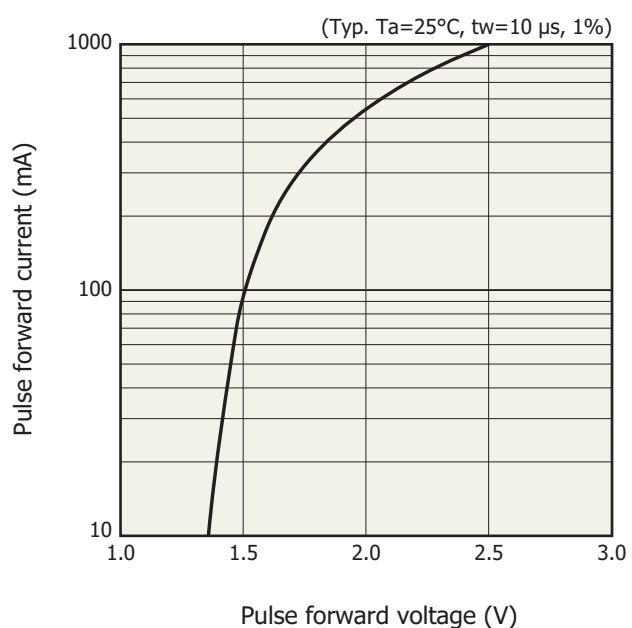
### ✚ Emission spectrum



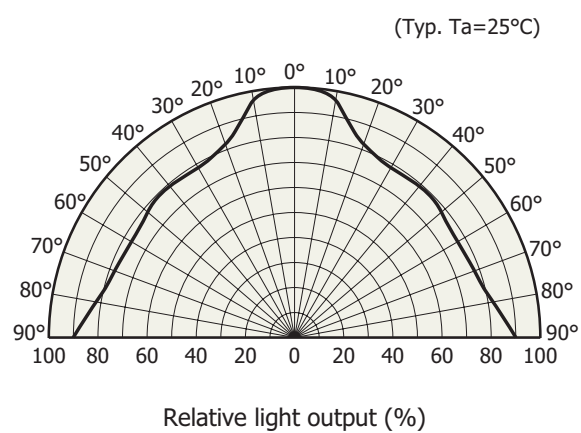
### ✚ Radiant flux vs. pulse forward current



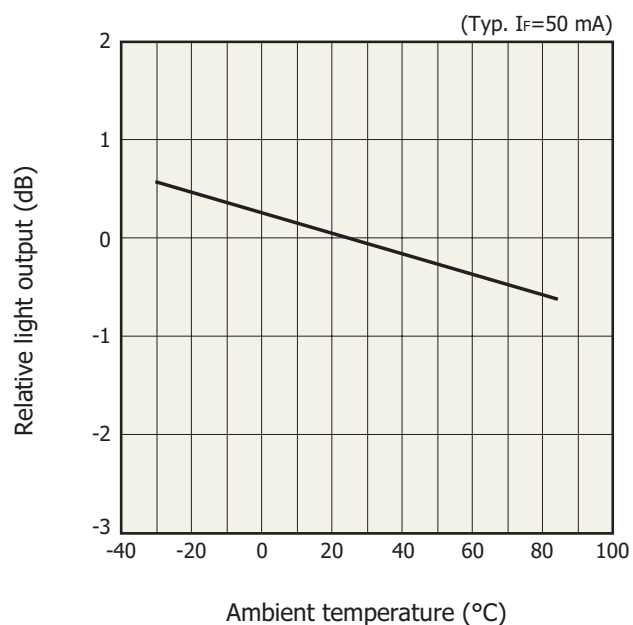
### ✚ Pulse forward current vs. pulse forward voltage



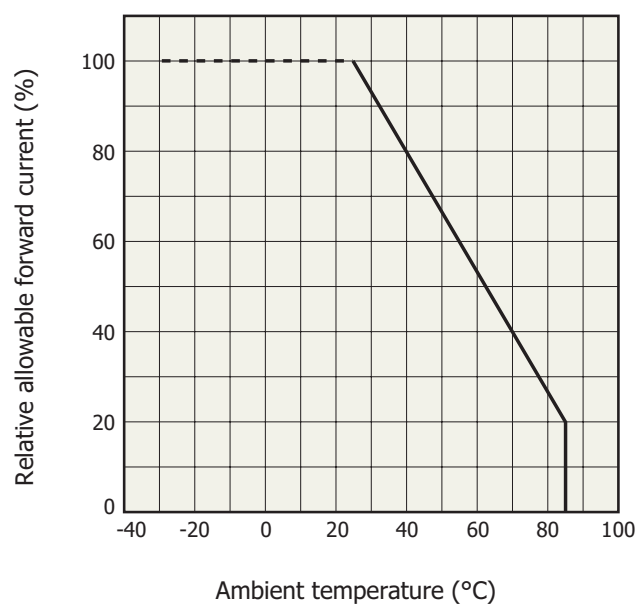
### ✚ Directivity



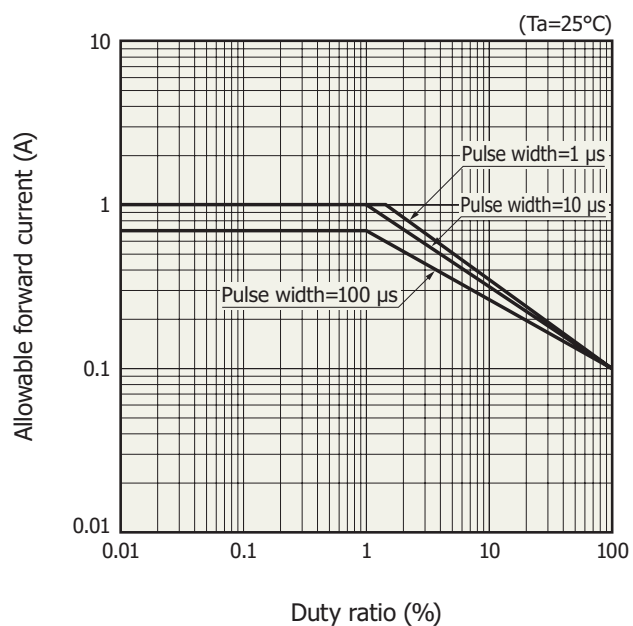
### Light output vs. ambient temperature



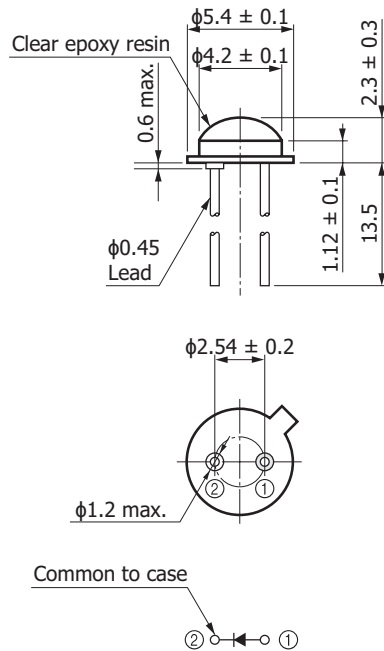
### Allowable forward current vs. ambient temperature



### Allowable forward current vs. duty ratio



### Dimensional outline (unit: mm)



KLEDA0058EB

### Standard packing specifications

- Packing state: Paper box (200 pieces/box)

### Related information

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

- Precautions
  - Disclaimer
  - Safety consideration
  - Compound opto-semiconductors (photosensors, light emitters)
- Technical information
  - LED / Technical note

Information described in this material is current as of May 2022.

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