

L8957



Low cost LED ideal for optical encoders

L8957 is an infrared LED using a low-cost lens and available at a lower price than other products up to now.

Features

- Low price
- Uses low cost lens

Applications

- Optical encoders
- Optical switches

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

Parameter	Symbol	Condition	Value	Unit
Reverse voltage	VR		5	V
Forward current	IF		80	mA
Forward current reduction rate	-		0.67	mA/°C
Pulse forward current	IFP	Pulse width=10 μs Duty ratio=1 %	0.5	A
Pulse forward current reduction rate	-		4.2	mA/°C
Power dissipation	P		150	mW
Operating temperature	Topr		-30 to +85	°C
Storage temperature	Tstg		-40 to +100	°C

Electrical and optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Peak emission wavelength	λ_p	IF=30 mA	840	870	900	nm
Spectral half width	$\Delta\lambda$	IF=30 mA	-	45	-	nm
Optical output *1	Pe	IF=30 mA	1.5	2.1	-	mW
Forward voltage	VF	IF=30 mA	-	1.5	1.65	V
Reverse current	IR	VR=5 V	-	-	5	μA
Spot light size *2	Bw	IF=30 mA	4.8 *3	5.4	-	mm
Cutoff frequency *4	fc	IF=30 mA ± 4 mAp-p	25	40	-	MHz

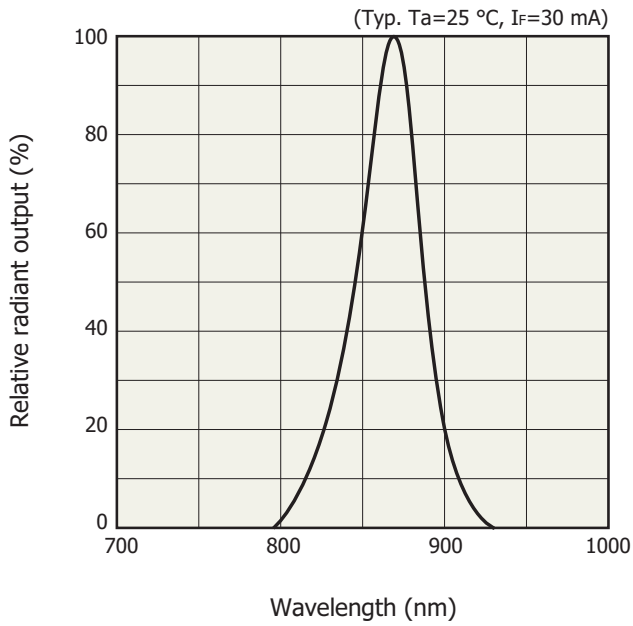
*1: Measured with a photodiode (active area: $\phi 8$ mm) installed 10 mm away from LED stem undersurface.

*2: Full width at half maximum of beam spot measured with an image sensor installed 13 mm away from LED stem undersurface.

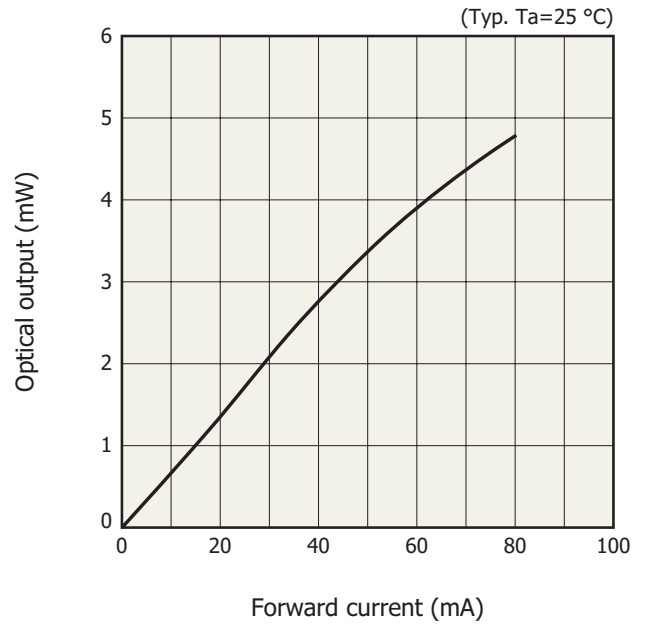
*3: Reference value

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

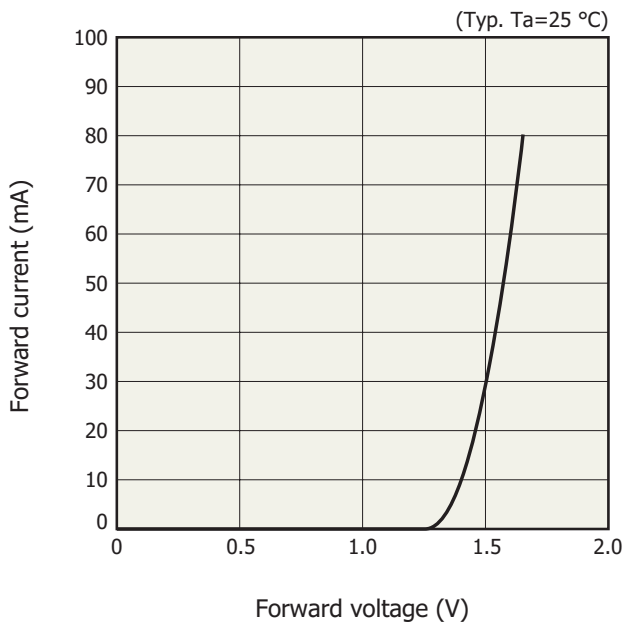
Emission spectrum



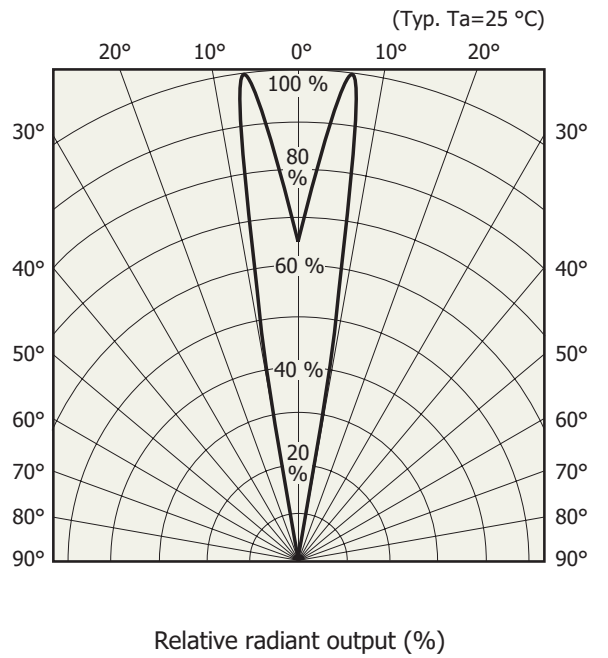
Optical output vs. forward current



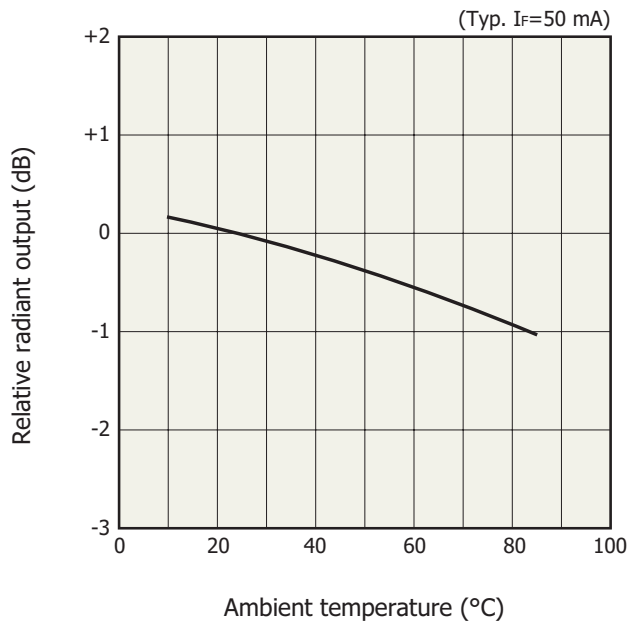
Forward current vs. forward voltage



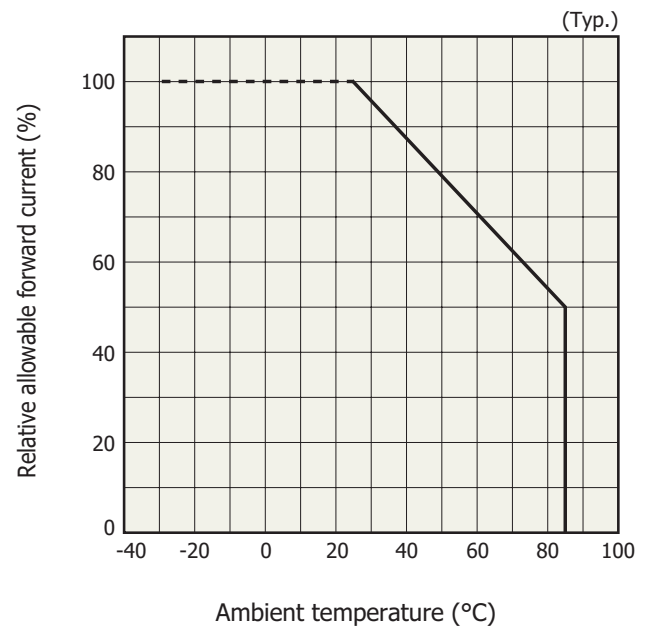
Directivity



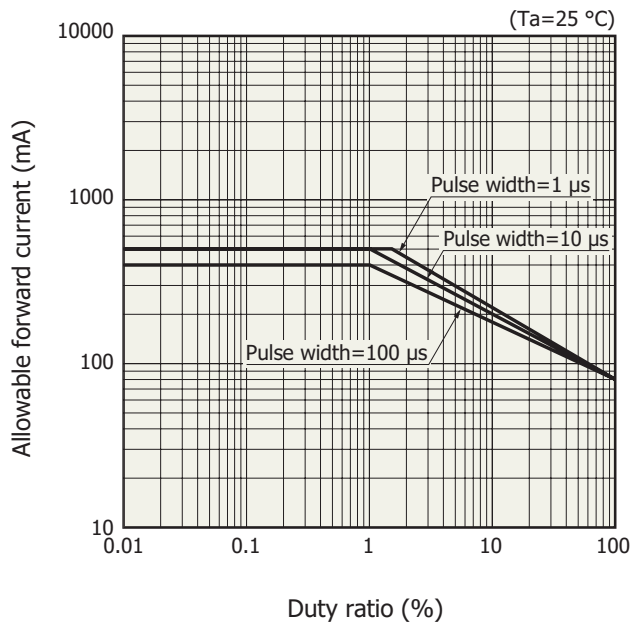
Radiant output vs. ambient temperature



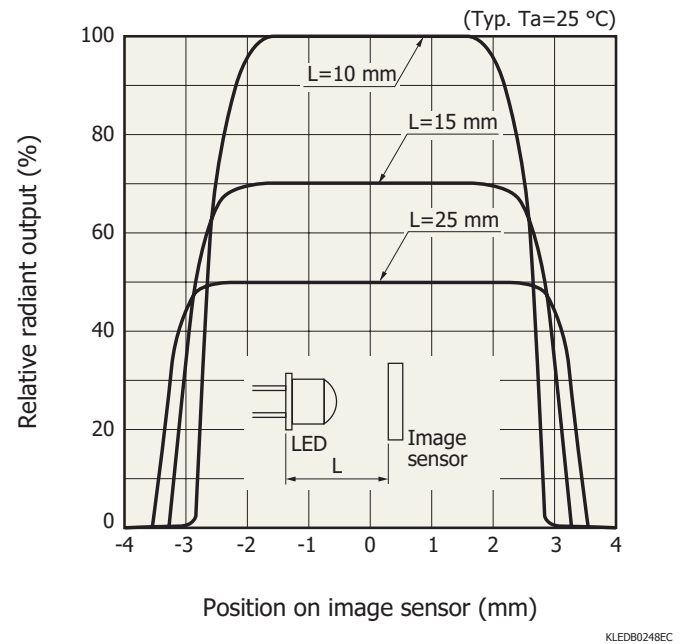
Allowable forward current vs. ambient temperature



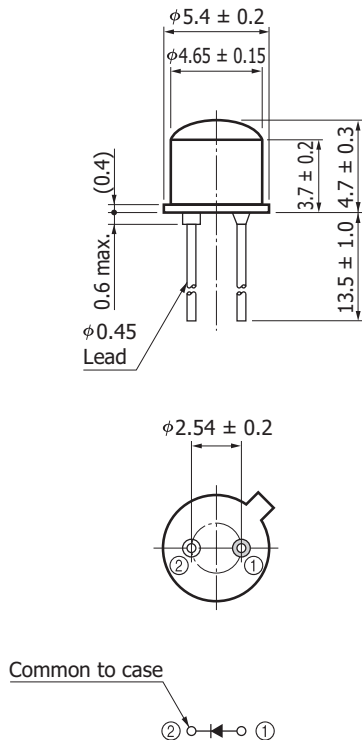
Allowable forward current vs. duty ratio



Light intensity distribution



Dimensional outline (unit: mm)



Related information

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

■ Precautions

- Disclaimer
- Metal, ceramic, plastic packages

■ Technical information

- LED

Information described in this material is current as of September 2017.

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.

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