

L1909

## TO-46 type GaAlAs infrared LED

### Features

- High radiant output power
- Direct modulation possible
- High reliability and long life

### Applications

- Automatic control systems
- Optical switches
- Mark sensors
- Optical remote control

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

Parameter	Symbol	Condition	Value	Unit
Forward current	I <sub>F</sub>		80	mA
Reverse voltage	V <sub>R</sub>		5	V
Pulse forward current	I <sub>FP</sub>	Pulse width=10 μs Duty ratio=1%	1.0	A
Operating temperature	T <sub>opr</sub>		-30 to +85	°C
Storage temperature	T <sub>stg</sub>		-40 to +100*	°C

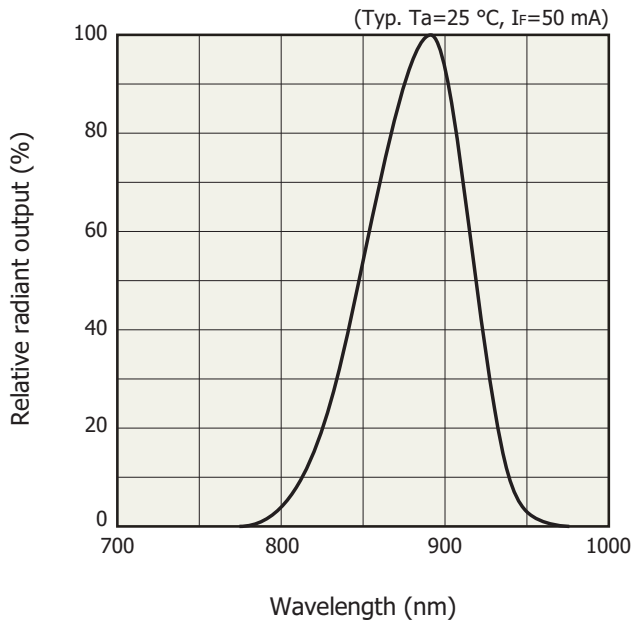
\* Guaranteed to resist temperature cycle test of up to 5 cycles

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.

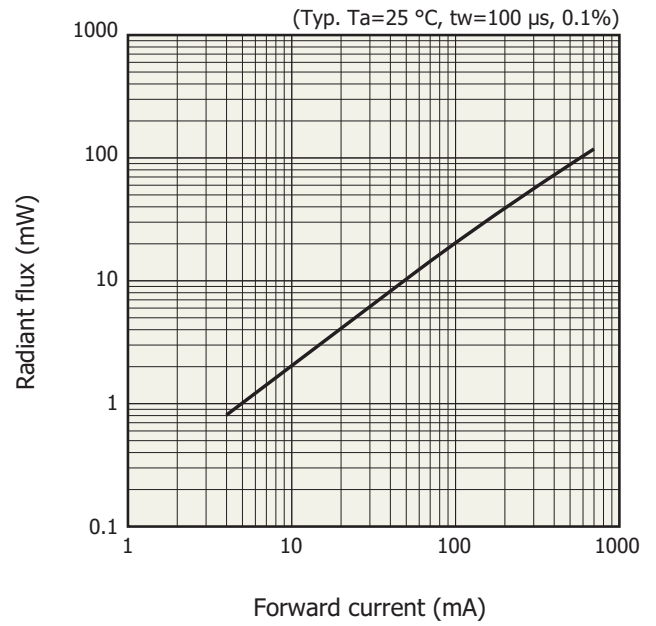
### Electrical and optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Peak emission wavelength	λ <sub>p</sub>	I <sub>F</sub> =50 mA	870	890	920	nm
Spectral half width	Δλ	I <sub>F</sub> =50 mA	-	80	-	nm
Forward voltage	V <sub>F</sub>	I <sub>F</sub> =50 mA	-	1.4	1.5	V
Pulse forward voltage	V <sub>FP</sub>	I <sub>F</sub> =1.0 A	-	2.8	3.4	V
Reverse current	I <sub>R</sub>	V <sub>R</sub> =5 V	-	-	5	μA
Radiant flux	φ <sub>e</sub>	I <sub>F</sub> =50 mA	8	10	-	mW
Radiant illuminance	P <sub>E</sub>	I <sub>F</sub> =50 mA	-	1.0	-	mW/cm <sup>2</sup>
Rise time	t <sub>r</sub>	I <sub>F</sub> =50 mA, 10 to 90%	-	0.45	0.7	μs
Fall time	t <sub>f</sub>	I <sub>F</sub> =50 mA, 90 to 10%	-	0.45	0.7	μs

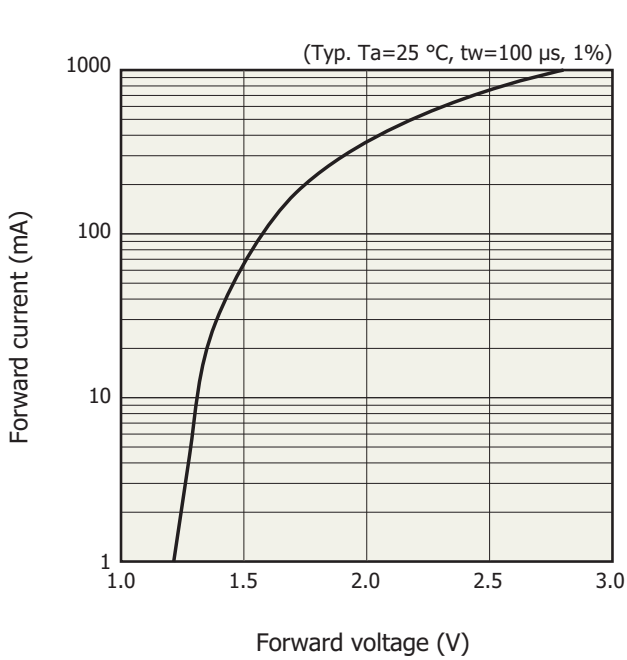
**Emission spectrum**



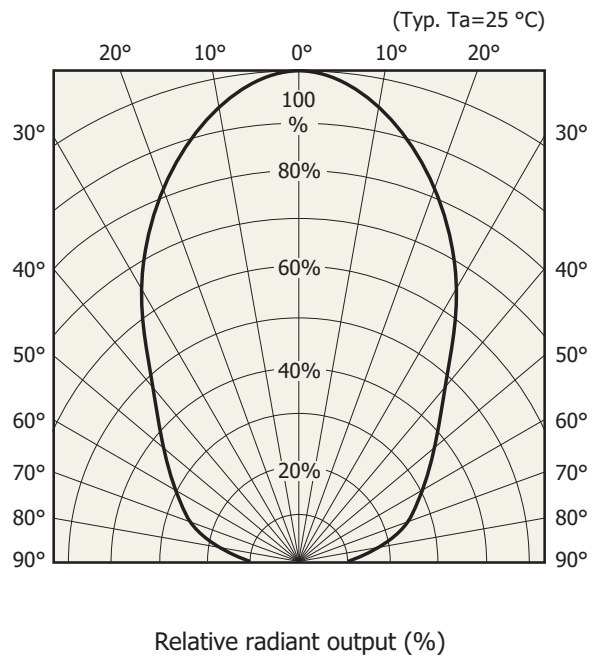
**Radiant flux vs. forward current**



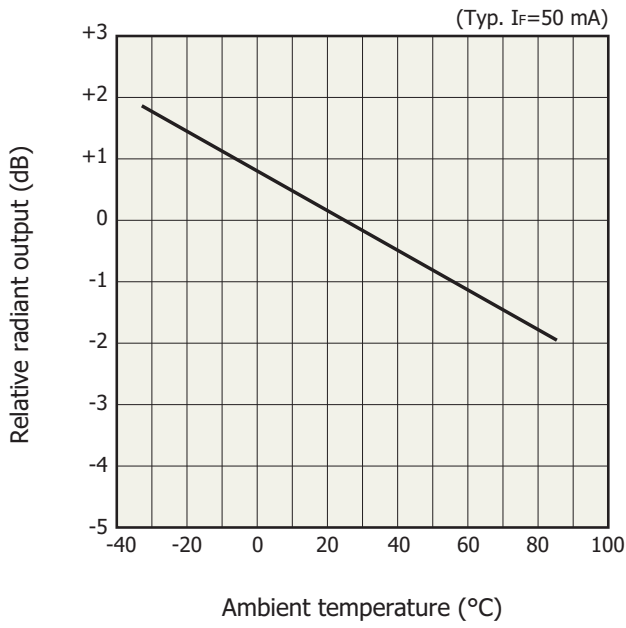
**Forward current vs. forward voltage**



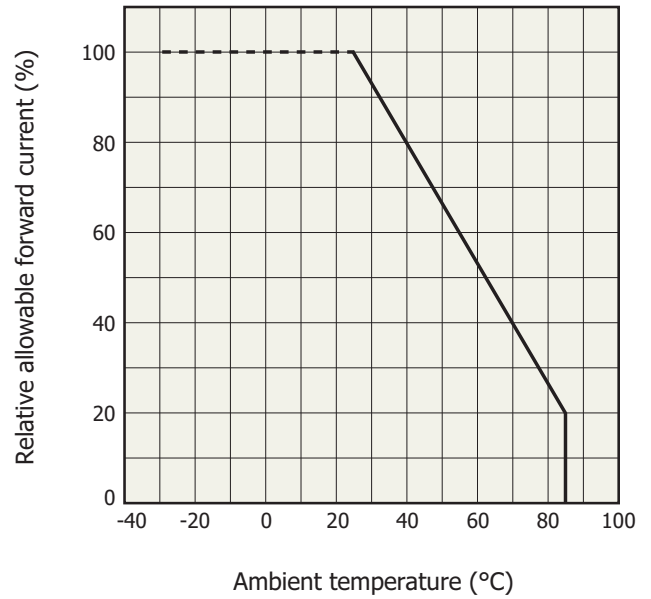
**Directivity**



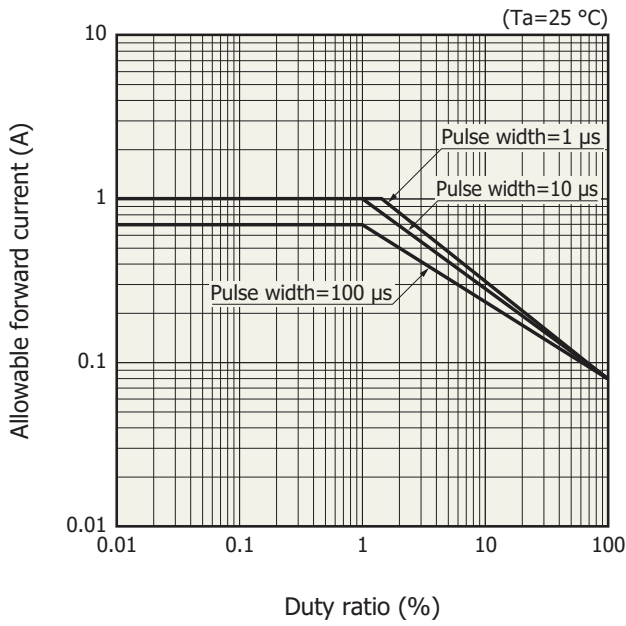
**Radiant output vs. ambient temperature**



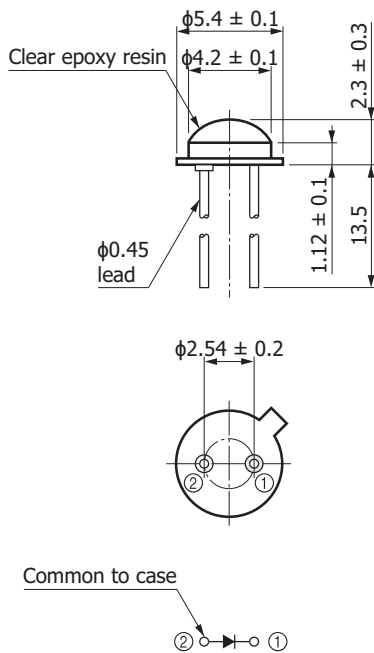
**Allowable forward current vs. ambient temperature**



**Allowable forward current vs. duty ratio**



### Dimensional outline (unit: mm)



KLEDA0009ED

### Related information

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

#### Precautions

- Disclaimer
- Metal, ceramic, plastic products

Information described in this material is current as of November, 2015.

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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