

# Infrared LED

## L4100

Resin-potted metal package LED



### Features

- High reliability
- High output power

### Applications

- Auto focus
- Optical switches
- Auto control equipment

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

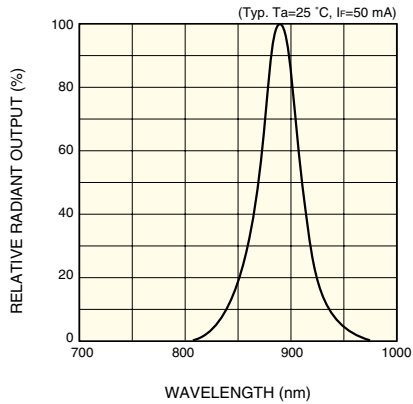
| Parameter             | Symbol           | Condition                           | Value         | Unit |
|-----------------------|------------------|-------------------------------------|---------------|------|
| Forward current       | I <sub>F</sub>   |                                     | 70            | mA   |
| Reverse voltage       | V <sub>R</sub>   |                                     | 5             | V    |
| Pulse forward current | I <sub>FP</sub>  | Pulse width=10 μs<br>Duty ratio=1 % | 0.8           | 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

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

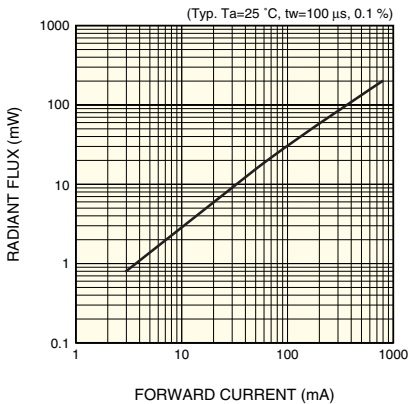
| Parameter                | Symbol          | Condition             | Min. | Typ. | Max. | Unit               |
|--------------------------|-----------------|-----------------------|------|------|------|--------------------|
| Peak emission wavelength | λ <sub>p</sub>  | I <sub>F</sub> =50 mA | 870  | 890  | 920  | nm                 |
| Spectral half width      | Δλ              | I <sub>F</sub> =50 mA | -    | 50   | -    | nm                 |
| Forward voltage          | V <sub>F</sub>  | I <sub>F</sub> =50 mA | -    | 1.45 | 1.60 | V                  |
| Pulse forward voltage    | V <sub>FP</sub> | I <sub>F</sub> =0.8 A | -    | 3    | 3.7  | 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 | 12   | 14   | -    | mW                 |
| Radiant illuminance      | P <sub>E</sub>  | I <sub>F</sub> =50 mA | -    | 1.3  | -    | mW/cm <sup>2</sup> |
| Rise time                | t <sub>r</sub>  | I <sub>F</sub> =50 mA | -    | 0.45 | 0.7  | μs                 |
| Fall time                | t <sub>f</sub>  | I <sub>F</sub> =50 mA | -    | 0.45 | 0.7  | μs                 |

## ■ Emission spectrum



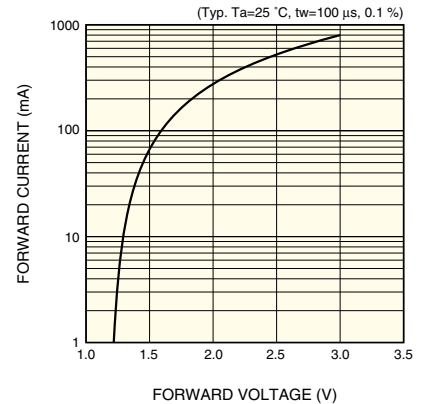
KLEDB0117EB

## ■ Radiant flux vs. forward current



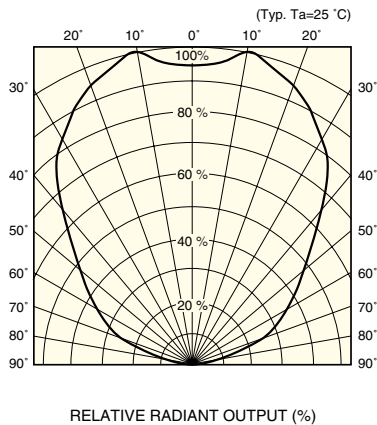
KLEDB0177EA

## ■ Forward current vs. forward voltage



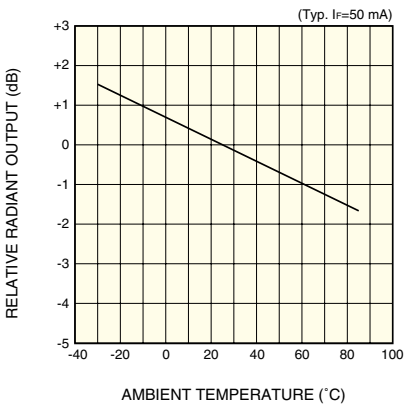
KLEDB0178EA

## ■ Directivity



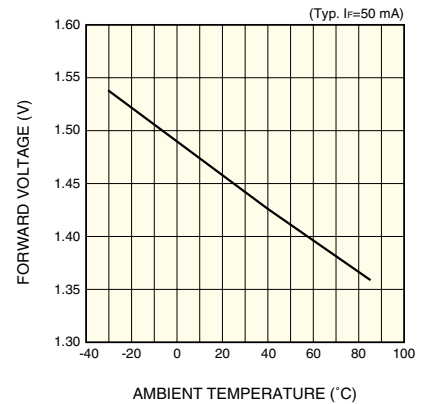
KLEDB0179EA

## ■ Radiant output vs. ambient temperature



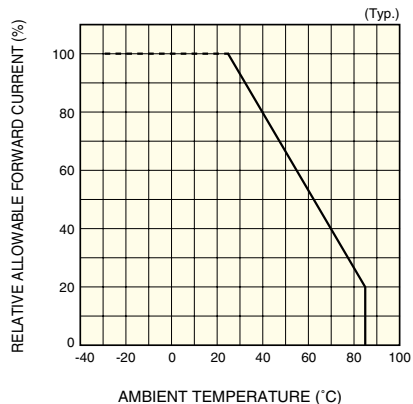
KLEDB0145EA

## ■ Forward voltage vs. ambient temperature



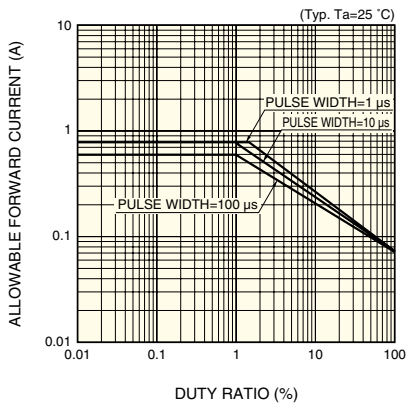
KLEDB0180EA

## ■ Allowable forward current vs. ambient temperature



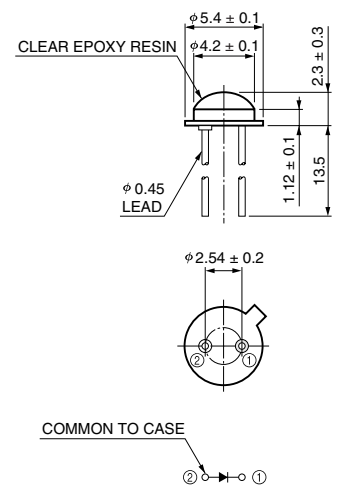
KLEDB0027EB

## ■ Allowable forward current vs. duty ratio



KLEDB0037EB

## ■ Dimensional outline (unit: mm)



KLEDA0009ED

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