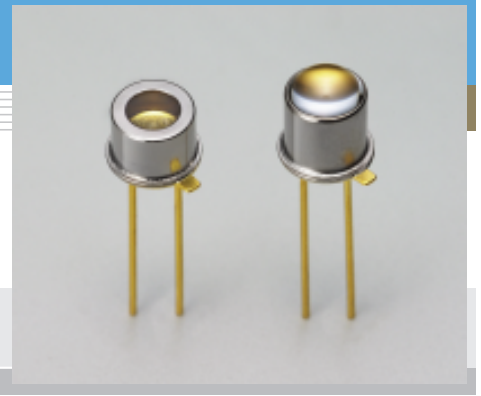


# Infrared LED

## L7850 series

Peak emission wavelength: 1.45  $\mu\text{m}$



L7850 series is a long wavelength LED using an InGaAs chip. Peak emission occurs at 1.45  $\mu\text{m}$ , making L7850 series ideal for detection of water content or moisture. L7850-01 has a glass lens window for narrow directivity (beam spread).

### Features

- Peak emission wavelength: 1.45  $\mu\text{m}$
- High radiant output power
- Narrow directivity (L7850-01)

### Applications

- Light source for moisture meter
- Light source for photosensitive material

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

Parameter	Symbol	Condition	Value	Unit
Reverse voltage	V <sub>R</sub>		1	V
Forward current	I <sub>F</sub>		80	mA
Forward current derating rate	-	T <sub>a</sub> > 25 °C	1.1	mA/°C
Pulse forward current	I <sub>FP</sub>	Pulse width=10 $\mu\text{s}$ Duty ratio=1 %	1.0	A
Pulse forward current derating rate	-	T <sub>a</sub> > 25 °C	13	mA/°C
Power dissipation	P		150	mW
Operating temperature	T <sub>opr</sub>		-30 to +85	°C
Storage temperature	T <sub>stg</sub>		-40 to +100 *1	°C

\*1: L7850 series is guaranteed to resist temperature cycle test of up to 5 cycles.

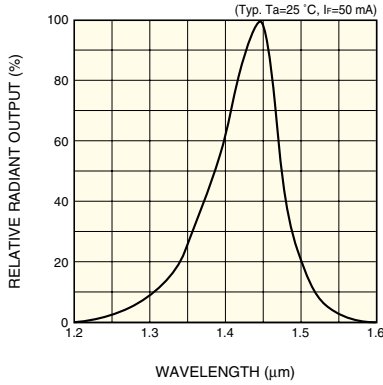
#### ■ Electrical and optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	L7850/-01			Unit
			Min.	Typ.	Max.	
Peak emission wavelength	$\lambda_p$	I <sub>F</sub> =50 mA	1.4	1.45	1.5	$\mu\text{m}$
Spectral half width (FWHM)	$\Delta\lambda$	I <sub>F</sub> =50 mA	-	100	150	nm
Radiant flux	$\phi_e$	I <sub>F</sub> =50 mA	0.7	1.0	-	mW
Forward voltage	V <sub>F</sub>	I <sub>F</sub> =50 mA	-	1.0	1.5	V
Pulse forward voltage	V <sub>FP</sub>	I <sub>F</sub> =1 A	-	2	3	V
Reverse current	I <sub>R</sub>	V <sub>R</sub> =1 V	-	-	10	$\mu\text{A}$
Cut-off frequency *2	f <sub>c</sub>	I <sub>F</sub> =50 mA $\pm$ 10 mAp-p	1	3	-	MHz

\*2: Frequency at which the light output drops by -3 dB based on light output at 100 kHz.

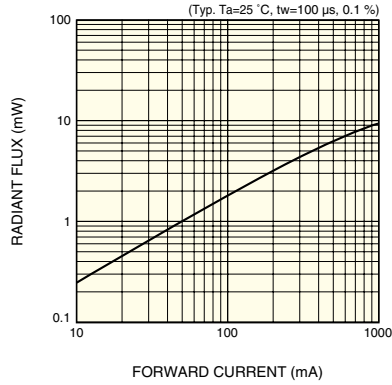
L7850 series may be damaged or performance may deteriorate due to static electricity, so use caution when handling.

## Emission spectrum



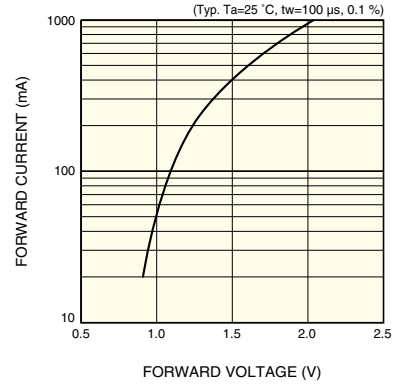
KLEDB0233EA

## Radiant flux vs. forward current



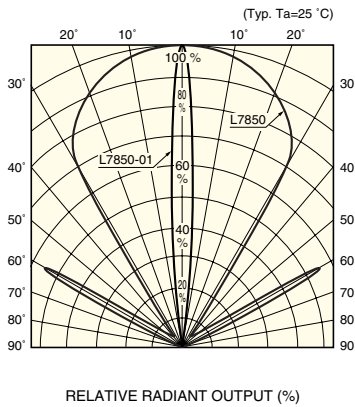
KLEDB0234EA

## Forward current vs. forward voltage



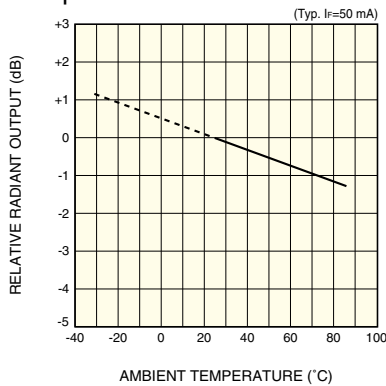
KLEDB0235EA

## Directivity



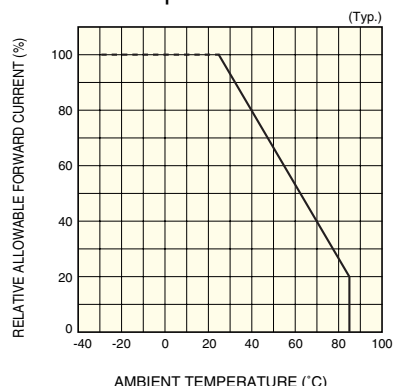
KLEDB0236EA

## Radiant output vs. ambient temperature



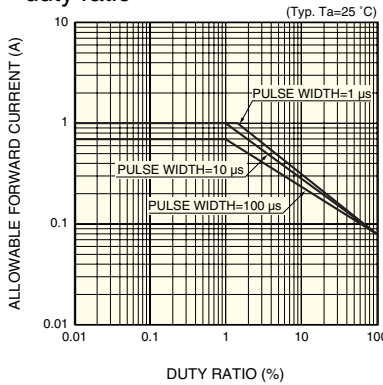
KLEDB0237EA

## Allowable forward current vs. ambient temperature



KLEDB0027EB

## Allowable forward current vs. duty ratio



KLEDB0225EA

## Dimensional outlines (unit: mm)

