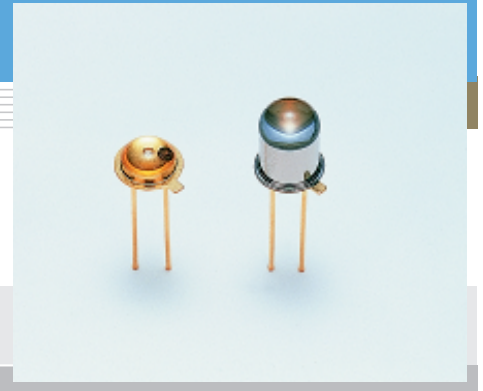


# Infrared LED

## L7558 series

High-speed, high-power infrared LED for spatial light transmission



L7558 series infrared LEDs were developed for spatial light transmission of high-density information such as image data signals, and operate at high speeds of 50 MHz.

L7558 delivers high output of 14 mW and is used in combination with a light projection lens that matches the application. L7558-01 is sealed in a metal package capped with a glass lens that ensures narrow directivity of  $\pm 7^\circ$  (full angle at half maximum). Metal stem package gives L7558 and L7558-01 higher reliability than plastic package devices.

### Features

- High-speed response: 50 MHz Typ. ( $I_F=50$  mA)
- High radiant output power  
L7558 : 14 mW Typ. ( $I_F=50$  mA)  
L7558-01: 7 mW Typ. ( $I_F=50$  mA)
- High reliability

### Applications

- Spatial light transmission

#### ■ Absolute maximum ratings ( $T_a=25^\circ\text{C}$ )

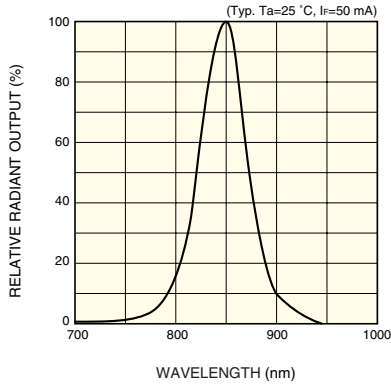
Parameter	Symbol	Condition	Value	Unit
Forward current	$I_F$		100	mA
Reverse voltage	$V_R$		5	V
Pulse forward current	$I_{FP}$	Pulse width =10 $\mu\text{s}$ Duty ratio =1 %	1.0	A
Operating temperature	$T_{opr}$		-30 to +85	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-40 to +100 *	$^\circ\text{C}$

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

#### ■ Electrical and optical characteristics ( $T_a=25^\circ\text{C}$ )

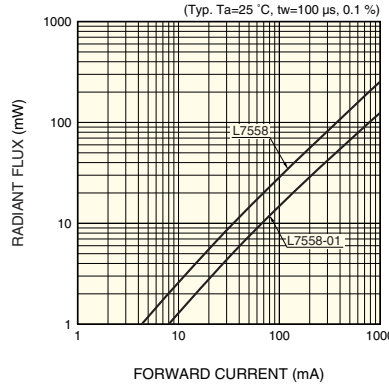
Parameter	Symbol	Condition	L7558			L7558-01			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Peak emission wavelength	$\lambda_p$	$I_F=50$ mA	820	850	880	820	850	880	nm
Spectral half width	$\Delta\lambda$	$I_F=50$ mA	-	50	-	-	50	-	nm
Forward voltage	$V_F$	$I_F=50$ mA	-	1.45	1.60	-	1.45	1.60	V
Pulse forward voltage	$V_{FP}$	$I_F=1$ A	-	3.4	4.3	-	3.4	4.3	V
Reverse current	$I_R$	$V_R=5$ V	-	-	10	-	-	10	$\mu\text{A}$
Radiant flux	$\phi_e$	$I_F=50$ mA	11	14	-	5.5	7.0	-	mW
Radiant illuminance	$P_E$	$I_F=50$ mA	-	1.5	-	-	4.0	-	$\text{mW}/\text{cm}^2$
Cut-off frequency	$f_c$	$I_F=50$ mA $\pm 1$ mA p-p	35	50	-	35	50	-	MHz

## Emission spectrum



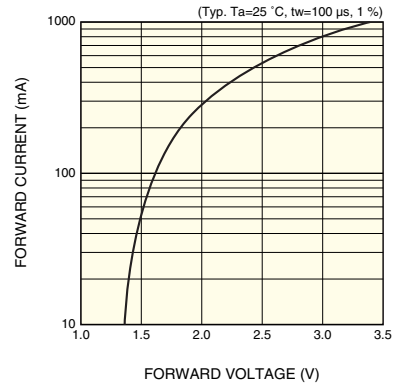
KLEDB0153EA

## Radiant flux vs. forward current



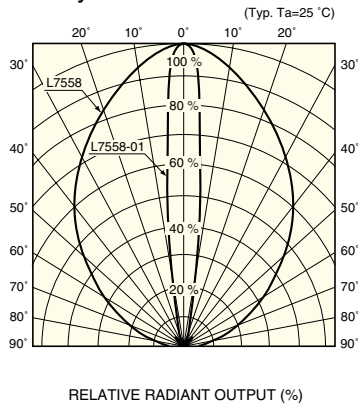
KLEDB0154EA

## Forward current vs. forward voltage



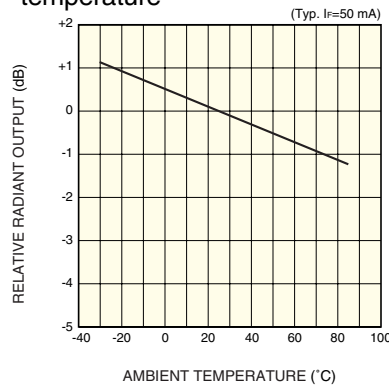
KLEDB0155EA

## Directivity



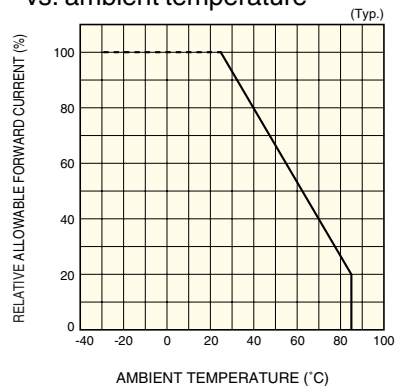
KLEDB0066EA

## Radiant output vs. ambient temperature



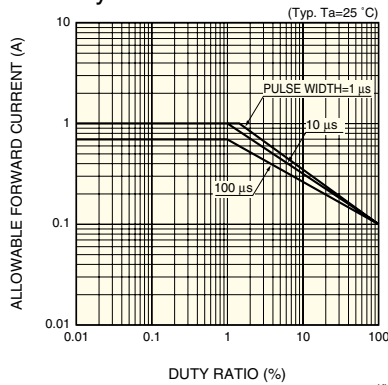
KLEDB0156EA

## Allowable forward current vs. ambient temperature



KLEDB0027EB

## Allowable forward current vs. duty ratio



KLEDB0157EA

## Dimensional outlines (unit: mm)

