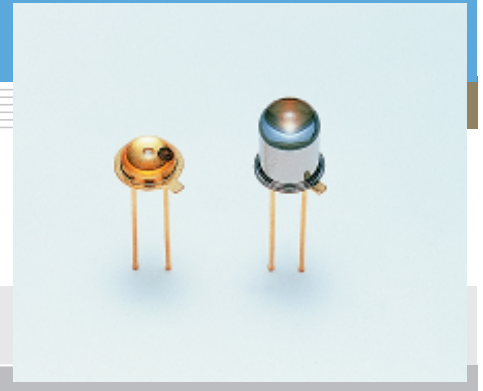


Infrared LED

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 ($T_a=25^\circ\text{C}$)

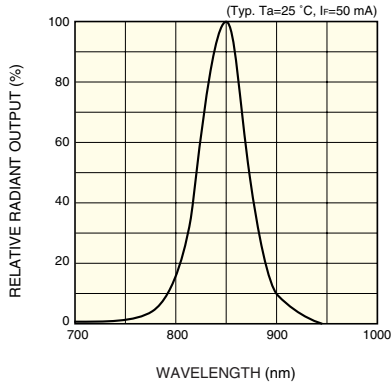
Parameter	Symbol	Condition	Value	Unit
Forward current	I_F		100	mA
Reverse voltage	V_R		5	V
Pulse forward current	I_{FP}	Pulse width =10 μs Duty ratio =1 %	1.0	A
Operating temperature	T_{opr}		-30 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}		-40 to +100 *	$^\circ\text{C}$

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

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

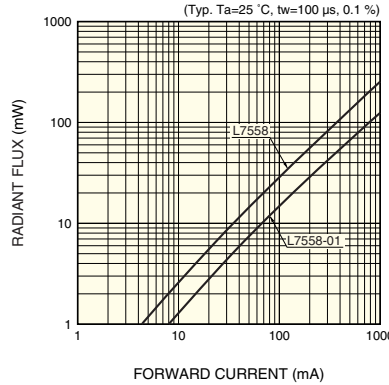
Parameter	Symbol	Condition	L7558			L7558-01			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Peak emission wavelength	λ_p	$I_F=50$ mA	820	850	880	820	850	880	nm
Spectral half width	$\Delta\lambda$	$I_F=50$ mA	-	50	-	-	50	-	nm
Forward voltage	V_F	$I_F=50$ mA	-	1.45	1.60	-	1.45	1.60	V
Pulse forward voltage	V_{FP}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

Emission spectrum



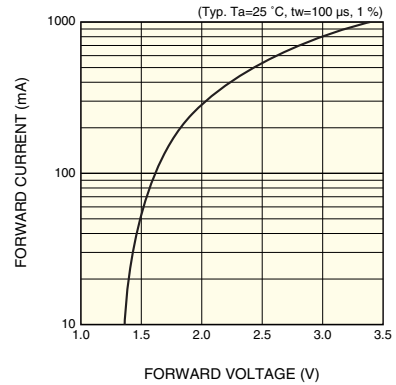
KLEDB0153EA

Radiant flux vs. forward current



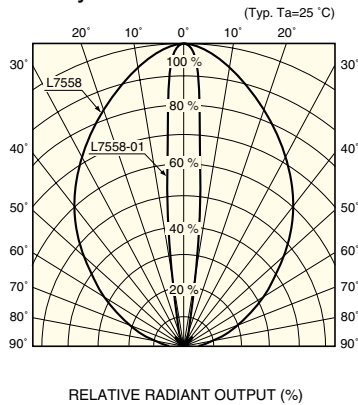
KLEDB0154EA

Forward current vs. forward voltage



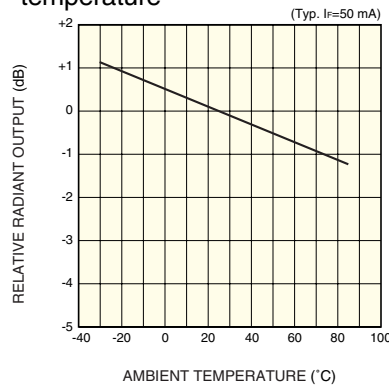
KLEDB0155EA

Directivity



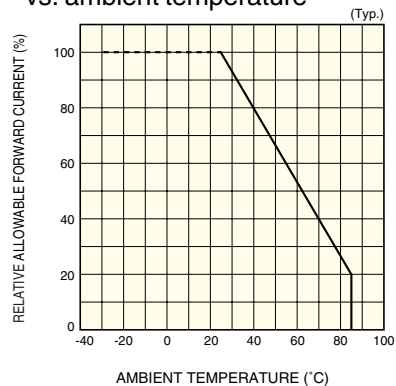
KLEDB0066EA

Radiant output vs. ambient temperature



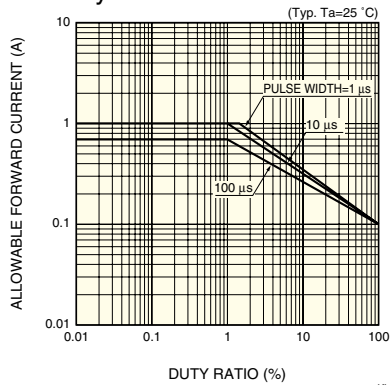
KLEDB0156EA

Allowable forward current vs. ambient temperature



KLEDB0027EB

Allowable forward current vs. duty ratio



KLEDB0157EA

Dimensional outlines (unit: mm)

