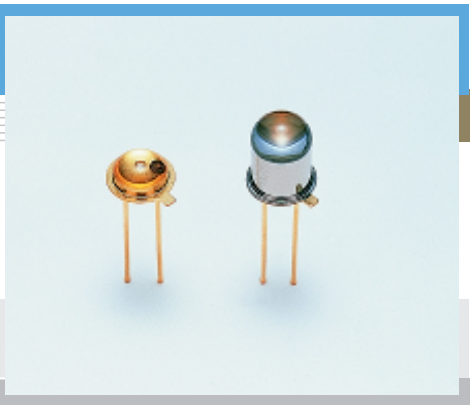
Infrared LED
L7558 series

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 ±7°(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 (Ta=25 °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	Topr		-30 to +85	°C
Storage temperature	Tstg		-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	L7558			L7558-01			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Peak emission wavelength	λp	I_F=50 mA	820	850	880	820	850	880	nm
Spectral half width	Δλ	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	φe	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	fc	I_F=50 mA ± 1mAp-p	35	50	-	35	50	-	MHz

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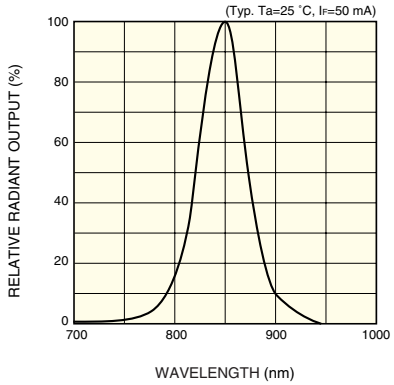
■ Emission spectrum



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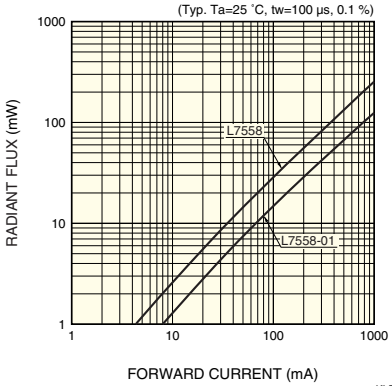
■ Radiant flux vs. forward current



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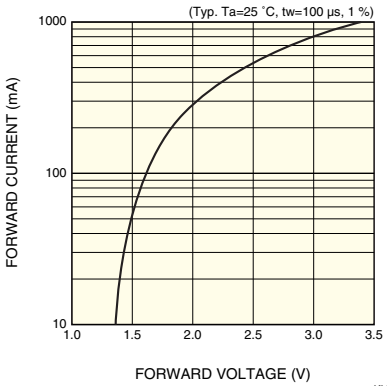
■ Forward current vs. forward voltage



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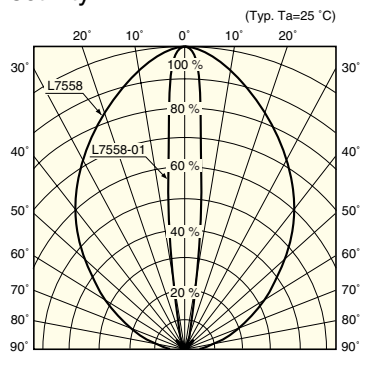
■ Directivity



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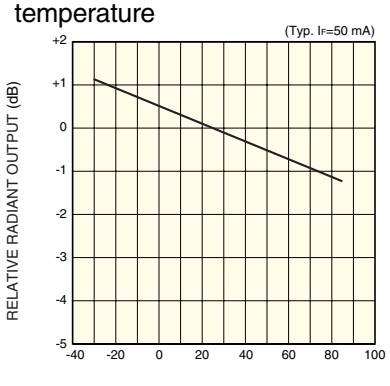
■ Radiant output vs. ambient temperature



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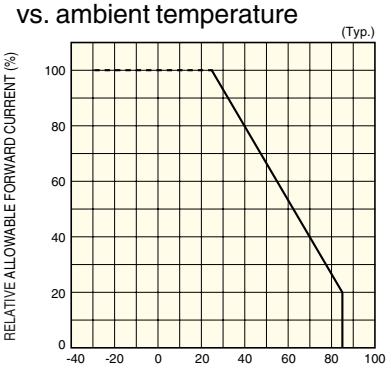
■ Allowable forward current vs. ambient temperature



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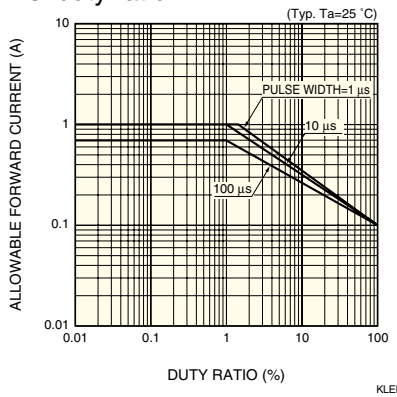
■ Allowable forward current vs. duty ratio



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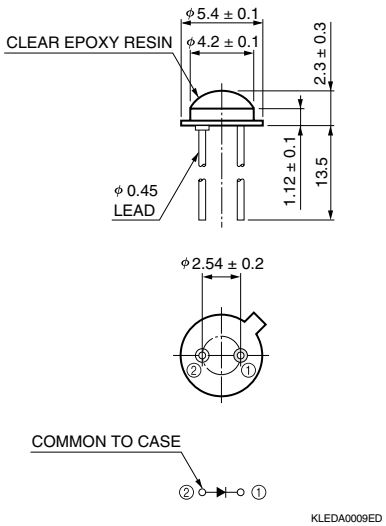
■ Dimensional outlines (unit: mm)

L7558



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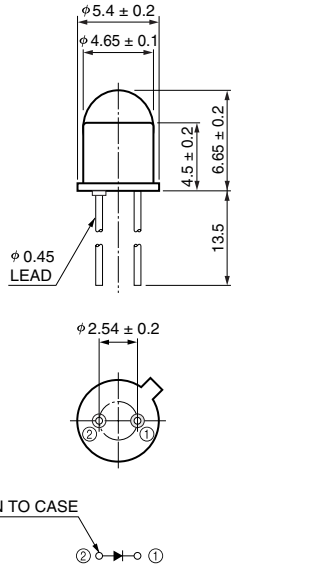
L7558-01



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