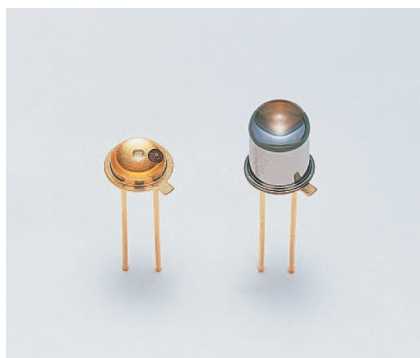


L7558 series



High-speed, high-power infrared LED for free space optics

The L7558 series LEDs were developed for free space optical communications such as image data signal transmission, and operate at high speeds of 50 MHz.

The L7558 delivers a high output of 14 mW and is used in combination with a light projection lens. The L7558-01 is sealed in a metal package capped with a glass lens that produces an angle of view of $\pm 7^\circ$ (full angle at half maximum).

Both types employ a metal stem package that gives 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

- FSO (free space optics)

Absolute maximum ratings ($T_a=25$ °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 μ s Duty ratio=1%	1.0	A
Operating temperature	T_{opr}		-30 to +85	°C
Storage temperature	T_{stg}		-40 to +100 *	°C

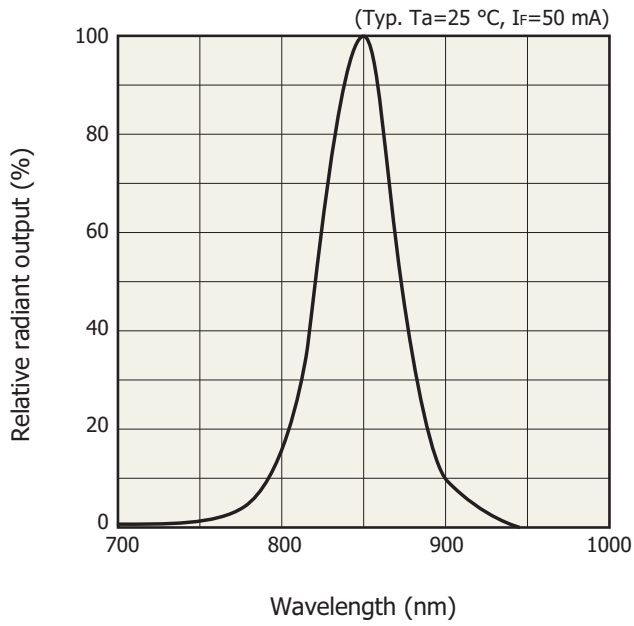
* Guaranteed to resist temperature cycle test of up to 5 cycles.

Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

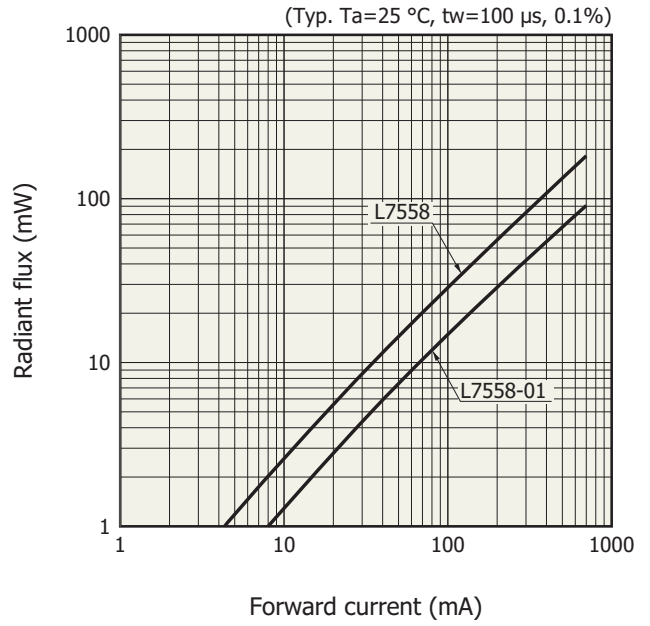
Electrical and optical characteristics ($T_a=25$ °C)

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	μ A
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 1mAp-p	35	50	-	35	50	-	MHz

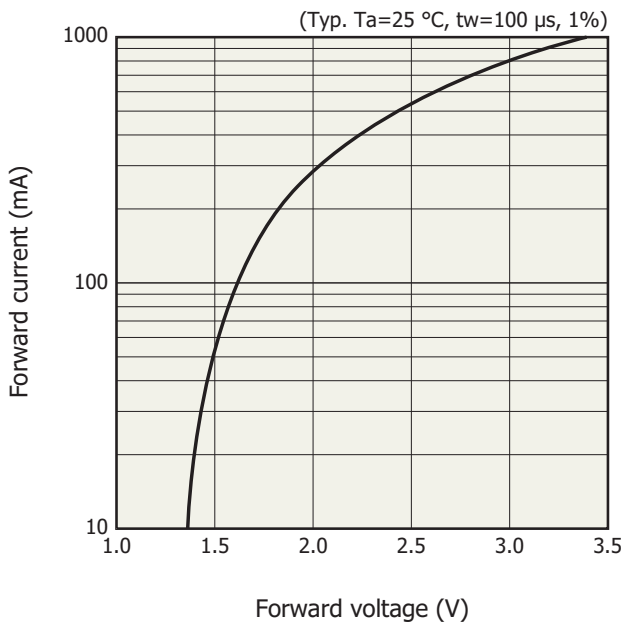
Emission spectrum



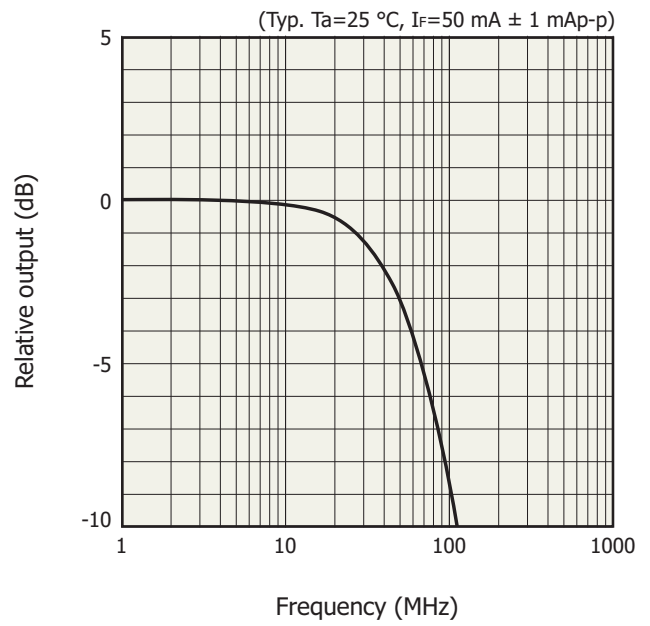
Radiant flux vs. forward current



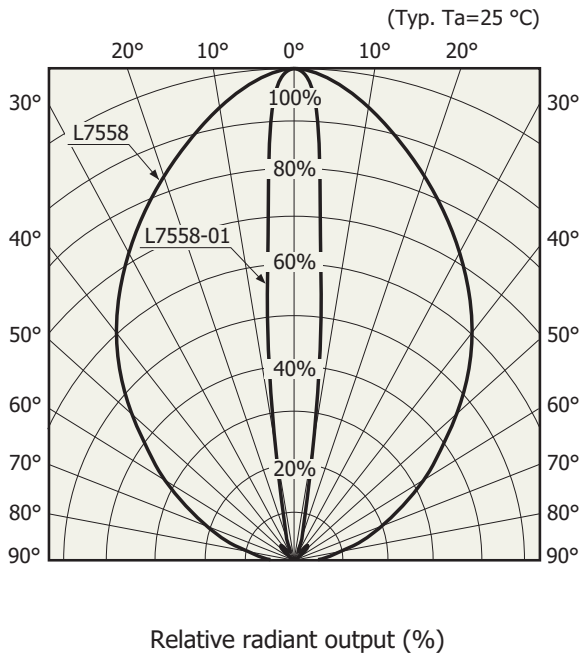
Forward current vs. forward voltage



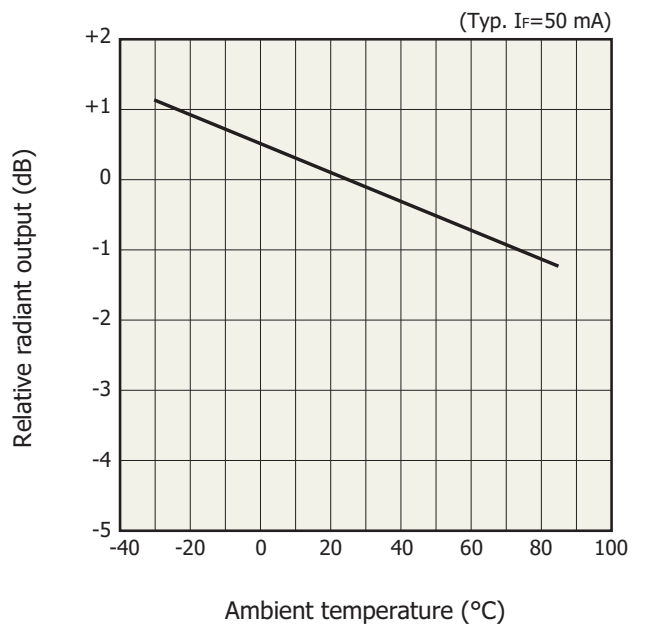
Frequency characteristics



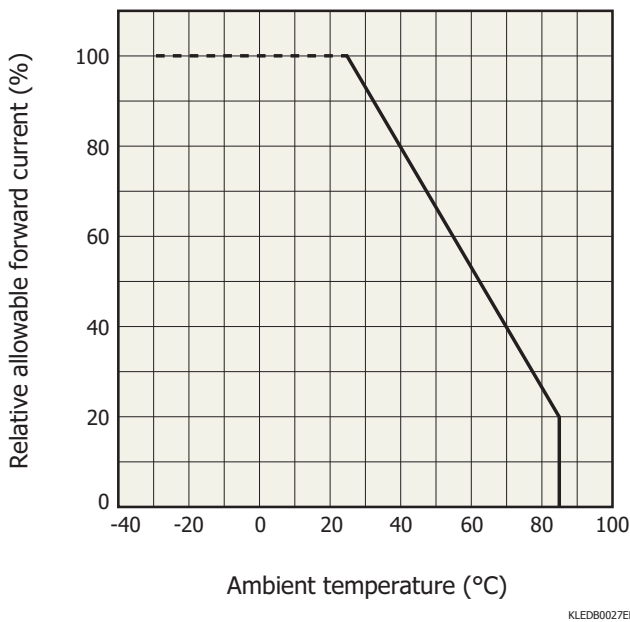
Directivity



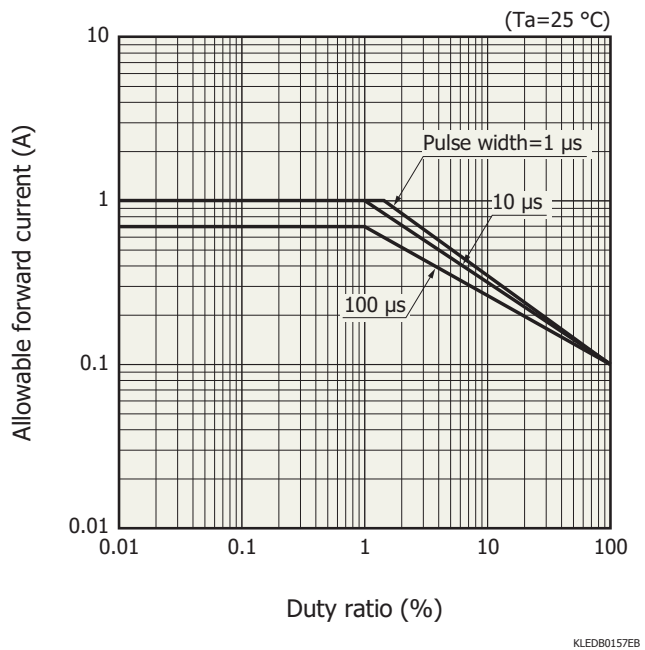
Radiant output vs. ambient temperature



Allowable forward current vs. ambient temperature

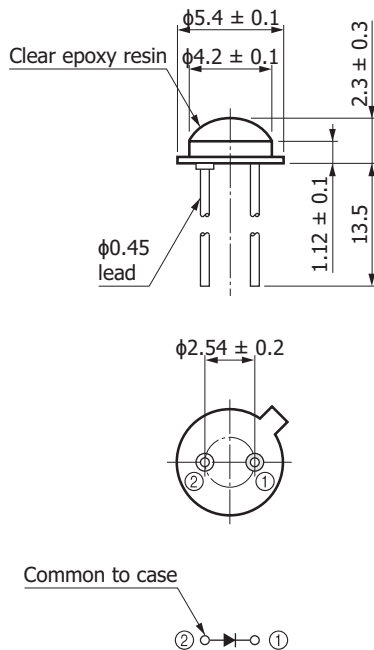


Allowable forward current vs. duty ratio



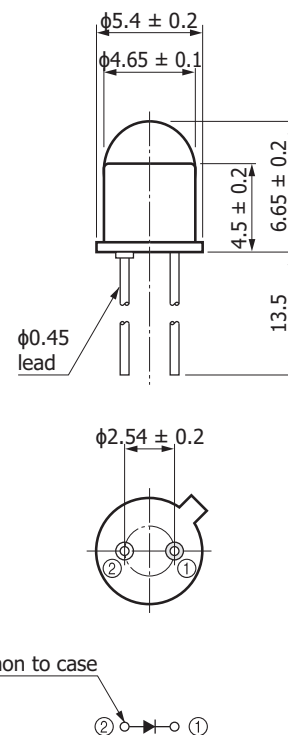
Dimensional outlines (unit: mm)

L7558



KLEDA0009ED

L7558-01



KLEDA0052EB

Related information

www.hamamatsu.com/sp/ssd/doc_en.html

Precautions

- Disclaimer
- Metal, ceramic, plastic products

Information described in this material is current as of November, 2015.

Product specifications are subject to change without prior notice due to improvements or other reasons. This document has been carefully prepared and the information contained is believed to be accurate. In rare cases, however, there may be inaccuracies such as text errors. Before using these products, always contact us for the delivery specification sheet to check the latest specifications.

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