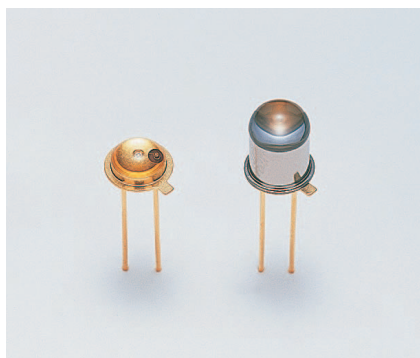


## L7558 series



### 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 $\mu$ s Duty ratio=1%	1.0	A
Operating temperature	$T_{opr}$		-30 to +85	°C
Storage temperature	$T_{stg}$		-40 to +100 *	°C

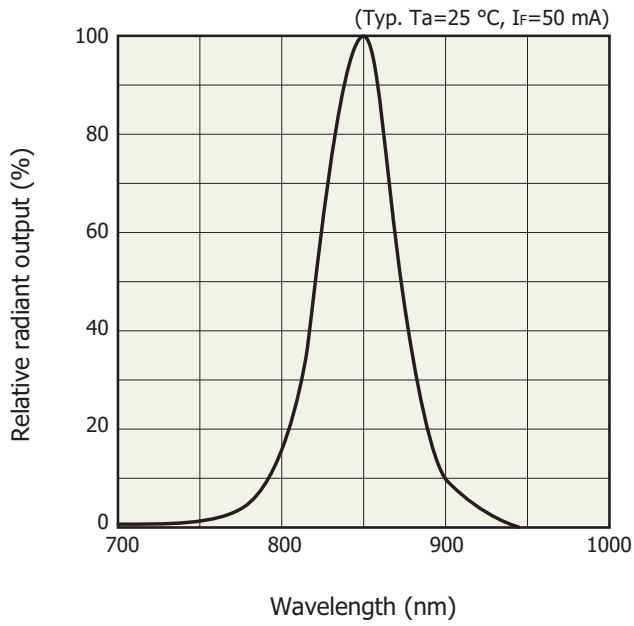
\* Guaranteed to resist temperature cycle test of up to 5 cycles.

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.

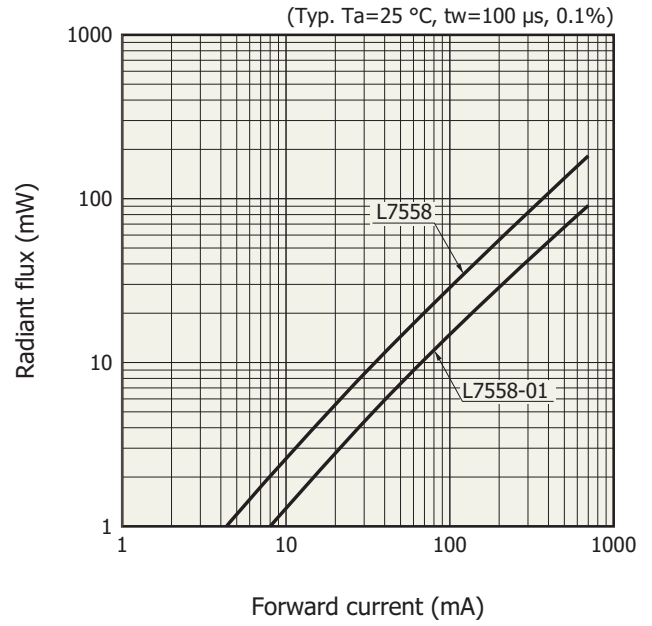
#### Electrical and optical characteristics ( $T_a=25$ °C)

Parameter	Symbol	Condition	L7558			L7558-01			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Peak emission wavelength	$\lambda_p$	$I_F=50$ 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	$\mu$ 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	-	mW/cm <sup>2</sup>
Cut-off frequency	$f_c$	$I_F=50$ mA $\pm$ 1mAp-p	35	50	-	35	50	-	MHz

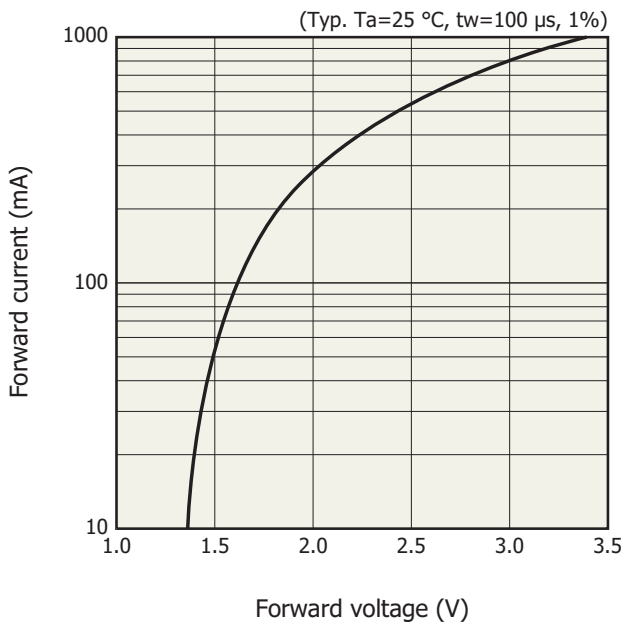
**Emission spectrum**



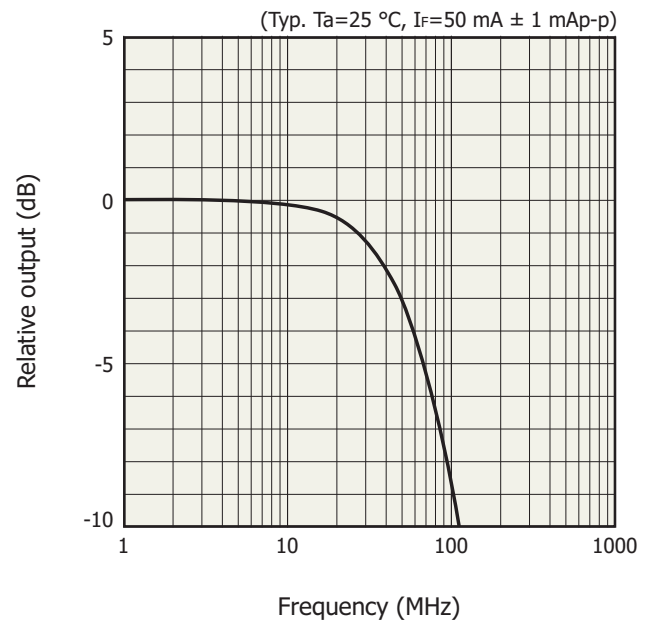
**Radiant flux vs. forward current**



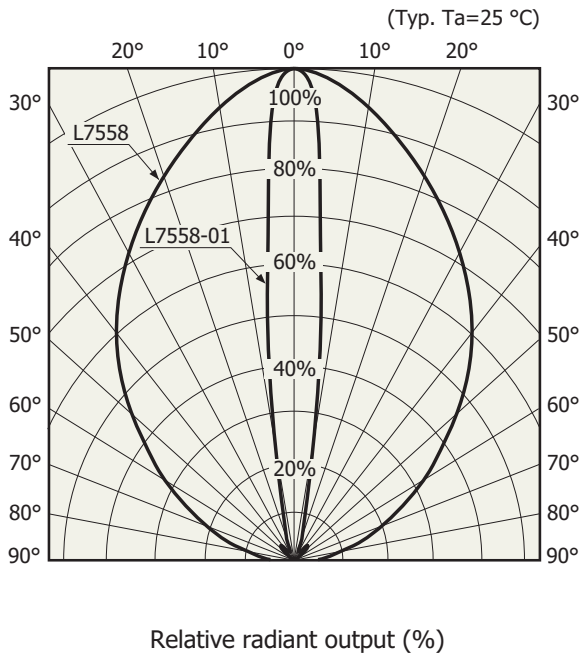
**Forward current vs. forward voltage**



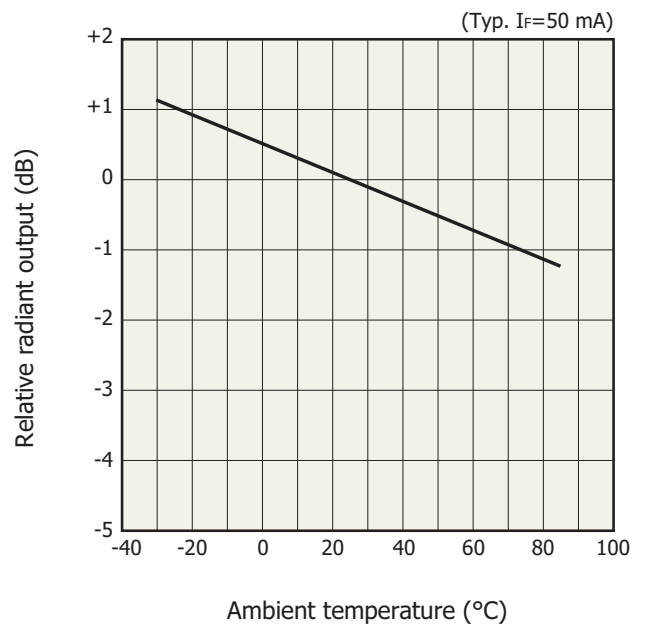
**Frequency characteristics**



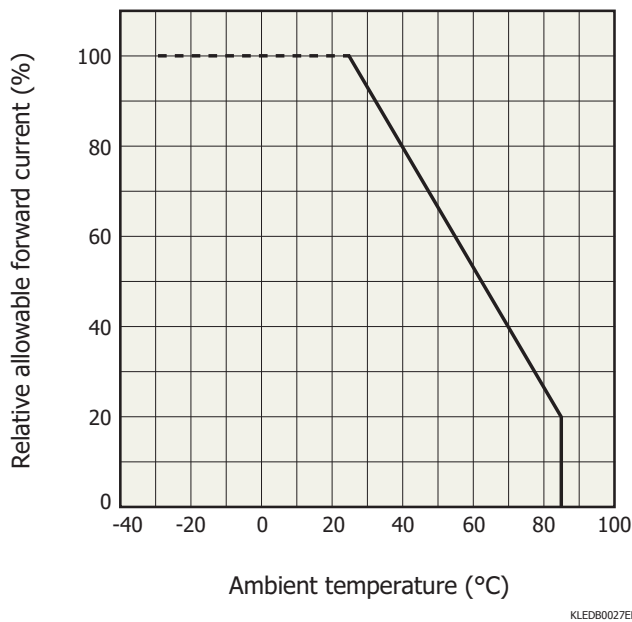
**Directivity**



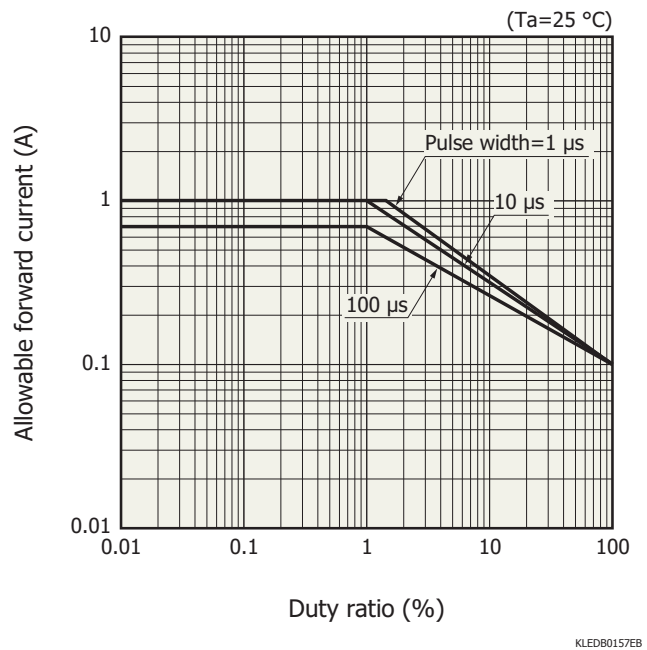
**Radiant output vs. ambient temperature**



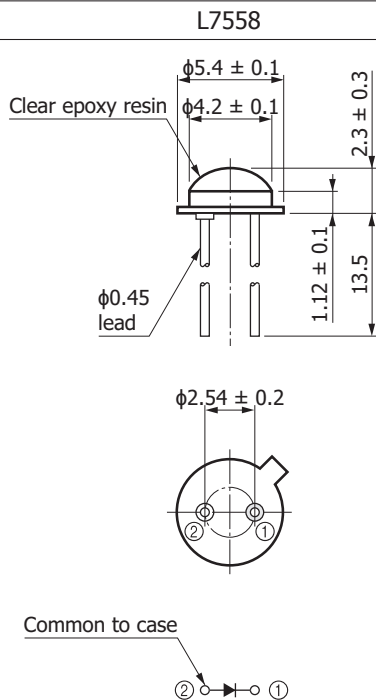
**Allowable forward current vs. ambient temperature**



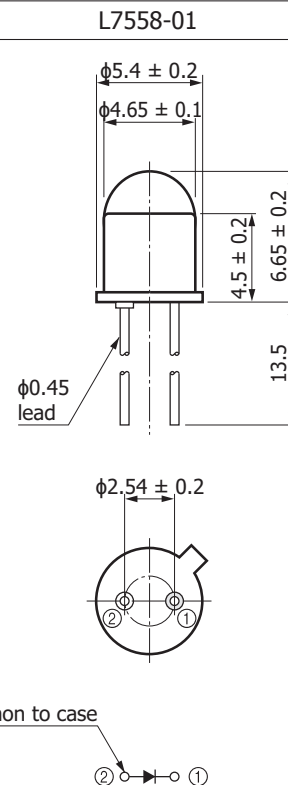
**Allowable forward current vs. duty ratio**



### Dimensional outlines (unit: mm)



KLEDA0009ED



KLEDA0052EB

### Related information

[www.hamamatsu.com/sp/ssd/doc\\_en.html](http://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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