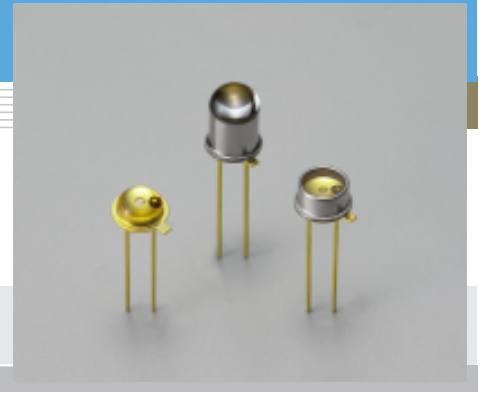


# Infrared LED

## L3989 series

High power infrared LED



### Features

- High reliability
- High radiant output power
- High-speed response

### Applications

- Optical fiber communication
- Spatial light transmission
- Optical switch

#### ■ Absolute maximum ratings (Ta=25 °C)

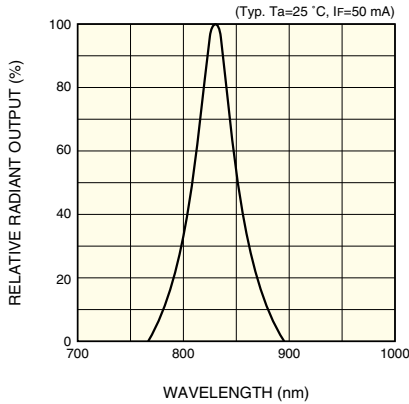
Parameter	Symbol	Condition	Value	Unit
Forward current	IF		80	mA
Reverse voltage	VR		3	V
Pulse forward current	IFP	Pulse width=10 μs Duty ratio=1 %	0.8	A
Operating temperature	Topr		-30 to +85	°C
Storage temperature	Tstg		-40 to +100 *	°C

\* L3989 is guaranteed to resist temperature cycle test of up to 5 cycles.

#### ■ Electrical and optical characteristics (Ta=25 °C)

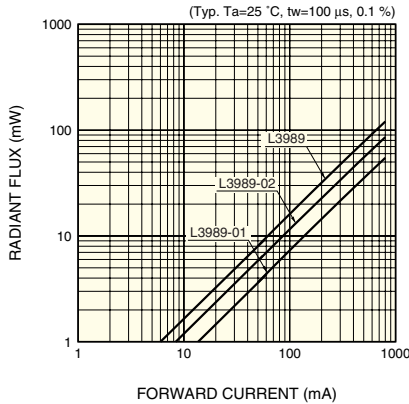
Parameter	Symbol	Condition	L3989			L3989-01			L3989-02			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Peak emission wavelength	$\lambda_p$	IF=50 mA	800	830	860	800	830	860	800	830	860	nm
Spectral half width	$\Delta\lambda$	IF=50 mA	-	40	-	-	40	-	-	40	-	nm
Forward voltage	VF	IF=50 mA	-	1.45	1.60	-	1.45	1.60	-	1.45	1.60	V
Pulse forward voltage	VFP	IF=0.8 A	-	2.3	2.9	-	2.3	2.9	-	2.3	2.9	V
Reverse current	IR	VR=3 V	-	-	10	-	-	10	-	-	10	μA
Radiant flux	$\phi_e$	IF=50 mA	6.0	8.0	-	2.5	3.6	-	4.0	5.8	-	mW
Radiant illuminance	PE	IF=50 mA	-	0.9	-	-	2.2	-	-	0.9	-	mW/cm <sup>2</sup>
Cut-off frequency	fc	IF=50 mA + 1 mAp-p	15	30	-	15	30	-	15	30	-	MHz

## Emission spectrum



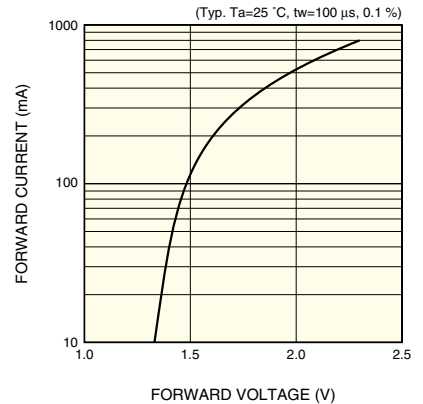
KLEDB0212EA

## Radiant flux vs. forward current



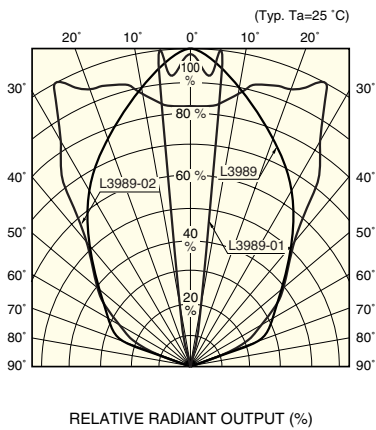
KLEDB0213EA

## Forward current vs. forward voltage



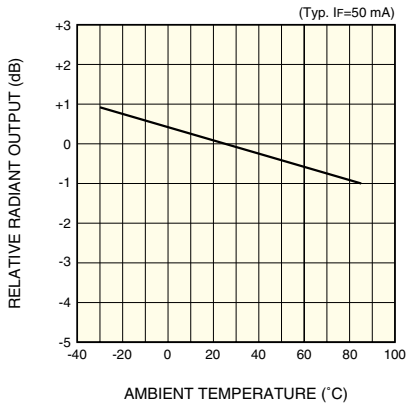
KLEDB0214EA

## Directivity



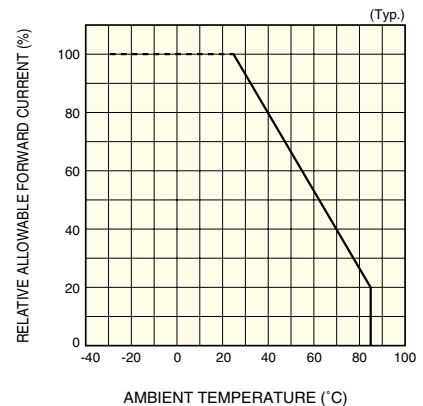
KLEDB0215EA

## Radiant output vs. ambient temperature



KLEDB0216EA

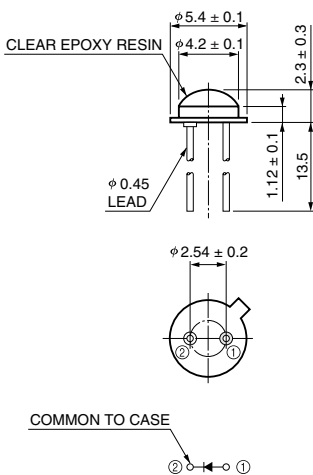
## Allowable forward current vs. ambient temperature



KLEDB0217EB

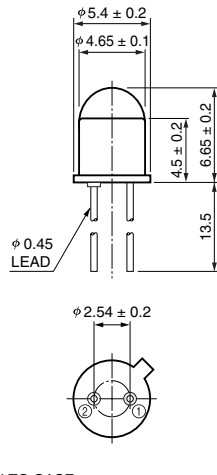
## Dimensional outlines (unit: mm)

### ① L3989



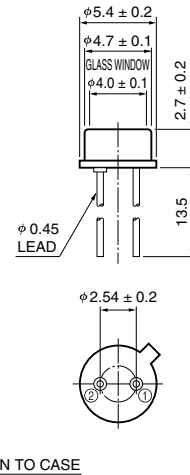
KLEDA0067EA

### ② L3989-01



KLEDA0064EB

### ③ L3989-02



KLEDA0068EA

# HAMAMATSU

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HAMAMATSU PHOTONICS K.K., Solid State Division

1126-1 Ichino-cho, Hamamatsu City, 435-8558 Japan, Telephone: (81) 053-434-3311, Fax: (81) 053-434-5184, <http://www.hamamatsu.com>

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, P.O.Box 6910, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1) 908-231-0960, Fax: (1) 908-231-1218

Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49) 08152-3750, Fax: (49) 08152-2658

France: Hamamatsu Photonics France S.A.R.L.: 8, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: 33-(1) 69 53 71 00, Fax: 33-(1) 69 53 71 10

United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, United Kingdom, Telephone: (44) 1707-294888, Fax: (44) 1707-325777

North Europe: Hamamatsu Photonics Norden AB: Smidesvägen 12, SE-171 41 Solna, Sweden, Telephone: (46) 8-509-031-00, Fax: (46) 8-509-031-01

Italy: Hamamatsu Photonics Italia S.R.L.: Strada della Moia, 1/E, 20020 Arese, (Milano), Italy, Telephone: (39) 02-935-81-733, Fax: (39) 02-935-81-741