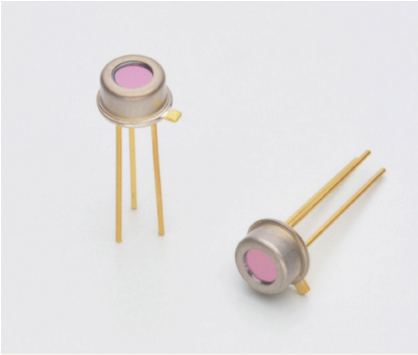
HAMAMATSU
PHOTON IS OUR BUSINESS

NEW

Mid infrared LED



L15893-0330M L15894-0390M L15895-0430M

Peak emission wavelength: 3.3 µm, 3.9 µm, 4.3 µm

The L15893-0330M, L15894-0390M, and L15895-0430M are mid infrared LEDs with the peak emission wavelength 3.3 µm, 3.9 µm, and 4.3 µm respectively. These products have been created using Hamamatsu unique crystal growth technology and process technology. Output is significantly increased compared to the previous products. These are suitable as light sources mounted in gas detectors.

Features

- **High output**
- **High-speed response**
- **High reliability**
- **Low power consumption**

Applications

- **Gas detection (CH_4, CO_2)**

Structure

Type no.	Package	Shape	Window material
L15893-0330M	Metal	TO-46	Si with AR coating
L15894-0390M			
L15895-0430M			

Absolute maximum ratings (Ta=25 °C unless otherwise noted)

Type no.	Reverse voltage V_R (V)	Forward current (QCW*1 mode) I_F (mA)	Pulse forward current I_{FP}*2 (A)	Power dissipation P (mW)	Operating temperature Topr*3 (°C)	Storage temperature Tstg*3 (°C)
L15893-0330M	1	100	0.5	170	-30 to +85	-40 to +100
L15894-0390M				140		
L15895-0430M				130		

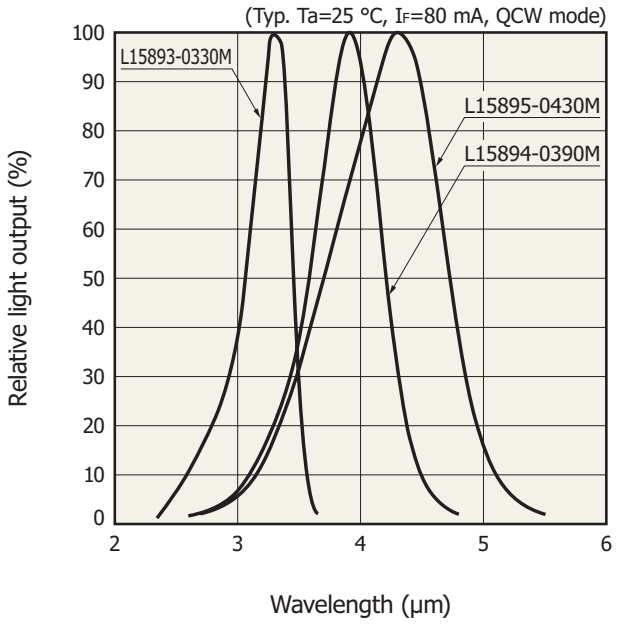
*1: Quasi continuous wave, pulse width=100 µs, duty ratio=50%
*2: Pulse width=10 µs, duty ratio=1%
*3: No dew condensation. When there is a temperature difference between a product and the surrounding area in high humidity environment, dew condensation may occur on the product surface. Dew condensation on the product may cause deterioration in characteristics and reliability.
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 (Ta=25 °C)

Type no.	Peak emission wavelength λp*4			Spectral half width Δλ*4			Radiant flux ϕe*4		Forward voltage V_F*4		Reverse current I_R V_R=100 mV	Rise time tr 10 to 90%
	Min. (µm)	Typ. (µm)	Max. (µm)	Min. (µm)	Typ. (µm)	Max. (µm)	Min. (mW)	Typ. (mW)	Typ. (V)	Max. (V)	Max. (µA)	Max. (µs)
L15893-0330M	3.1	3.3	3.4	-	0.4	0.6	1.1	1.9	2.7	3.2	1000	1
L15894-0390M	3.8	3.9	4.1	-	0.6	0.9	1.0	1.7	2.2	2.7	5000	
L15895-0430M	4.1	4.3	4.4	-	1.0	1.3	0.6	1.0	2.0	2.5	8000	

*4: I_F=80 mA, QCW mode

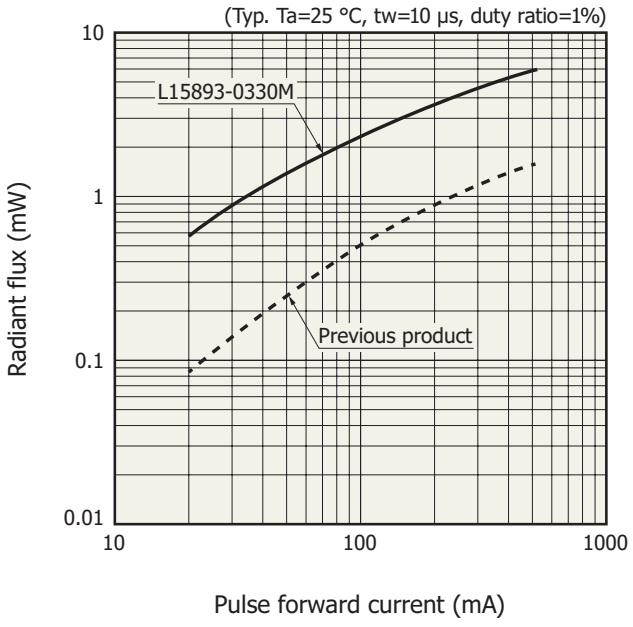
Emission spectrum



KLEDB0538EA

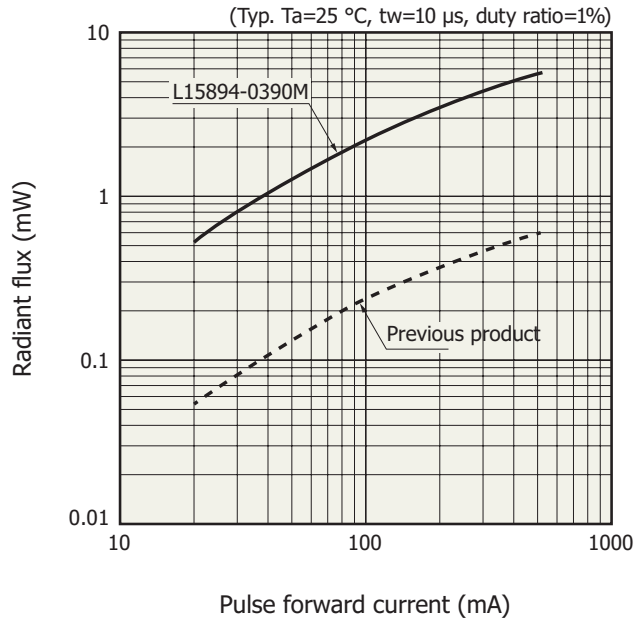
Radiant flux vs. pulse forward current

L15893-0330M



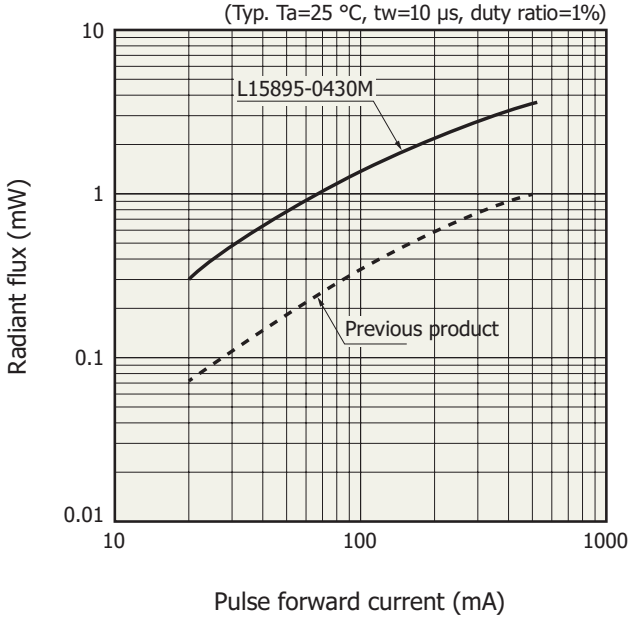
KLEDB0539EA

L15894-0390M



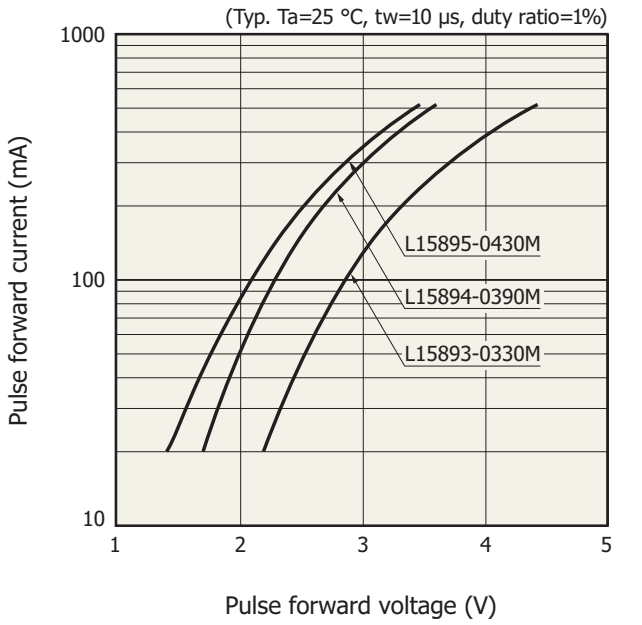
KLEDB0540EA

L15895-0430M



KLEDB0541EA

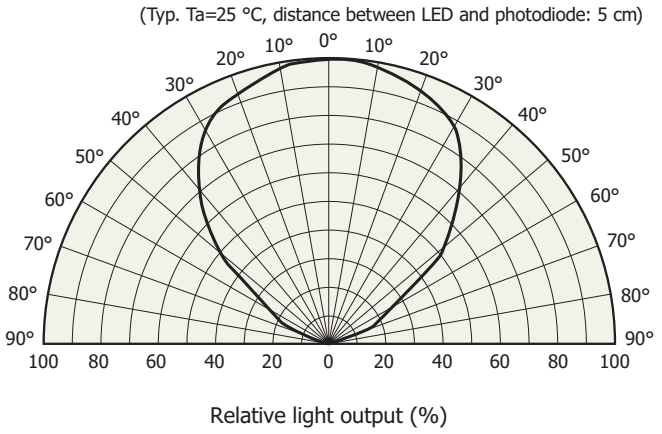
Pulse forward current vs. pulse forward voltage



KLEDB0542EA

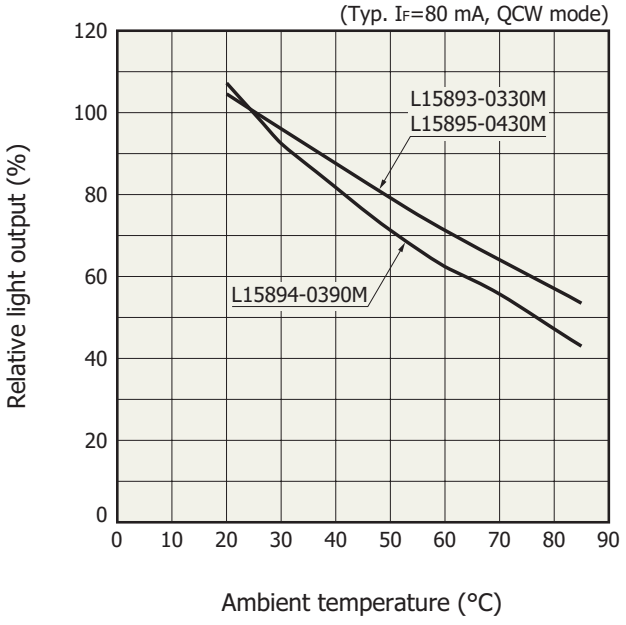
Directivity

L15893-0330M, L15894-0390M, L15895-0430M



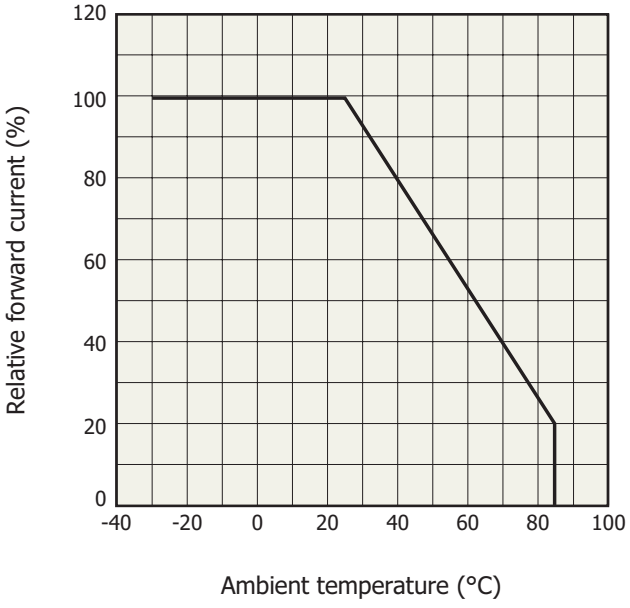
KLEDB0452EA

Light output vs. ambient temperature



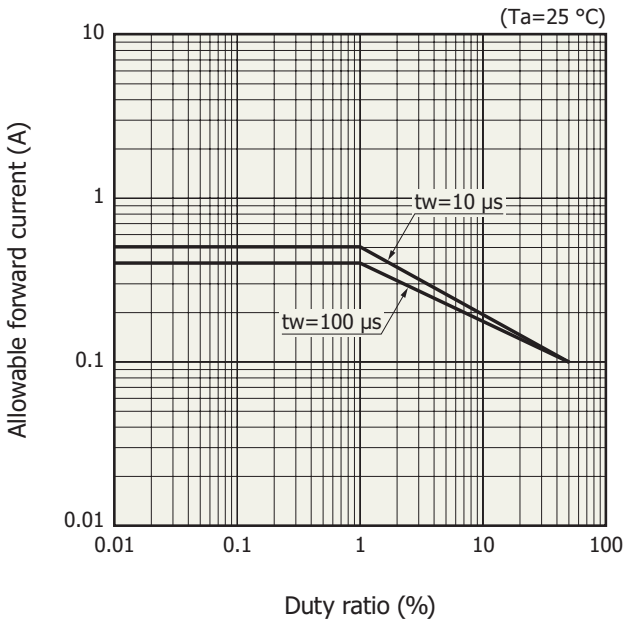
KLEDB0543EA

Allowable forward current vs. ambient temperature



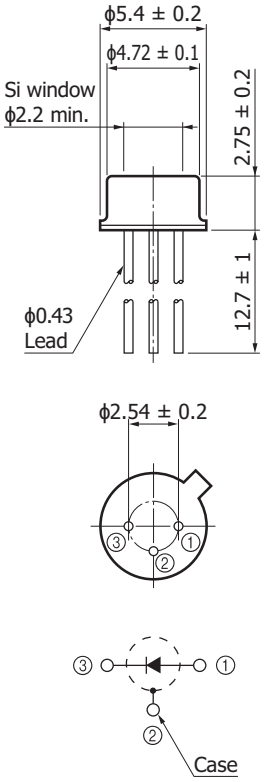
KLEDB0417EB

Allowable forward current vs. duty ratio



KLEDB0418EA

Dimensional outline (unit: mm)



KLEDA0101EB

Recommended soldering conditions

Solder temperature: 260 °C, 5 seconds or less, once at least 1 mm away from lead roots

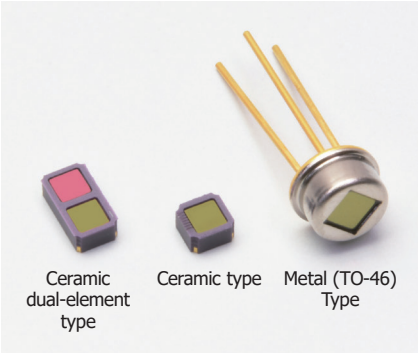
Related information

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

■ Precautions
· Disclaimer
· Metal, ceramic, plastic package products
· Compound opto-semiconductors (photosensors, light emitters)

■ Technical information
· LED

[Related products] InAsSb photovoltaic detectors with band-pass filter P13243 series



Ceramic dual-element type | Ceramic type | Metal (TO-46) Type

For detecting wavelengths of 3.3 µm, 3.9 µm, or 4.26 µm, we also offer the P13243 series InAsSb photovoltaic detector with band-pass filter.

Type no.	Type
P13243-015CF/-016CF	Ceramic dual-element type
P13243-033CF/-039CF/-043CF	Ceramic type
P13243-033MF/-039MF/-043MF	Metal (TO-46) Type

HAMAMATSU www.hamamatsu.com

HAMAMATSU PHOTONICS K.K., Solid State Division
1126-1 Ichino-cho, Higashi-ku, Hamamatsu City, 435-8558 Japan, Telephone: (81)53-434-3311, Fax: (81)53-434-5184
U.S.A.: Hamamatsu Corporation: 360 Foothill Road, Bridgewater, N.J. 08807, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218, E-mail: usa@hamamatsu.com
Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49)8152-375-0, Fax: (49)8152-265-8, E-mail: info@hamamatsu.de
France: Hamamatsu Photonics France S.A.R.L.: 19, 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, E-mail: infos@hamamatsu.fr
United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, UK, Telephone: (44)1707-294888, Fax: (44)1707-325777, E-mail: info@hamamatsu.co.uk
North Europe: Hamamatsu Photonics Norden AB: Torshamnsgatan 35 16440 Kista, Sweden, Telephone: (46)8-509 031 00, Fax: (46)8-509 031 01, E-mail: info@hamamatsu.se
Italy: Hamamatsu Photonics Italia S.r.l.: Strada della Moia, 1 int. 6, 20020 Arese (Milano), Italy, Telephone: (39)02-93 58 17 33, Fax: (39)02-93 58 17 41, E-mail: info@hamamatsu.it
China: Hamamatsu Photonics (China) Co., Ltd.: 1201 Tower B, Jiaming Center, 27 Dongsanhuan Beilu, Chaoyang District, 100020 Beijing, P.R.China, Telephone: (86)10-6586-6006, Fax: (86)10-6586-2866, E-mail: hpc@hamamatsu.com.cn
Taiwan: Hamamatsu Photonics Taiwan Co., Ltd.: 8F-3, No. 158, Section2, Gongdao 5th Road, East District, Hsinchu, 300, Taiwan R.O.C. Telephone: (886)3-659-0080, Fax: (886)3-659-0081, E-mail: info@hamamatsu.com.tw

Cat. No. KLED1085E01 Jun. 2020 DN