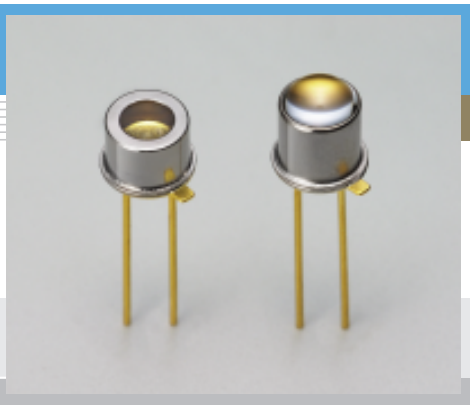
Infrared LED
L7850 series

Peak emission wavelength: 1.45 µm



L7850 series is a long wavelength LED using an InGaAs chip. Peak emission occurs at 1.45 µm, making L7850 series ideal for detection of water content or moisture. L7850-01 has a glass lens window for narrow directivity (beam spread).

Features

- Peak emission wavelength: 1.45 µm
- High radiant output power
- Narrow directivity (L7850-01)

Applications

- Light source for moisture meter
- Light source for photosensitive material

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

Parameter	Symbol	Condition	Value	Unit
Reverse voltage	V_R		1	V
Forward current	I_F		80	mA
Forward current derating rate	-	Ta > 25 °C	1.1	mA/°C
Pulse forward current	I_{FP}	Pulse width=10 µs Duty ratio=1 %	1.0	A
Pulse forward current derating rate	-	Ta > 25 °C	13	mA/°C
Power dissipation	P		150	mW
Operating temperature	Topr		-30 to +85	°C
Storage temperature	Tstg		-40 to +100 *1	°C

*1: L7850 series is guaranteed to resist temperature cycle test of up to 5 cycles.

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

Parameter	Symbol	Condition	L7850/-01			Unit
			Min.	Typ.	Max.	
Peak emission wavelength	λp	I_F=50 mA	1.4	1.45	1.5	µm
Spectral half width (FWHM)	Δλ	I_F=50 mA	-	100	150	nm
Radiant flux	φe	I_F=50 mA	0.7	1.0	-	mW
Forward voltage	V_F	I_F=50 mA	-	1.0	1.5	V
Pulse forward voltage	V_{FP}	I_F=1 A	-	2	3	V
Reverse current	I_R	V_R=1 V	-	-	10	µA
Cut-off frequency *2	fc	I_F=50 mA ± 10 mAp-p	1	3	-	MHz

*2: Frequency at which the light output drops by -3 dB based on light output at 100 kHz.

L7850 series may be damaged or performance may deteriorate due to static electricity, so use caution when handling.

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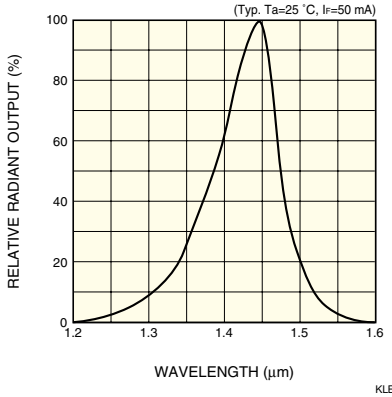
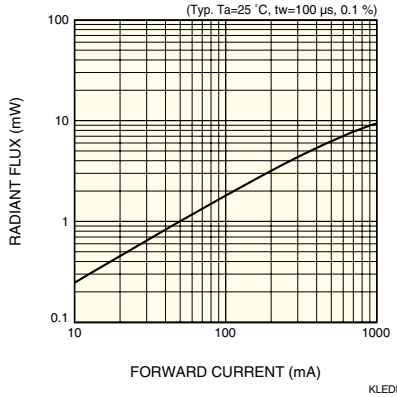
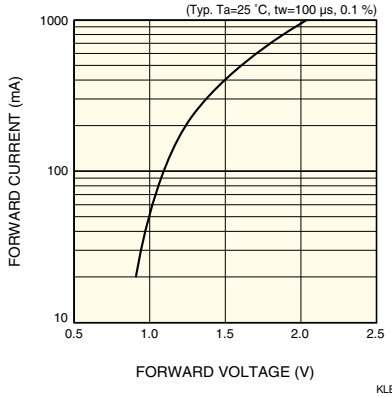
■ Emission spectrum



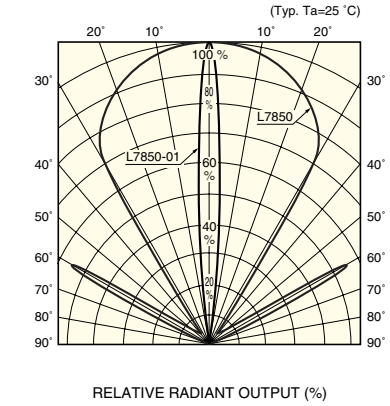
■ Radiant flux vs. forward current



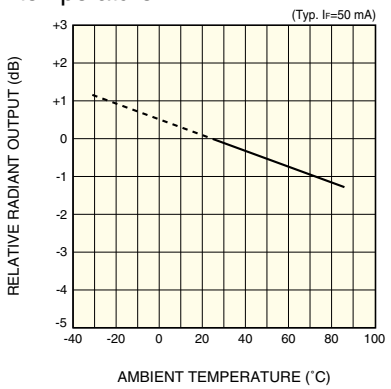
■ Forward current vs. forward voltage



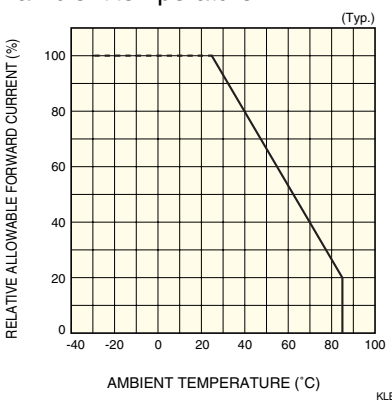
■ Directivity



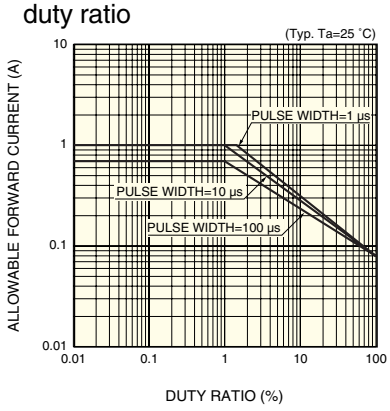
■ Radiant output vs. ambient temperature



■ Allowable forward current vs. ambient temperature

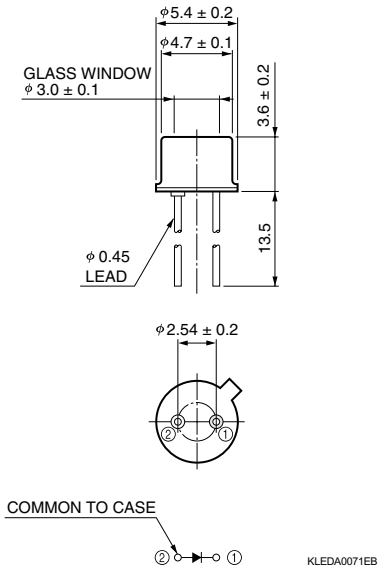


■ Allowable forward current vs. duty ratio

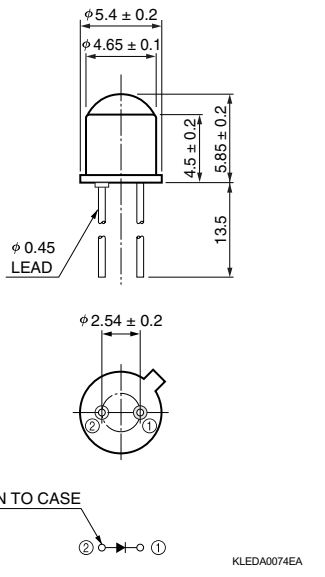


■ Dimensional outlines (unit: mm)

L7850



L7850-01



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

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