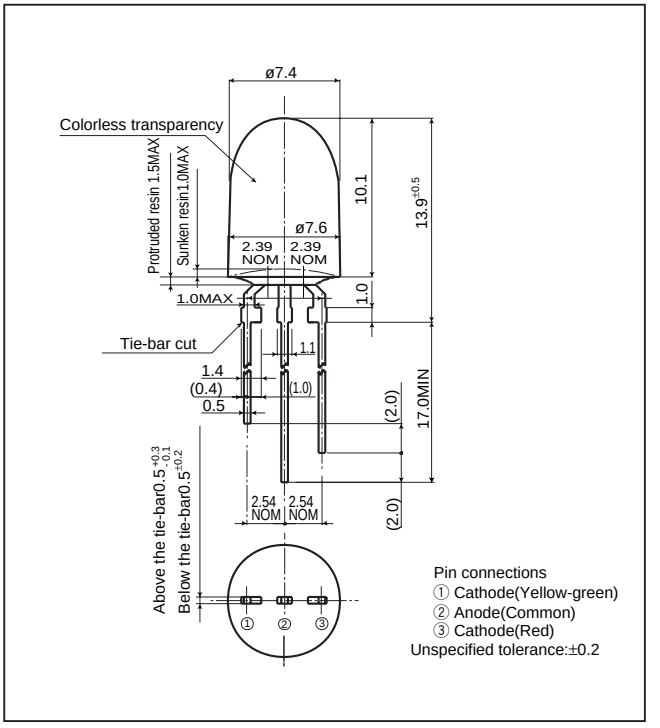
GL7FU11

ø7.5mm, Cylinder Type(Flangeless), Colorless Transparency, High-luminosity, Dichromatic Large LED Lamp for Outdoor Use

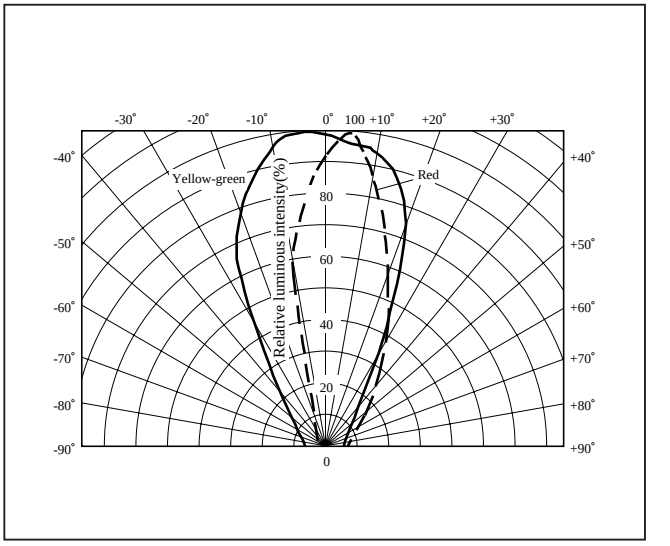
■ Outline Dimensions

(Unit : mm)



■ Radiation Diagram

(Ta=25˚C)



■ Absolute Maximum Ratings

(Ta=25˚C)

Model No.	Radiation color	Radiation material	Power dissipation P*1 (mW)	Forward current IF (mA)	Peak forward current IFM*2 (mA)	Derating factor (mA/˚C) DC	Derating factor (mA/˚C) Pulse	Reverse voltage VR (V)	Operating temperature Topr (˚C)	Storage temperature Tstg (˚C)	Soldering temperature Tsol*3 (˚C)
GL7FU11	Yellow-green	GaP	84	30	100	0.40	0.67	5	-30 to +85	-30 to +100	260
	Red(Super-luminosity)	GaAlAs on GaAlAs	75	30	50	0.40	0.67	4			

*1 The value is specified under the condition that either color is lightened separately. When the both diodes are lightened simultaneously, the power dissipation of each diode should be less than the half of the value specified in this table.
*2 Duty ratio=1/10, Pulse width=0.1ms
*3 5s or less(At the position of 1.6mm or more from the bottom face of resin package)

■ Electro-optical Characteristics

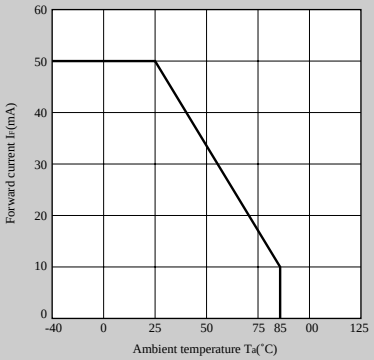
(Ta=25˚C)

Lens type	Model No.	Radiation color	Forward voltage VF(V) TYP	Forward voltage VF(V) MAX	Peak emission wavelength λp(nm) TYP	Peak emission wavelength IF (mA)	Luminous intensity Iv(mcd) TYP	Luminous intensity IF (mA)	Spectrum radiation bandwidth Δλ(nm) TYP	Spectrum radiation bandwidth IF (mA)	Reverse current IR(μA) MAX	Reverse current VR (V)	Terminal capacitance Ct(pF) TYP	Terminal capacitance (MHz)	Page for characteristics diagrams
Colorless transparency	GL7FU11	Yellow-green	2.2	2.8	565	20	160	20	30	20	10	4	12	1	148
		Red	1.85	2.5	660	20	500	20	20	20	100	3	25	1	145

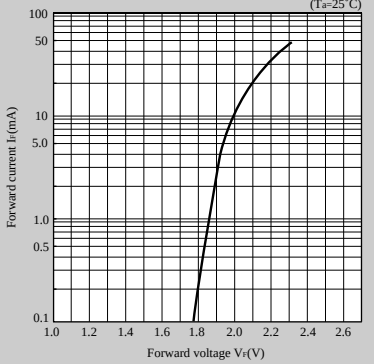
LED Lamp Characteristics Diagrams

ZG series

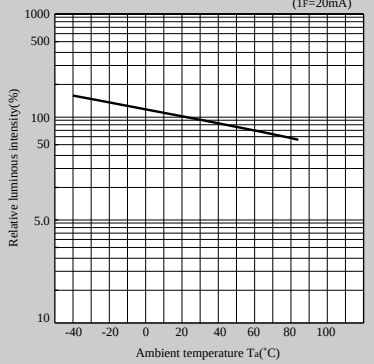
Forward Current Derating Curve



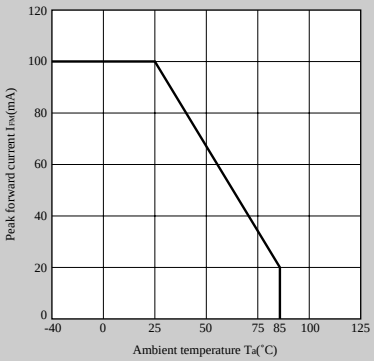
Forward Current vs. Forward Voltage(Note)



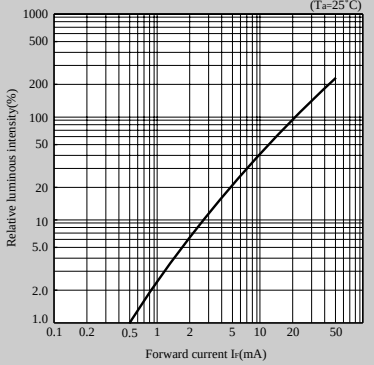
Luminous Intensity vs. Ambient Temperature(Note)



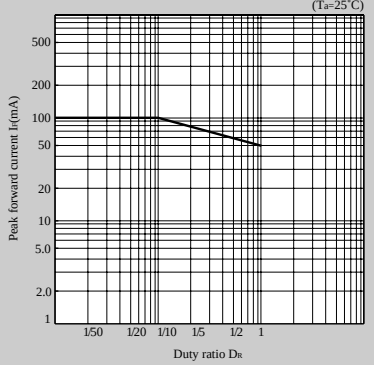
Peak Forward Current Derating Curve



Luminous Intensity vs. Forward Current(Note)

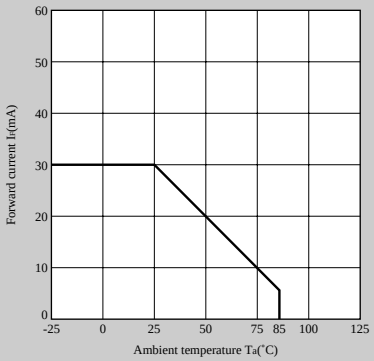


Duty Ratio vs. Peak Forward Current

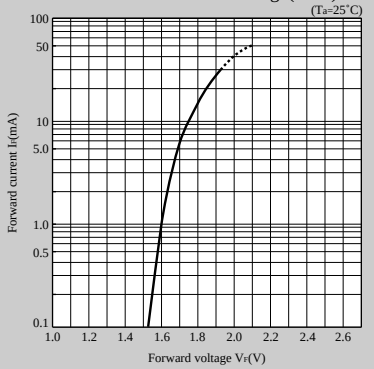


UR,U series

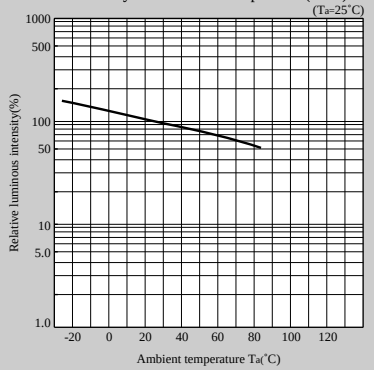
Forward Current Derating Curve



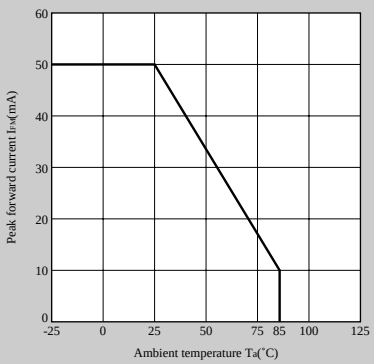
Forward Current vs. Forward Voltage(Note)



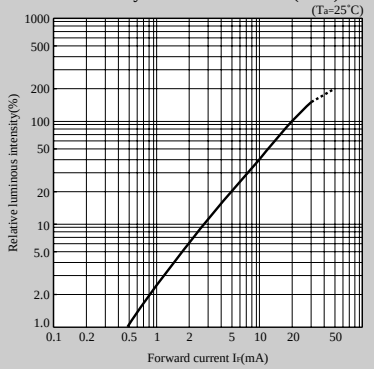
Luminous Intensity vs. Ambient Temperature(Note)



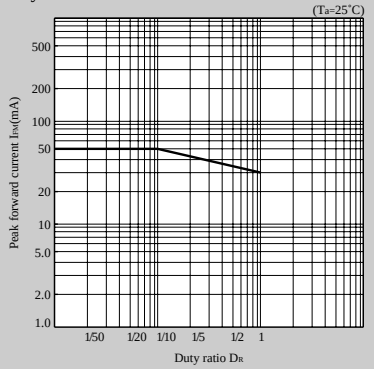
Peak Forward Current Derating Curve



Luminous Intensity vs. Forward Current(Note)



Duty Ratio vs. Peak Forward Current

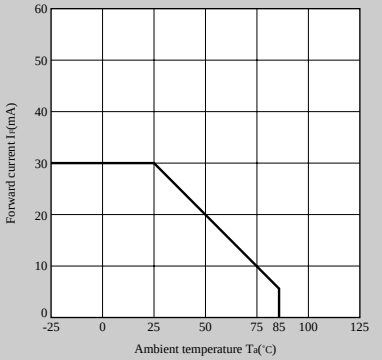


Note)Characteristics shown in diagrams are typical values. (not assurance value)

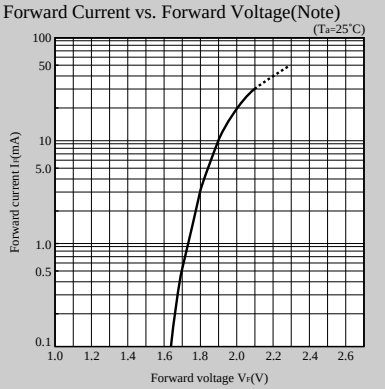
LED Lamp Characteristics Diagrams

HY,H series

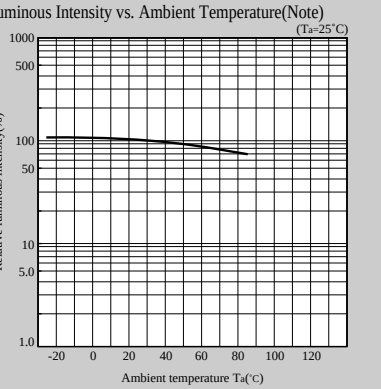
Forward Current Derating Curve



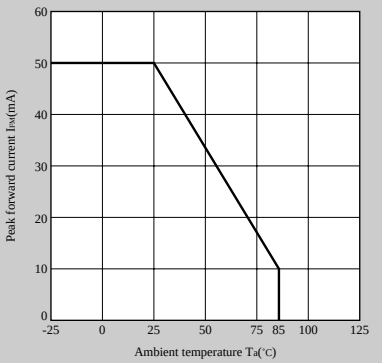
Forward Current vs. Forward Voltage(Note)



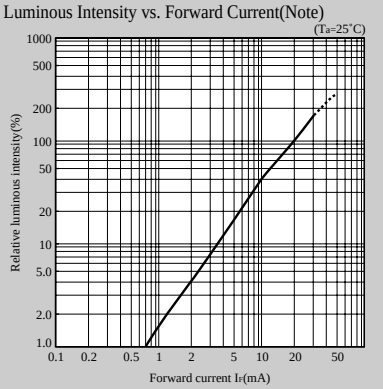
Luminous Intensity vs. Ambient Temperature(Note)



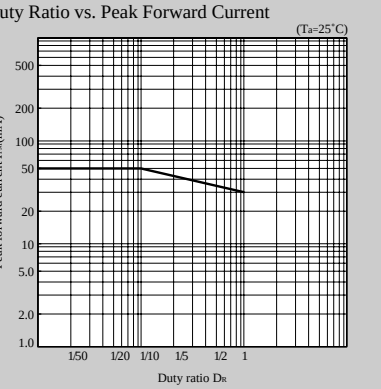
Peak Forward Current Derating Curve



Luminous Intensity vs. Forward Current(Note)

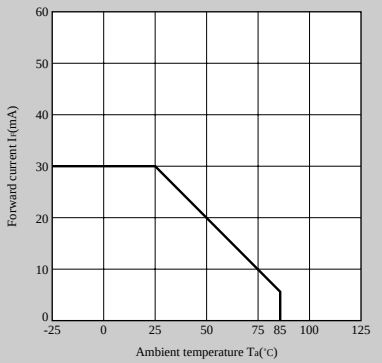


Duty Ratio vs. Peak Forward Current

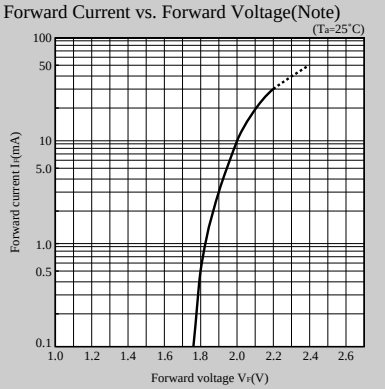


EG,E series

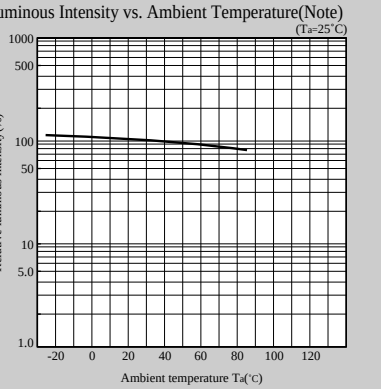
Forward Current Derating Curve



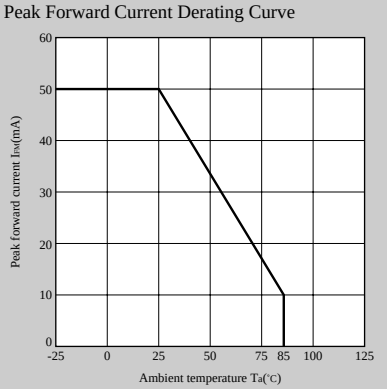
Forward Current vs. Forward Voltage(Note)



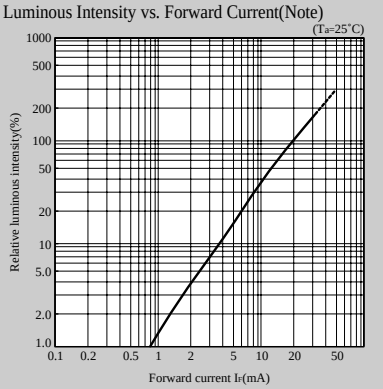
Luminous Intensity vs. Ambient Temperature(Note)



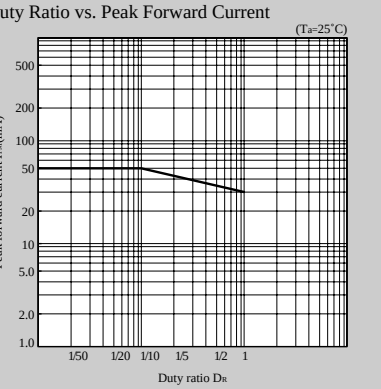
Peak Forward Current Derating Curve



Luminous Intensity vs. Forward Current(Note)



Duty Ratio vs. Peak Forward Current



Note)Characteristics shown in diagrams are typical values. (not assurance value)

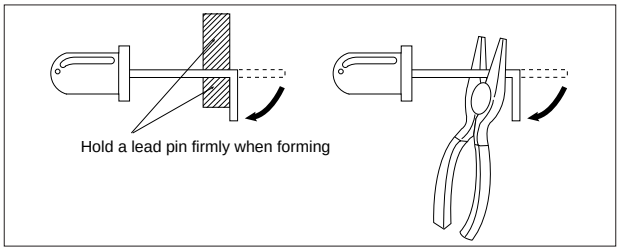
General Description of Light Emitting Diodes

A: Lead Pin Type

■ Lead Forming Method

Avoid forming a lead pin with the lead pin base as a fulcrum: be sure to hold a lead pin firmly when forming.

Lead pins should be formed before soldering.



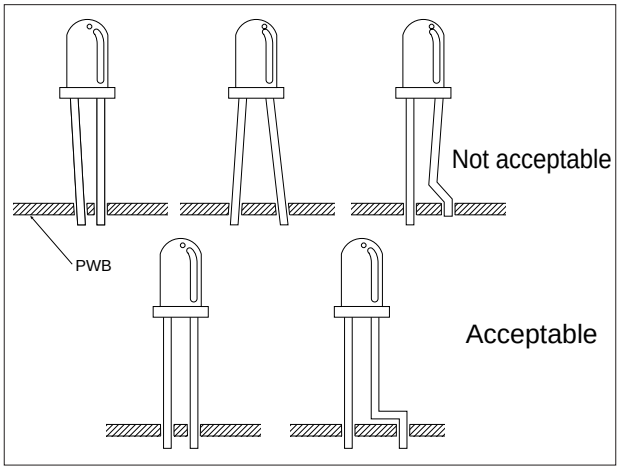
■ Installation

(1) Installation on a PWB

When mounting an LED lamp on a PWB, do not apply physical stress to the lead pins.

(Notes) ● The lead pin pitch should match the PWB pin-hole pitch: absolutely avoid widening or narrowing the lead pins.

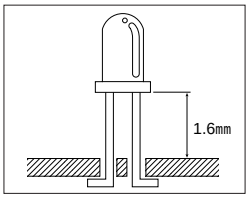
● When positioning an LED lamp, basically employ an LED with tie-bar cut or use a spacer.



(2) When an LED lamp is mounted directly on a PWB

If the bottom face of an LED lamp is mounted directly on single-sided PWB, the base of the lead pins may be subjected to have physical stress due to PWB warp, cutting or clinching of lead pins. Prior to use, be sure to check that no disconnection inside of the resin or damage to resin etc., is found.

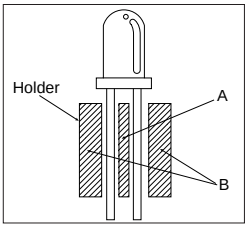
When an LED lamp is mounted on a double-sided PWB, the heat during soldering affects the resin; therefore, keep the LED lamp more than 1.6mm afloat above the PWB.



(3) Installation using a holder

During an LED lamp positioning, in case of using a holder, holder A should be designed to be smaller than the inside diameter of lead pins. Holder B should be designed to be larger than the outside diameter of lead pins.

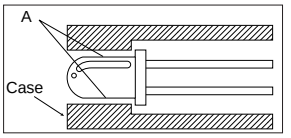
(Notes) ● Pay attention to the thermal expansion coefficient of the material used for the holder. Since the holder expands and contracts due to preheat and soldering heat, mechanical stress may be applied to the lead pins, resulting in disconnection.



(4) Installation to the case

Do not fix part A with adhesives when fixed to the case as shown in the figure.

A hole of the case should be designed not to be smaller than the outside diameter of LED lamp resin.



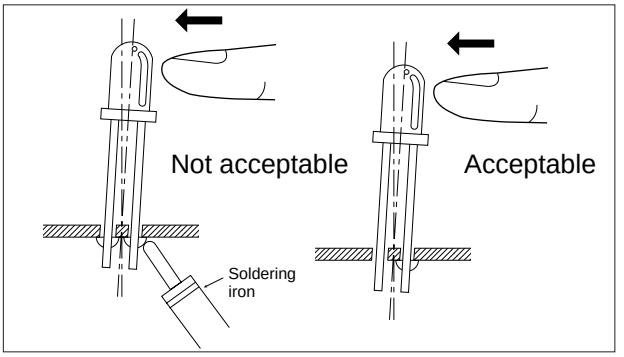
■ Soldering Conditions

Solder the lead pins under the following conditions.

Type of Soldering	Conditions
1. Manual soldering	295˚C ± 5˚C, within 3 seconds
2. Wave soldering	260˚C ± 5˚C, within 5 seconds
3. Reflow soldering	Preheating 70˚C to 80˚C, within 30 seconds Soldering 245˚C ± 5˚C, within 5 seconds

(Notes) ● Avoid dipping resin into soldering bath.

● Avoid applying stress to lead pins while they are heated. For example, when the LED lamp is moved with the heat applied to the lead pins during manual soldering or solder repair, disconnection may occur.



■ Cleaning

(1) Solvents

The package resin may be penetrated by solvents used in cleaning. Refer to the table below for usable solvents.

Solvent	Usable
Ethyl alcohol	○
Isopropyl alcohol	○
Chlorosen	×
Acetone	×
Trichloroethylene	×

○ : Acceptable

× : Not acceptable

(Notes) ● There is a world-wide movement to restrict the use of chrolofluorocarbon (CFC) based solvents and we recommend that you avoid their use. However, before using a CFC substitute solvent, carefully check that it will not penetrate the package resin.

(2) Cleaning Methods

Cleaning Method	Usable	Remarks
Solvent cleaning	○	Immersion up to one minute at room temperature
Ultrasonic cleaning	△	Test the cleaning under actual conditions and check for abnormalities before actual use.

○ : Acceptable

△ : Acceptability depends on device type and conditions

(Notes) ● The affect on the device from ultrasonic cleaning differs depending on the size of the cleaning bath, ultrasonic output, duration, board size and device mounting method. Test the cleaning method under actual conditions and check for abnormalities before actual use.

● Cleaning with water is not allowed with the lead pins resin-tubulated: water may remain, thus causing rust to the lead pins.

● Please contact our representative before using a cleaning solvent or method not given above.

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