

**Pb-free
HEAT**



UVGB1306L

PLCC-6 Type Tri-color

Features

Package	PLCC-6 Type, Water Clear Resin
Product features	<ul style="list-style-type: none"> • Outer Dimension 6.0 x 6.0 x 1.6 mm(L x W x H) • Temperature range. Storage Temperature : -40°C~100°C Operating Temperature : -40°C~85°C • Lead-free soldering compatible • RoHS compliant
Dominant wavelength	Blue : (UB) 470nm Green : (UG) 525nm Red : (UV) 618nm
Spatial distribution	120 deg.
Die materials	UB,UG : InGaN, UV :AlGaInP
Rank grouping parameter	White sorting by RGB simultaneous lighting is performed, and it is taping per rank
Assembly method	Auto pick & place machine (Auto Mounter)
Soldering methods	Reflow soldering and manual soldering
Taping and reel	1,000pcs per reel in a 12mm width tape. (Standard) Reel diameter: Φ 180mm
ESD	1kV (HBM)

Recommended Applications

Cellular Phone, Electric Household Appliances, Amusement Equipment, Other General Applications

Color Variations and Luminous Intensity

(T_a=25°C)
<White Sorting of Simultaneous RGB Lighting>

Part No.	Die Name	Material	Emitted Color	Lens Color	Dominant Wavelength		Luminous Intensity		
					λ_d (nm)		I_v (mcd)		
					TYP.	I _F	MIN.	TYP.	I _F
UVGB1306L	UB	InGaN	Blue	Water Clear	470	17		170	17
	UG	InGaN	Green		523	35		750	35
	UV	AlGaInP	Red		618	18		400	18

<Conditions I_F = 20mA>

Part No.	Die Name	Material	Emitted Color	Lens Color	Dominant Wavelength		Luminous Intensity		
					λ_d (nm)		I_v (mcd)		
					TYP.	I _F	MIN.	TYP.	I _F
UVGB1306L	UB	InGaN	Blue	Water Clear	470	20		190	20
	UG	InGaN	Green		525	20		550	20
	UV	AlGaInP	Red		618	20		500	20

※ Note : The luminous intensity(I_v) and dominant wavelength(λ_d) above are the setup values of the sorting machine.
 (Tolerance : I_v ... $\pm 15\%$, λ_d ... $\pm 2\text{nm}$)

Absolute Maximum Ratings

(T_a=25°C)

Item	Symbol	Absolute Maximum Ratings			Unit
		UB	UG	UV	
Power Dissipation	P _d	168	168	112	mW
Total Value of Power Dissipation	P _d	290 * 1			mW
Forward Current	I _F	35	35	35	mA
Pulse Forward Current *2	I _{FRM}	100	100	100	mA
Derating (T _a =60 °C or higher)	ΔI _F	0.80	0.80	0.80	mA/°C
	ΔI _{FRM}	2.50	2.50	2.50	mA/°C
Reverse Voltage	V _R	5	5	5	V
Operating Temperature	T _{opr}	-40 ~ +85			°C
Storage Temperature	T _{stg}	-40 ~ +100			°C

*1 The maximum Power Dissipation at the time of Simultaneous RGB Lighting (White lighting)

*2 I_{FRM} Measurement condition : Pulse Width ≤ 1ms., Duty ≤ 1/20.

Electro-Optical Characteristics (UB,UG,UV)

 (T_a=25°C)

<White Sorting of Simultaneous RGB Lighting>

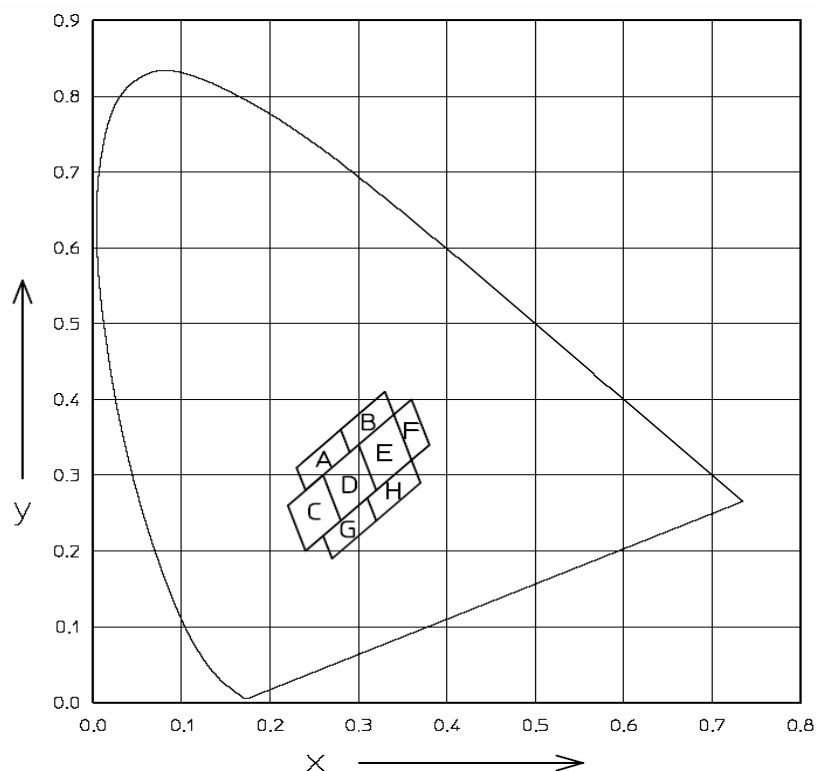
Item	Conditions	Symbol	Characteristics			Unit	
			UB	UG	UV		
Forward Voltage	UB:I _F =17mA UG:I _F =35mA UV:I _F =18mA	V _F	TYP.	3.6	4.1	2.1	V
			MAX.	4.2	4.8	2.8	
Reverse Current	V _R =5V	I _R	MAX.	100	100	100	μA
Dominant Wavelength	UB:I _F =17mA UG:I _F =35mA UV:I _F =18mA	λ _d	TYP.	470	523	618	nm
Spectral Line Half Width	UB:I _F =17mA UG:I _F =35mA UV:I _F =18mA	Δλ	TYP.	26	35	18	nm
Half Intensity Angle	UB:I _F =17mA UG:I _F =35mA UV:I _F =18mA	2θ _{1/2}	TYP.	120	120	120	deg.

< Conditions : I_F = 20mA >

Item	Conditions	Symbol	Characteristics			Unit	
			UB	UG	UV		
Forward Voltage	I _F =20mA	V _F	TYP.	3.7	3.7	2.2	V
			MAX.	4.2	4.2	2.8	
Reverse Current	V _R =5V	I _R	MAX.	100	100	100	μA
Peak Wavelength	I _F =20mA	λ _p	TYP.	465	522	624	nm
Dominant Wavelength	I _F =20mA	λ _d	TYP.	470	525	618	nm
Spectral Line Half Width	I _F =20mA	Δλ	TYP.	26	35	18	nm
Half Intensity Angle	I _F =20mA	2θ _{1/2}	TYP.	120	120	120	deg.

Sorting Chart for Chromaticity Coordinates

<White Sorting of Simultaneous RGB Lighting>

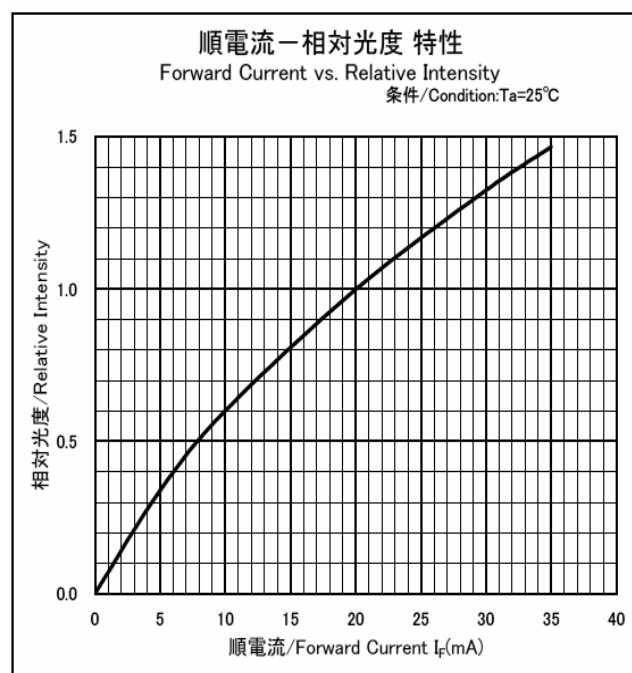
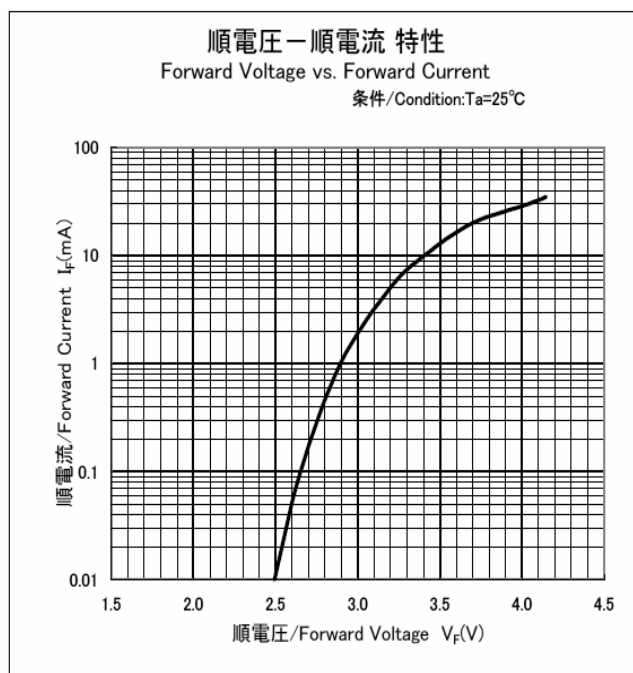
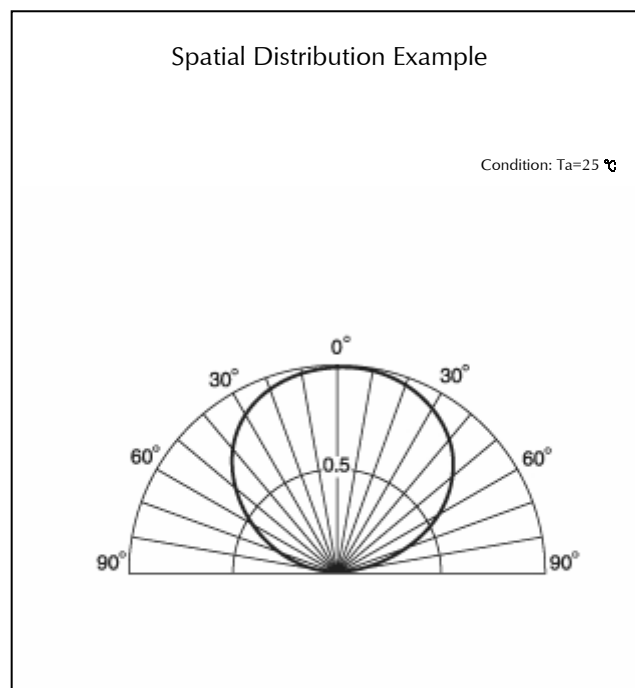
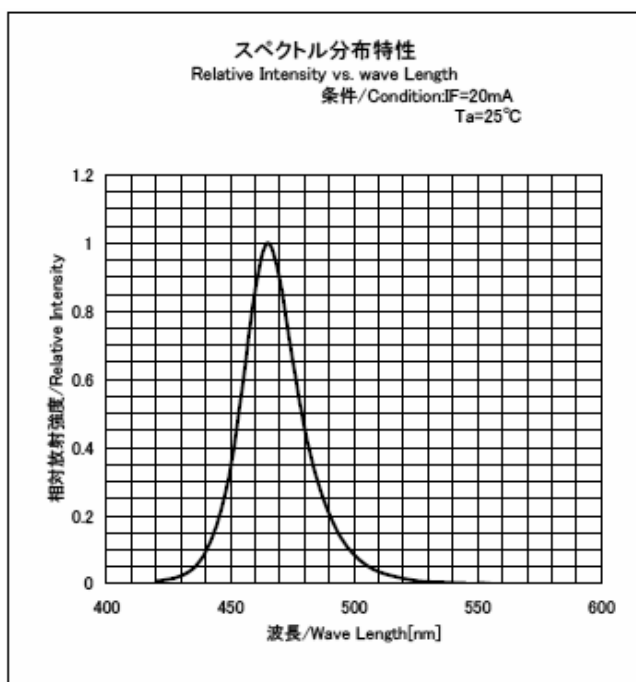


Rank	LEFT DOWN point		LEFT UP point		RIGHT UP point		RIGHT UP point		Conditions
	x	y	x	y	x	y	x	y	
A	0.24	0.28	0.23	0.31	0.28	0.36	0.29	0.33	Blue $I_F = 17\text{mA}$
B	0.29	0.33	0.28	0.36	0.33	0.41	0.34	0.38	
C	0.24	0.20	0.22	0.26	0.26	0.30	0.28	0.24	Green $I_F = 35\text{mA}$
D	0.28	0.24	0.26	0.30	0.30	0.34	0.32	0.28	
E	0.32	0.28	0.30	0.34	0.34	0.38	0.36	0.32	Red $I_F = 18\text{mA}$
F	0.36	0.32	0.34	0.38	0.36	0.40	0.38	0.34	
G	0.27	0.19	0.26	0.22	0.31	0.27	0.32	0.24	
H	0.32	0.24	0.31	0.27	0.36	0.32	0.37	0.29	

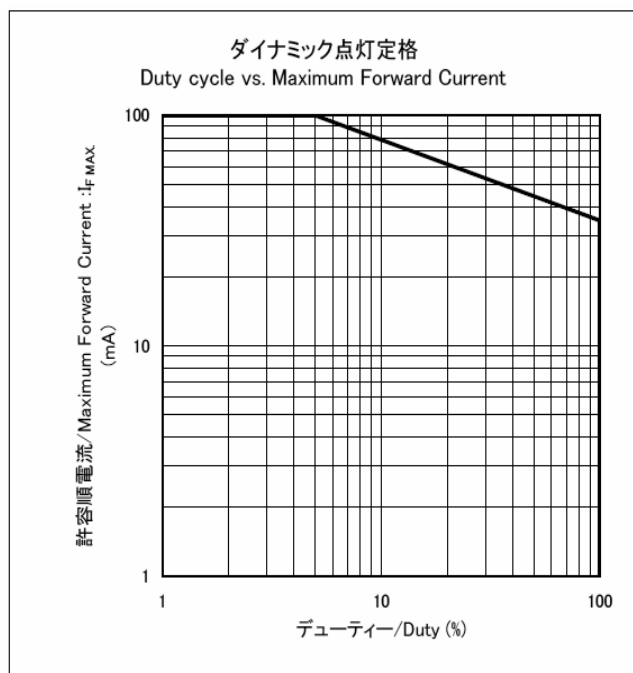
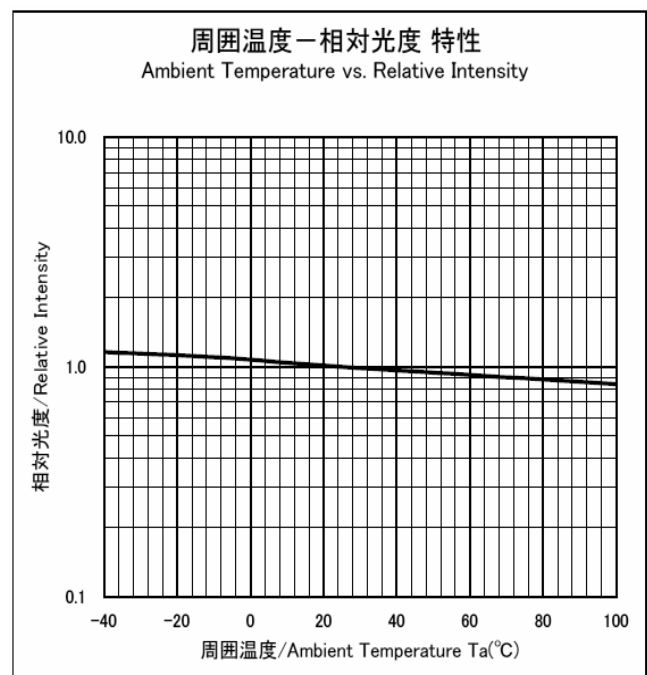
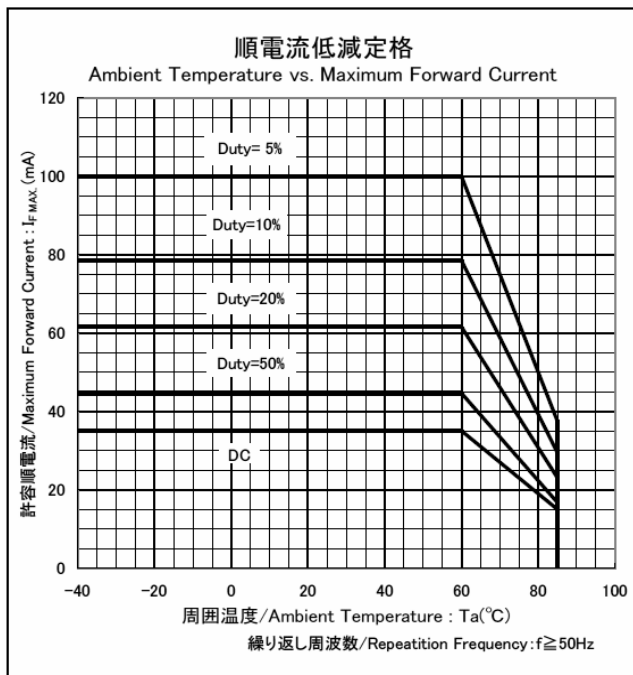
Chromaticity Coordinates Tolerance Each Rank : +/-0.02

Please contact our sales staff concerning rank designation.

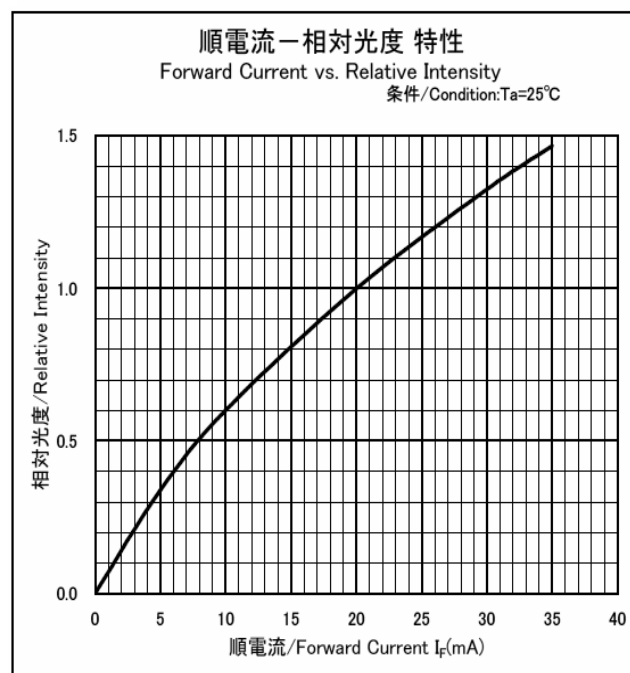
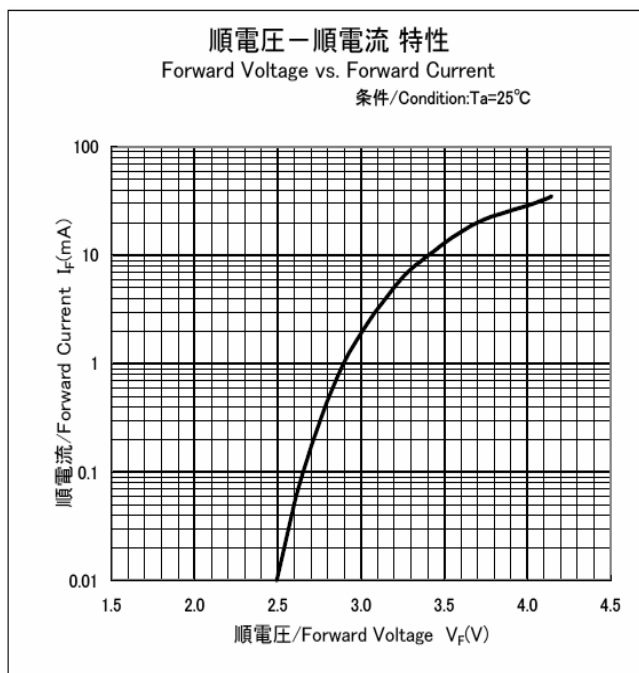
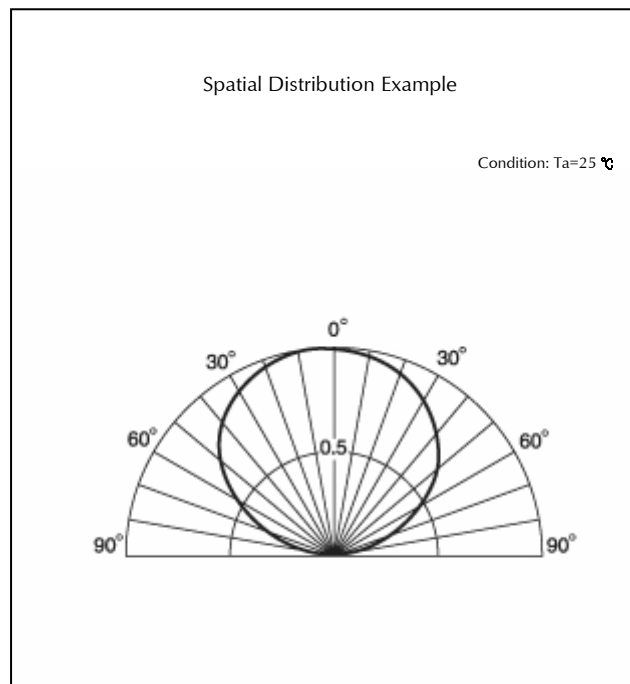
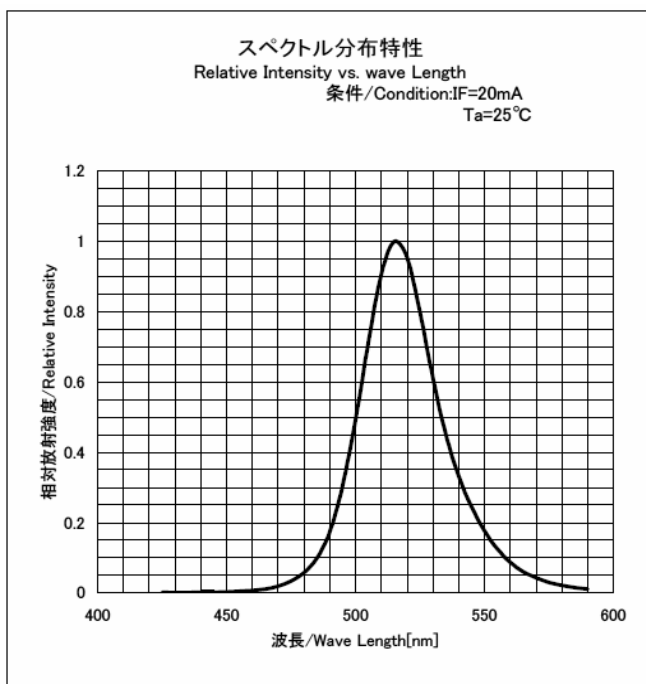
Technical Data(UB)



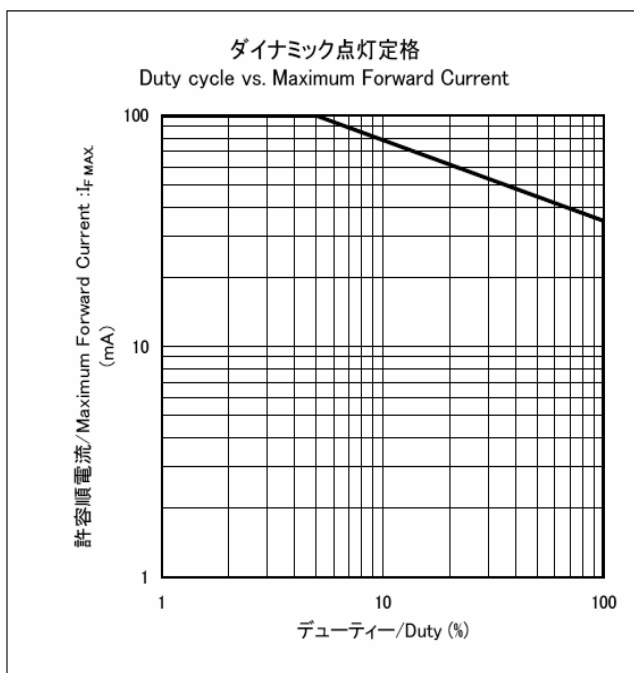
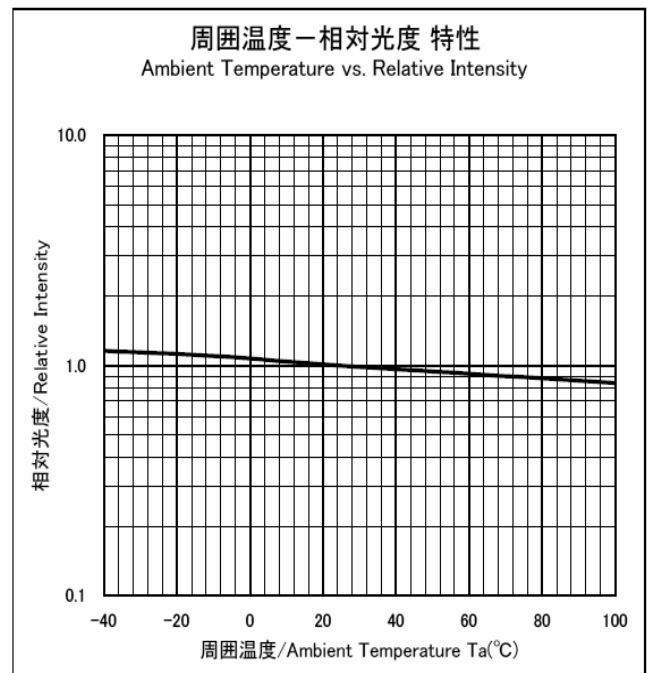
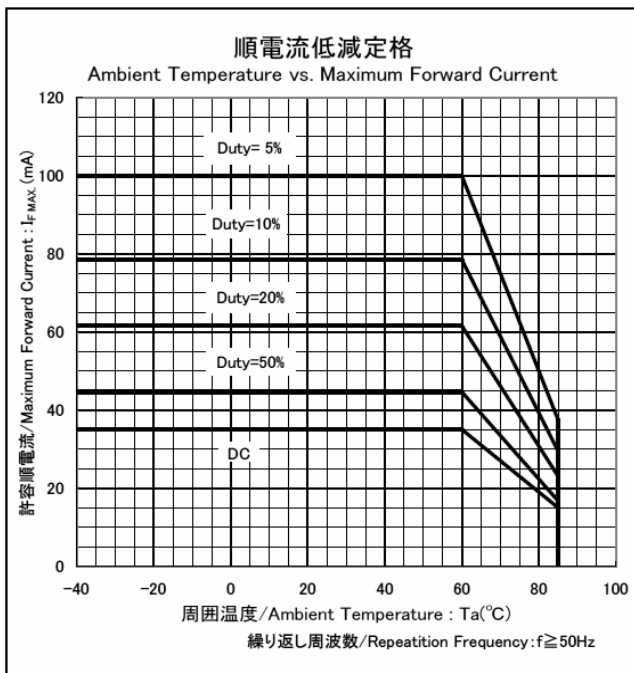
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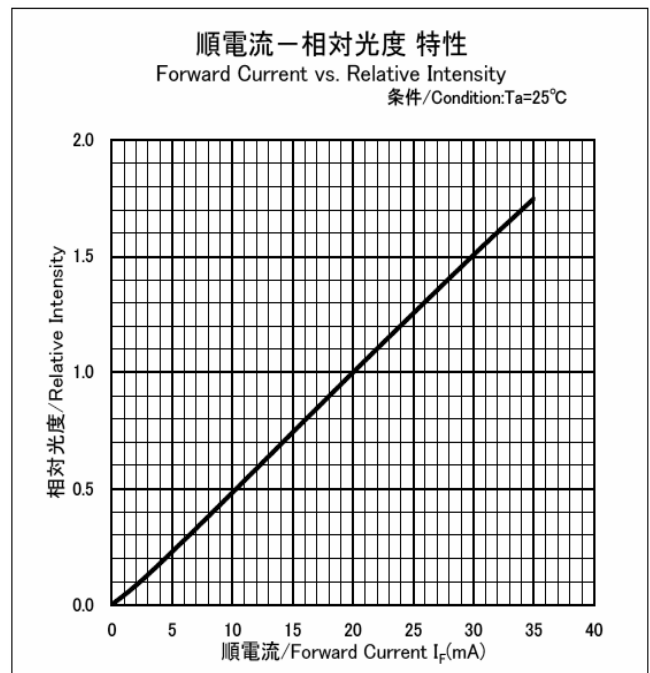
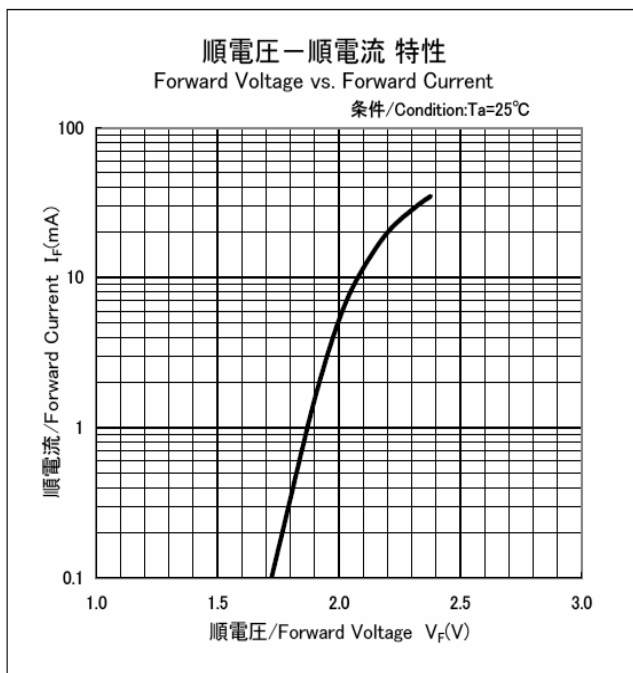
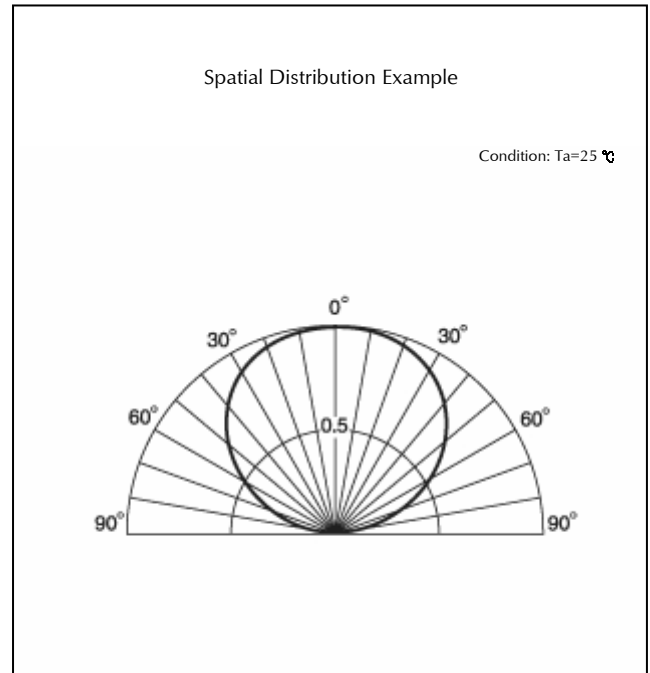
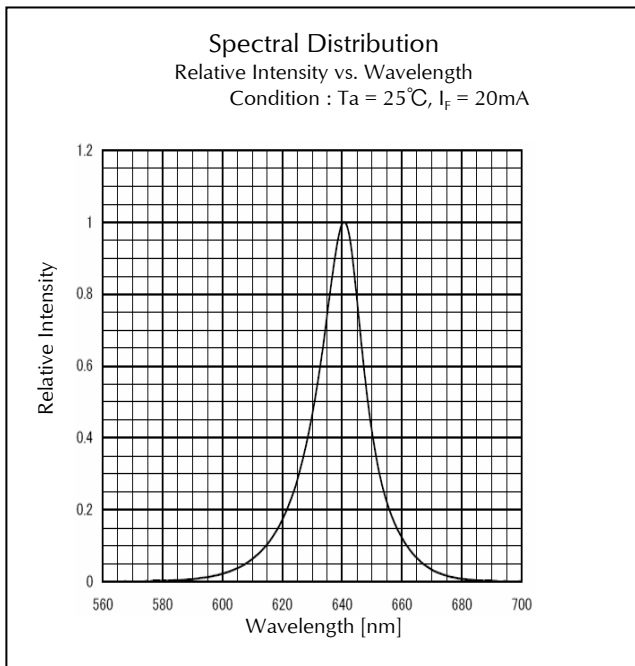
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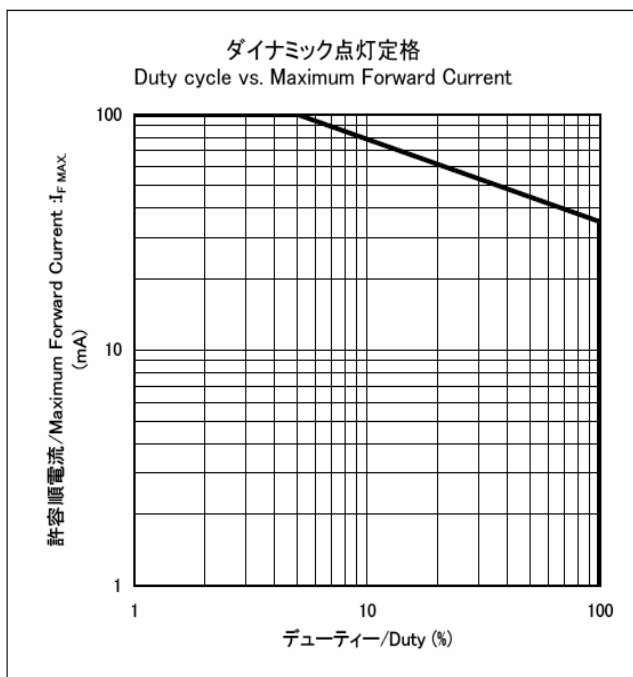
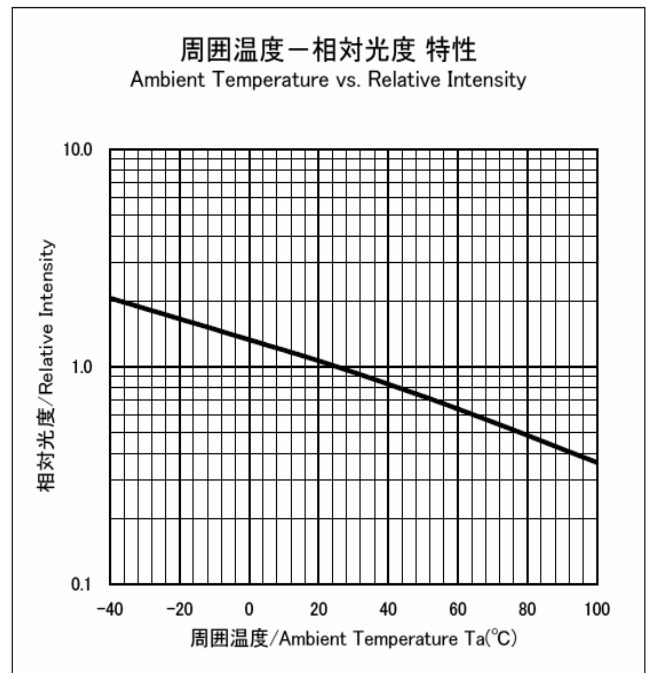
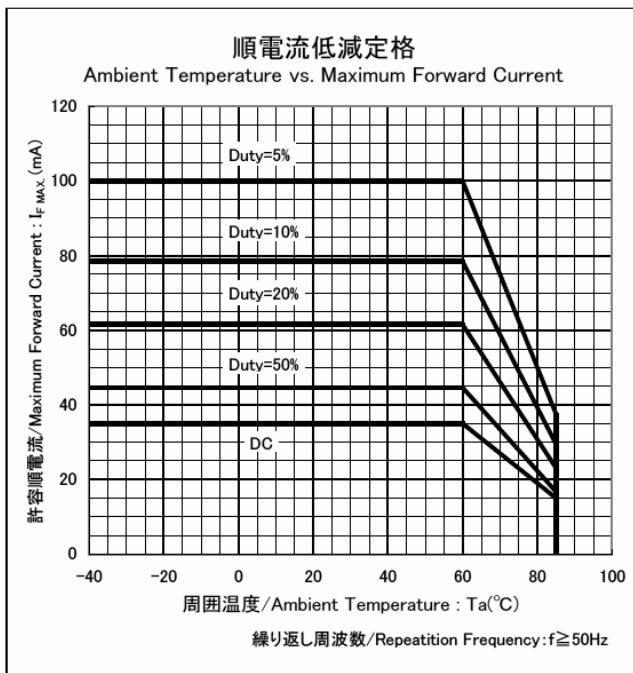
Technical Data(UG)



Technical Data(UV)



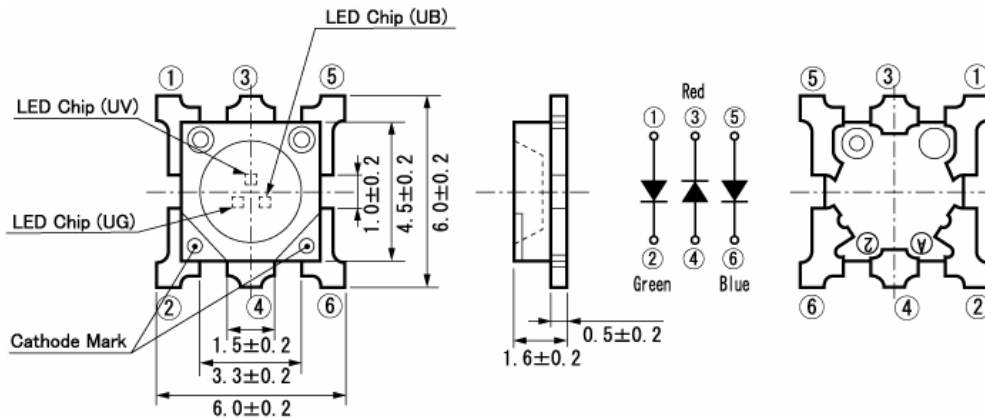
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Package Dimensions

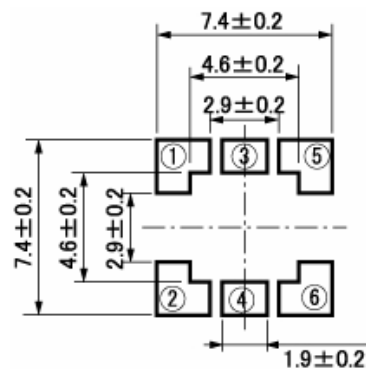
(Unit: mm)

Weight: (113.1)mg



Recommended Soldering Pattern

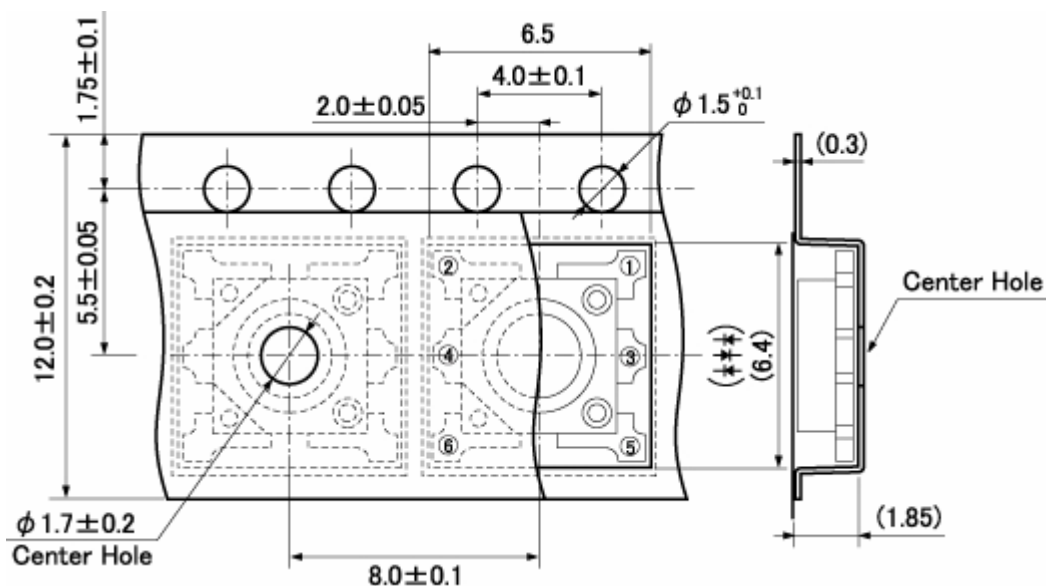
(Unit: mm)



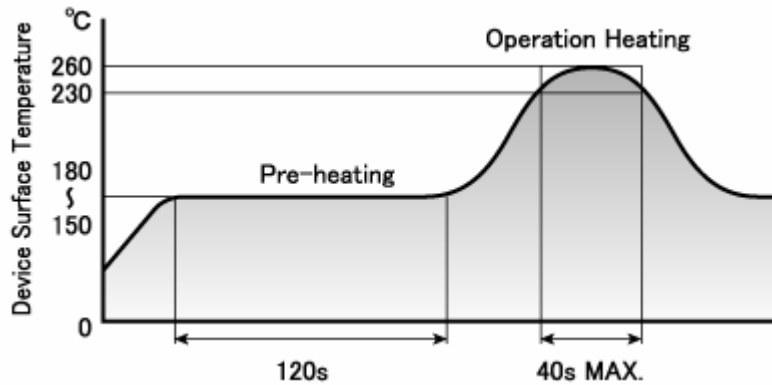
Taping Specification

(Unit: mm)

Quantity: 1,000pcs/ reel (standard)



Reflow Soldering Conditions



- 1) The above profile temperature gives the maximum temperature of the LED resin surface. Please set the temperature so as to avoid exceeding this range.
- 2) Total times of reflow soldering process shall be no more than 2 times. When the second reflow soldering process is performed, intervals between the first and second reflow should be short as possible (while allowing some time for the component to return to normal temperature after the first reflow) in order to prevent the LED from absorbing moisture.
- 3) Temperature fluctuation to the LED during the pre-heating process shall be minimized. (6°C maximum)

Manual Soldering Conditions

Iron tip temp.	350 °C	(MAX.)
Soldering time and frequency	3 s	(MAX.)
	1 time	(MAX.)

Please do not contact tip of iron to a terminal part directly.

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