



**Pb-free
HEAT**



URGB1308B

PLCC-6 Type Tri-color

Features

Package	PLCC-6 Type, Water Clear Resin
Product features	<ul style="list-style-type: none"> • Outer Dimension 3.0 x 3.5 x 1.9 mm(L x W x H) • Temperature range. Storage Temperature : -40℃~100℃ Operating Temperature : -40℃~85℃ • No lead package and lead-free soldering compatible • RoHS compliant
Dominant wavelength	Blue : 470nm (UB) Green : 530nm (UG) Red : 630nm (UR)
Spatial distribution	120 deg.
Die materials	UB,UG : InGaN, UR :AlGaInP
Rank grouping parameter	Sorted by luminous intensity and wavelength per rank taping
Assembly method	Auto pick & place machine (Auto Mounter)
Soldering methods	Reflow soldering and manual soldering
Taping and reel	2,000pcs per reel in a 8mm width tape. (Standard) Reel diameter: ϕ 180mm
ESD	1kV (HBM)

Recommended Applications

Amusement Equipment, OA/FA, Other General Applications

Color Variations and Luminous Intensity

(T_a=25°C)

Part No.	Die Name	Material	Emitted Color	Lens Color	Dominant Wavelength λ_d (nm)		Luminous Intensity I_v (mcd)		
					TYP.	I _F	MIN.	TYP.	I _F
URGB1308B	UB	InGaN	Blue	Water Clear	470	20	50	125	20
	UG	InGaN	Green		530	20	200	500	20
	UR	AlGaInP	Red		630	20	140	350	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	UR	
Power Dissipation	P _d	84	84	87	mW
Forward Current	I _F	20	20	30	mA
Pulse Forward Current ^{※1}	I _{FRM}	100	100	100	mA
Derating (T _a =60°C or higher)	ΔI _F	0.50	0.50	0.75	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 I_{FRM} Measurement condition : Pulse Width ≤ 1ms., Duty ≤ 1/20.

※ The ratings specified above is under the condition that only one diode is lit.

50% Max. of each rating shall be applied when two diodes are lit simultaneously.

30% Max. of each rating shall be applied when all three diodes are lit simultaneously.

Electro-Optical Characteristics (UB,UG,UR)

 (T_a=25°C)

Item	Conditions	Symbol	Characteristics			Unit	
			UB	UG	UR		
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	641	nm
Dominant Wavelength	I _F =20mA	λ _d	TYP.	470	530	630	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.

※Note: The dominant wavelength (λ_d) above is the setup value of the sorting machine.
 (Tolerance: λ_d ...± 2nm)

Luminous Intensity Rank
(T_a=25°C)

Intensity Tolerance each Rank : +/- 15%

Rank	I _v (mcd)					
	UB		UG		UR	
	I _F =20mA					
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
A	50	100	200	400	140	350
B	100	200				
C	200					
D	50	100	400	800		
E	100	200				
F	200					
G	50	100	800			
H	100	200				
J	200					
K	50	100	200	400	350	
L	100	200				
M	200					
N	50	100	400	800		
P	100	200				
Q	200					
R	50	100	800			
S	100	200				
T	200					



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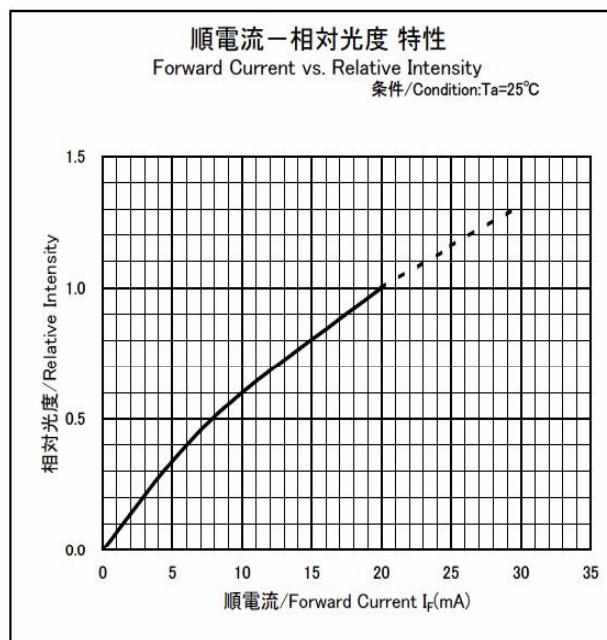
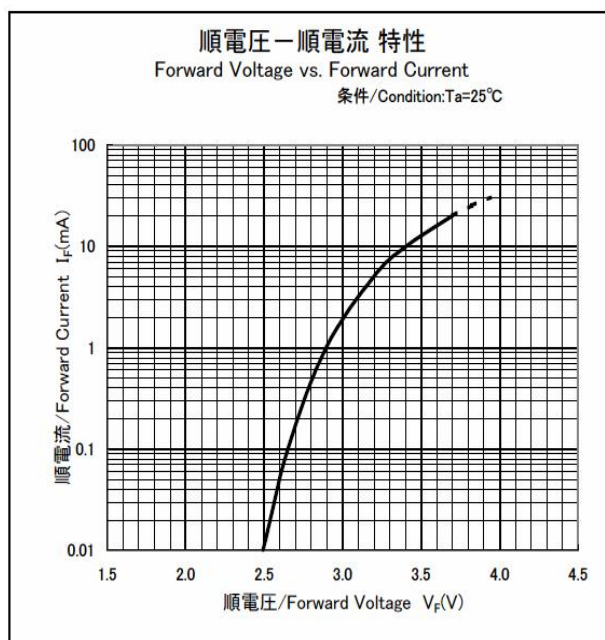
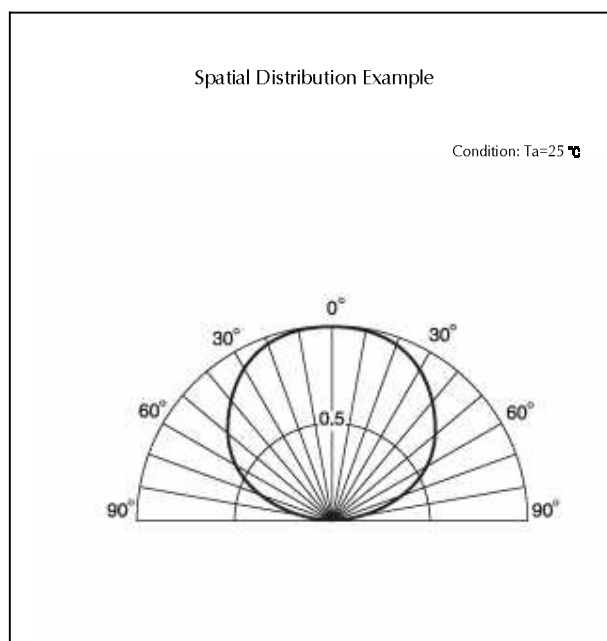
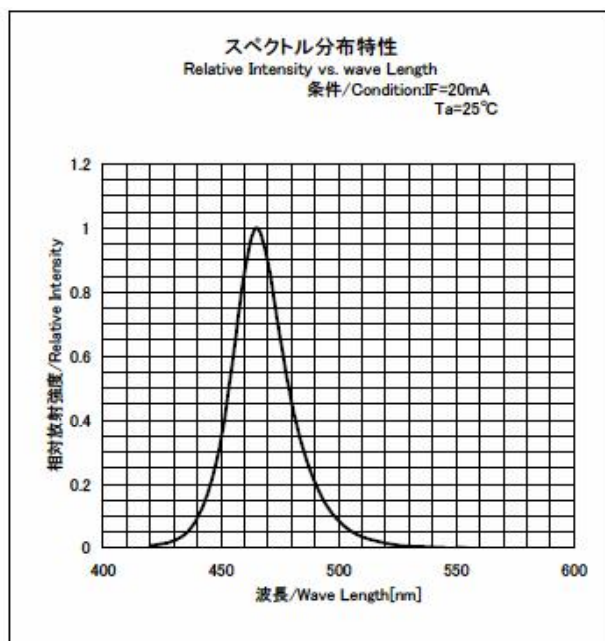
Color Tone Groups (λd)

(T=25°C)

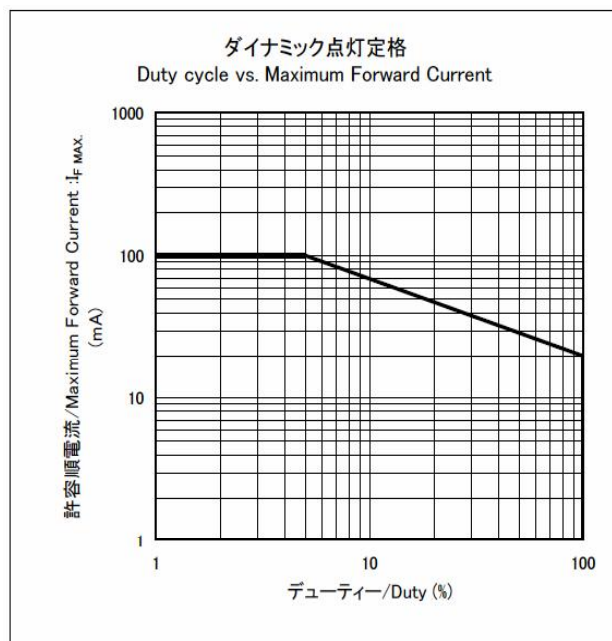
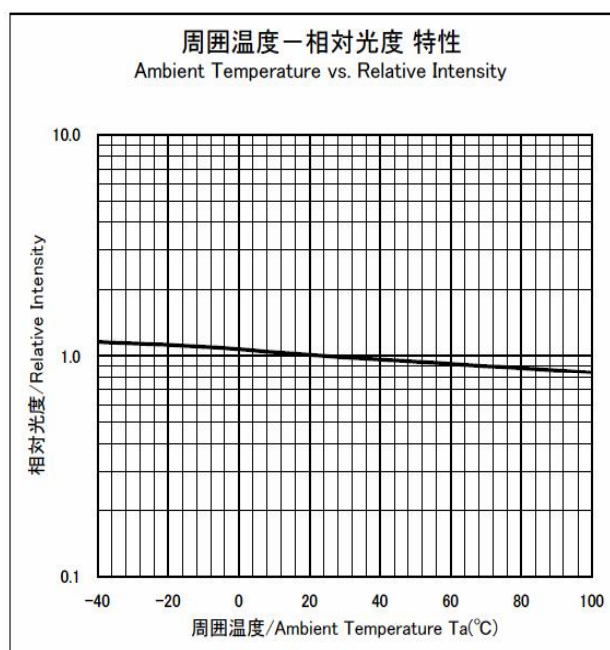
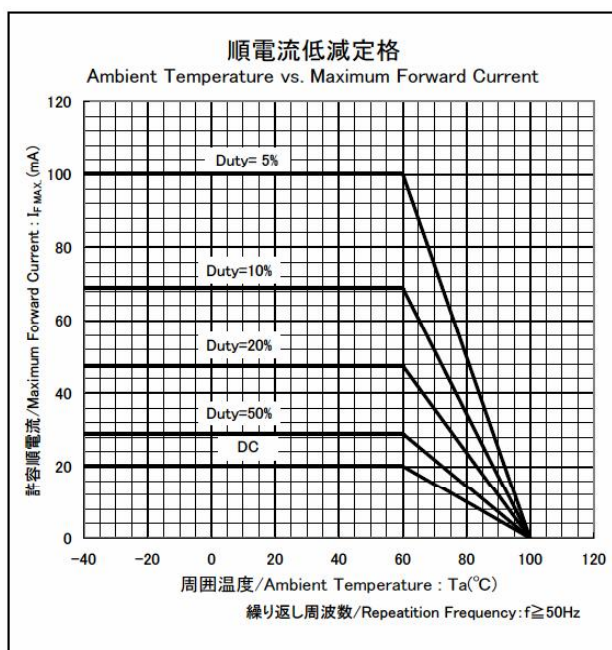
Tolerance: +/- 2nm

Rank	Dominant Wave Length λd (nm)					
	UB		UG		UR	
	I _F =20mA					
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
A	460	480	515	540	618	638

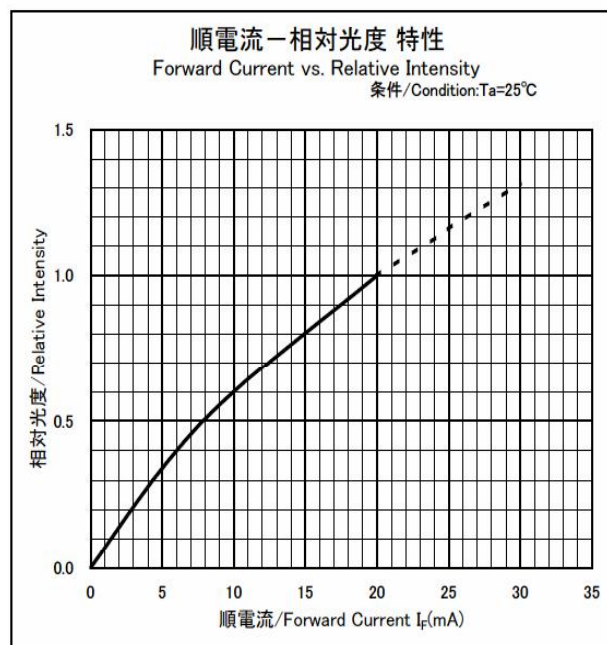
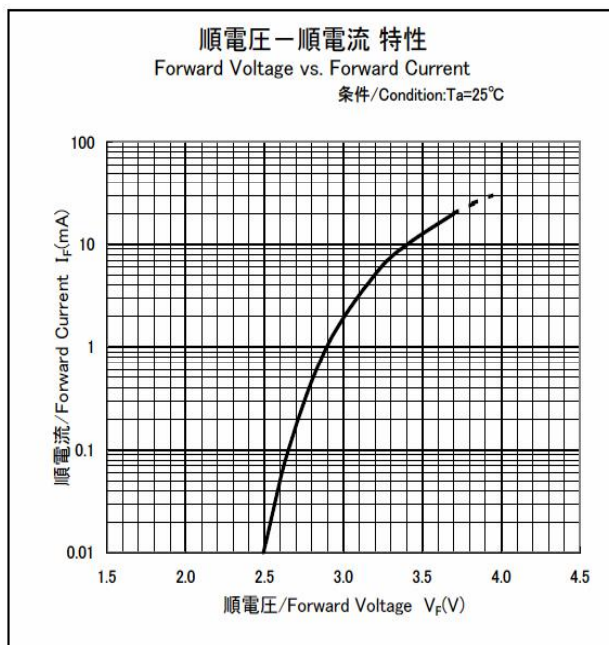
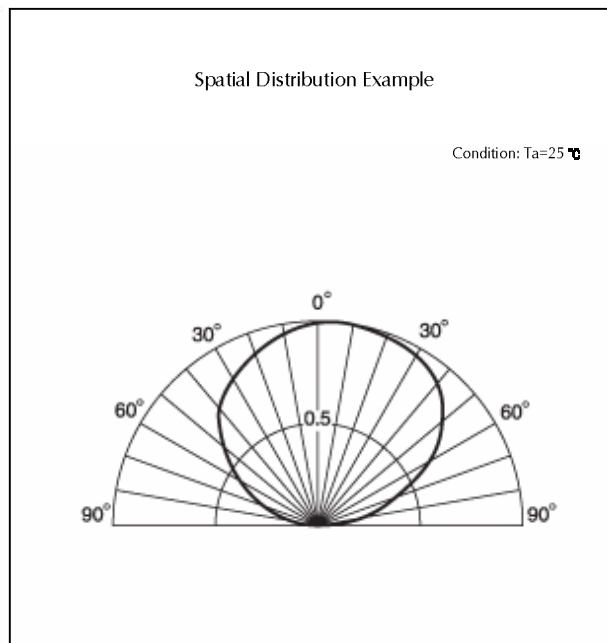
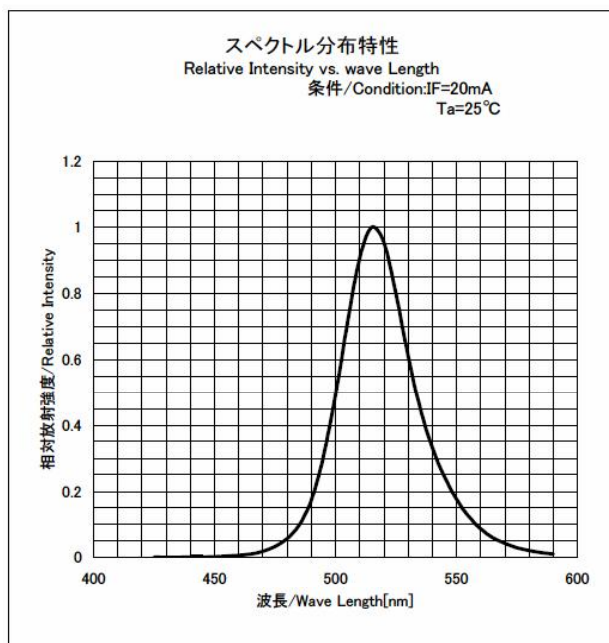
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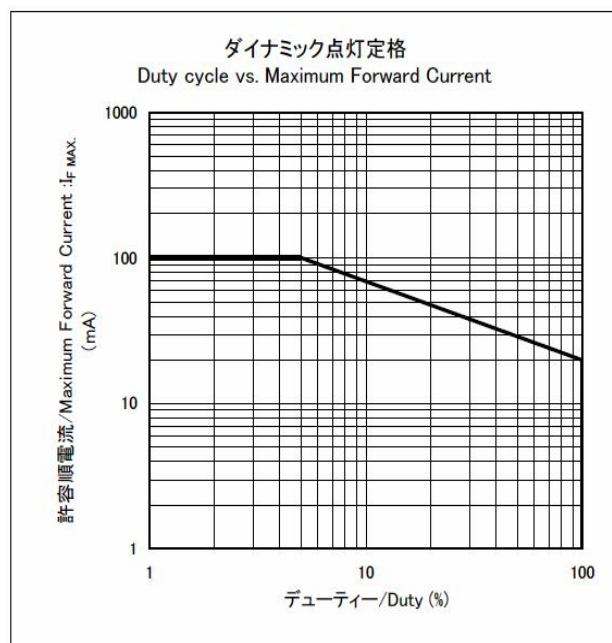
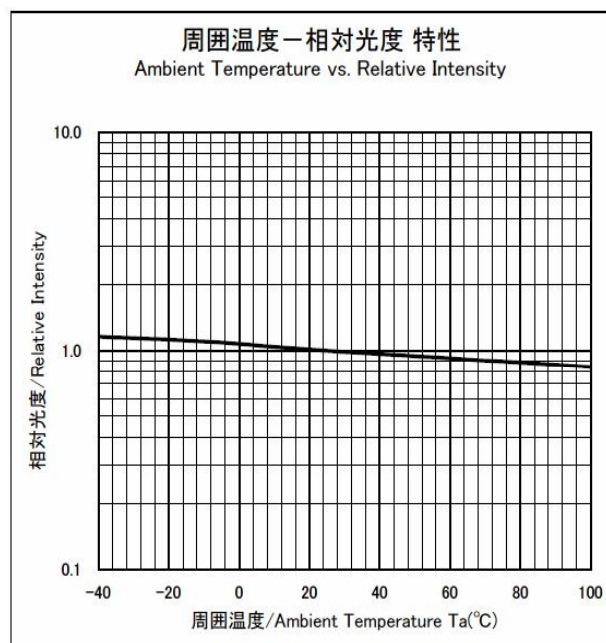
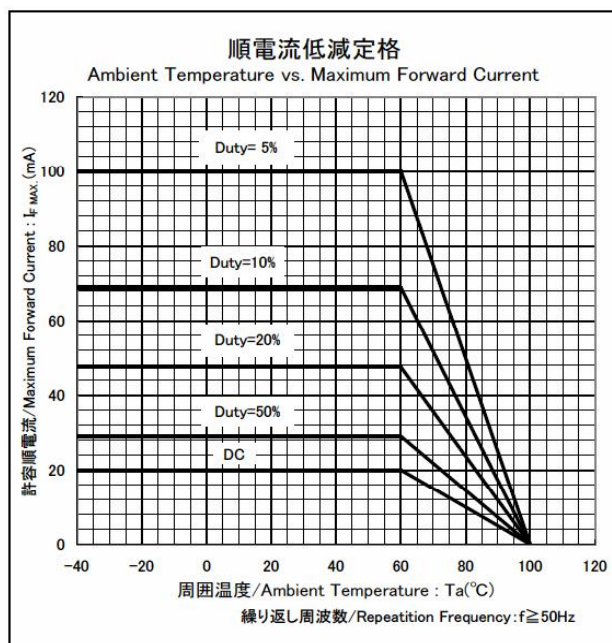
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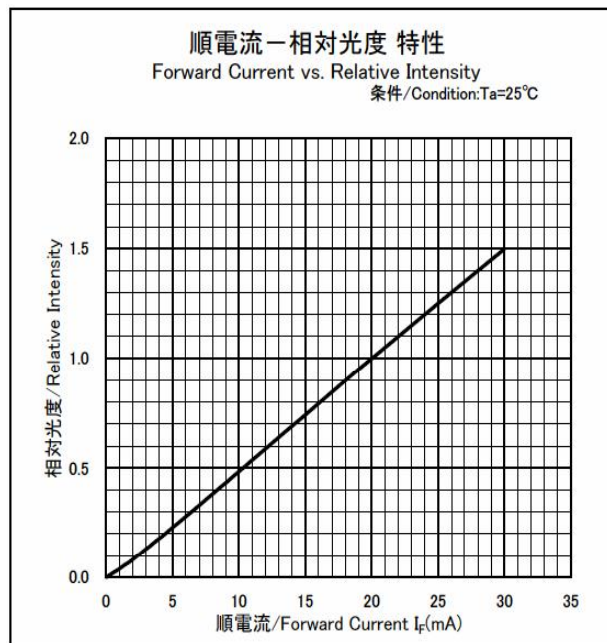
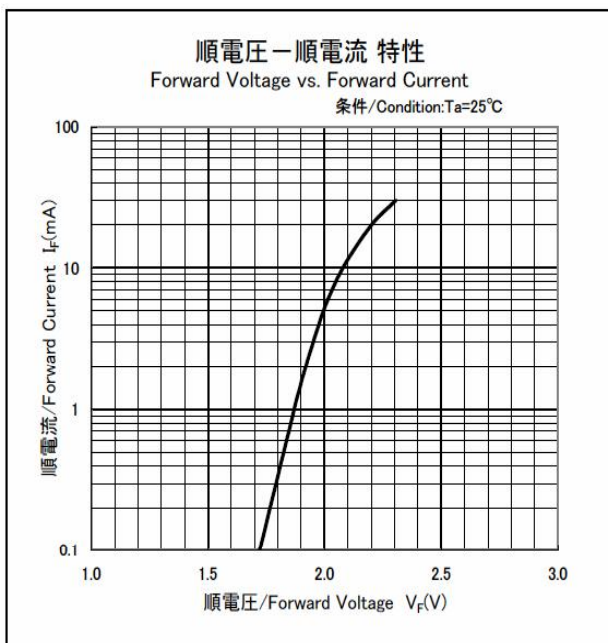
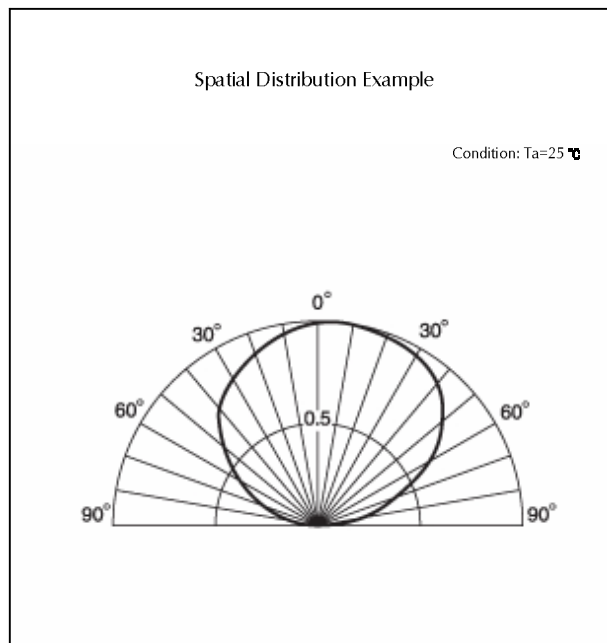
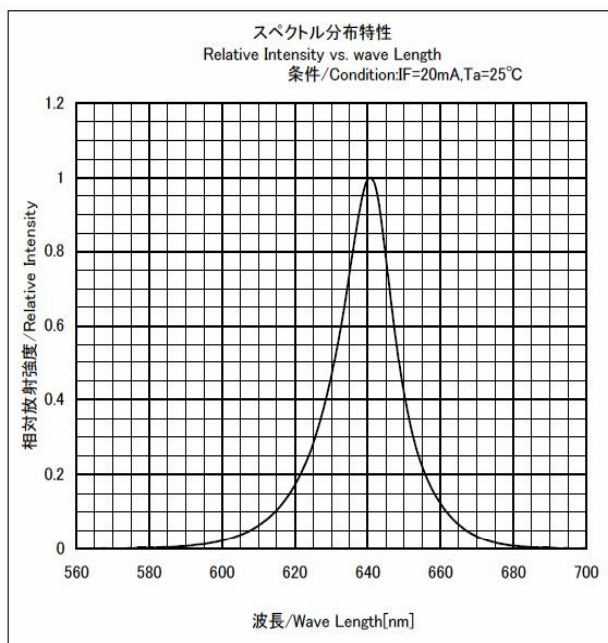
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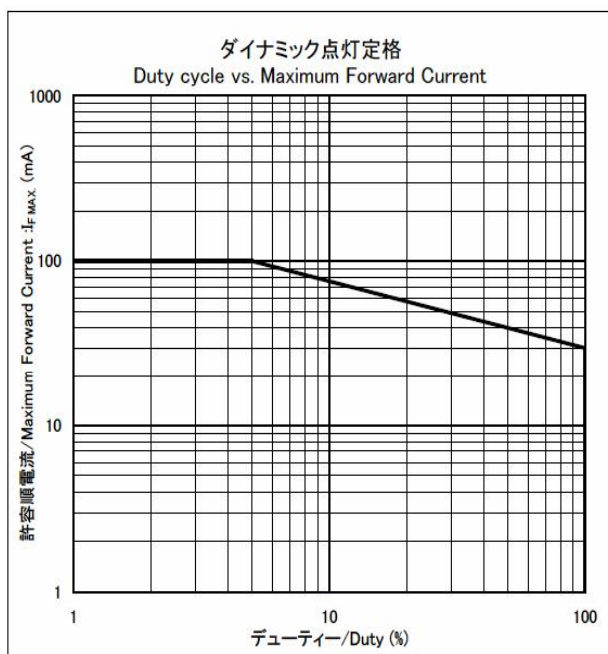
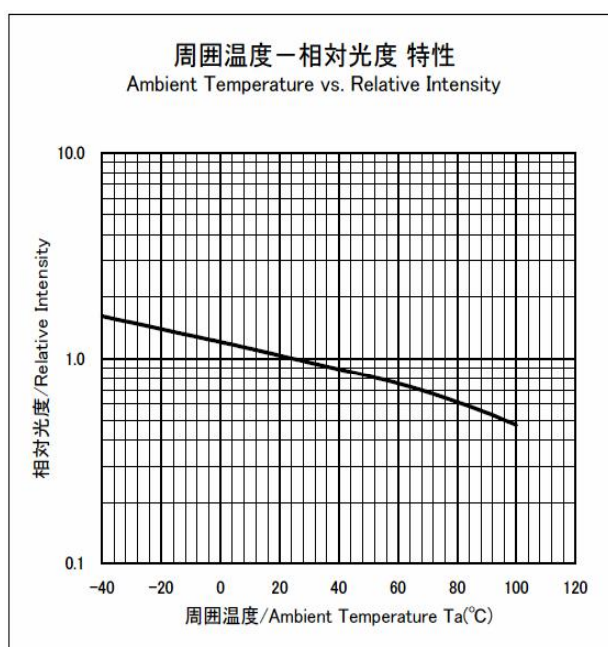
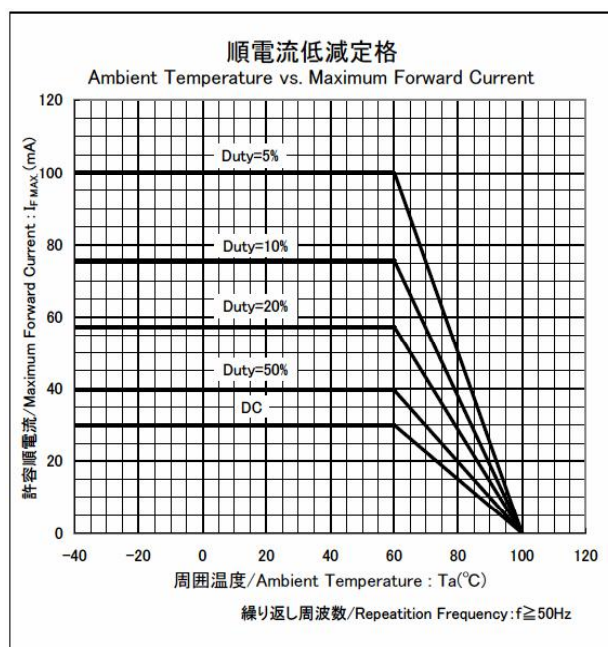
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Technical Data(UR)



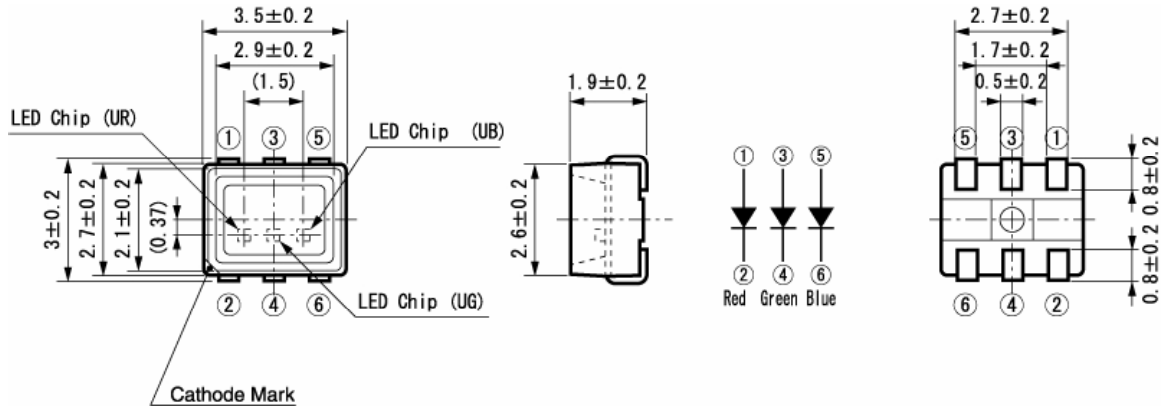
Technical Data(UR)



Package Dimensions

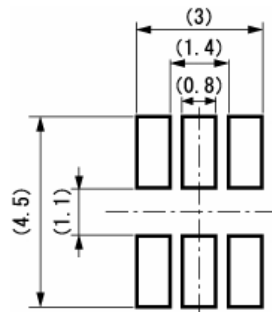
(Unit: mm)

Weight: (35.0)mg



Recommended Soldering Pattern

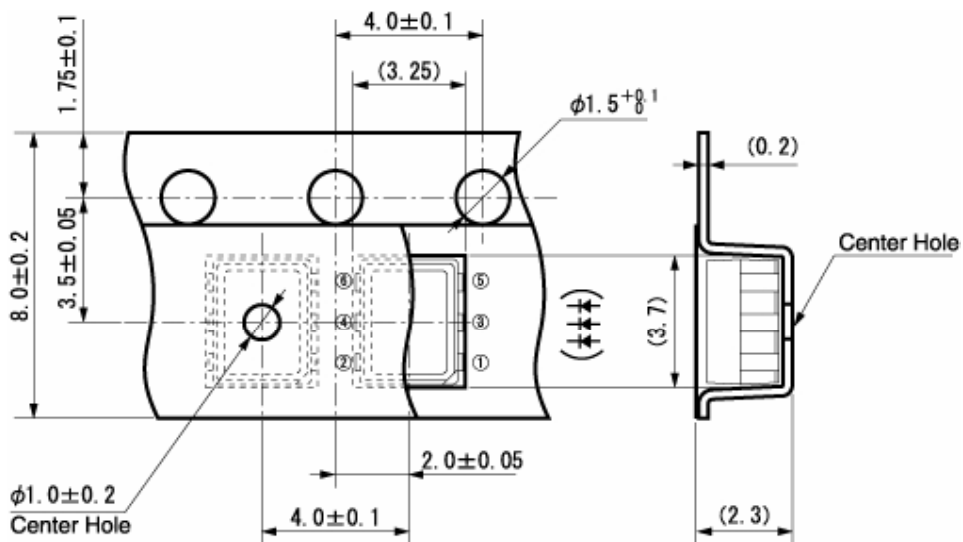
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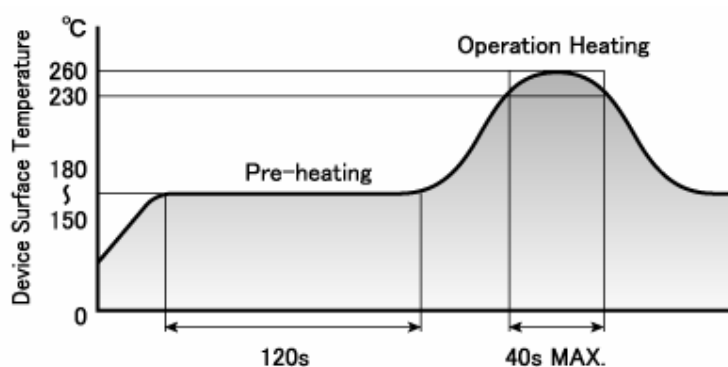
Taping Specification

(Unit: mm)

Quantity: 2,000pcs/ 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.)

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