



**Pb-free
HEAT**

STANLEY

U□1107B Series

Single Color Ultra High Brightness Type

Features

Package	PLCC-4 Type, Water clear resin
Product features	<ul style="list-style-type: none"> • Outer Dimension 3.5 x 2.8 x 1.9mm (L x W x H) • Temperature range Storage Temperature : -40°C~110°C Operating Temperature : -40°C~100°C • Lead-free soldering compatible • RoHS compliant
Dominant wavelength	Blue : 469nm(UB) Green : 528nm(UG)
Half Intensity Angle	120 deg.
Die materials	UB,UG : InGaN
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	Less than 1kV(HBM)

Recommended Applications

Amusement Equipment, Electric Household Appliances, Other General Applications

Color and Luminous Intensity

(Ta=25°C)

Part No.	Material	Emitted Color	Lens Color	Dominant Wavelength		Luminous Intensity		
				λ_d (nm)		Iv (mcd)		
				TYP.	I _F	MIN.	TYP.	I _F
UB1107B	InGaN	Blue	Water Clear	469	30	112	200	30
UG1107B	InGaN	Green		528	30	355	700	30

Absolute Maximum Ratings

(Ta=25°C)

Item	Symbol	Absolute Maximum Ratings		Unit
		UB	UG	
Power Dissipation	P_d	135	135	mW
Forward Current	I_F	30	30	mA
Pulse Forward Current ※1	I_{FRM}	100	100	mA
Derating (Ta=67.5°C or higher)	ΔI_F	0.57	0.57	mA/°C
	ΔI_{FRM}	1.91	1.91	mA/°C
Reverse Voltage	V_R	5	5	V
Operating Temperature	T_{opr}	-40~+100		°C
Storage Temperature	T_{stg}	-40~+110		°C

 ※1 I_{FRM} Measurement condition : Pulse Width $\leq 1ms.$, Duty $\leq 1/10$.

Electro-Optical Characteristics

(Ta=25°C)

Item	Conditions	Symbol	Characteristics		Unit	
			UB	UG		
Forward Voltage	I _F =30mA	V _F	TYP.	3.9	4.0	V
			MAX.	4.5	4.5	
Reverse Current	V _R =5V	I _R	MAX.	100	100	μ A
Peak Wavelength	I _F =30mA	λ _p	TYP.	465	522	nm
Dominant Wavelength	I _F =30mA	λ _d	TYP.	469	528	nm
Spectral Line Half Width	I _F =30mA	Δλ	TYP.	24	36	nm
Half Intensity Angle	I _F =30mA	2θ 1/2	TYP.	120	120	deg.

Luminous Intensity Rank

(Ta=25°C)

Intensity Tolerance each Rank : +/- 11%

Rank	I _v (mcd)			
	UB		UG	
	I _F =30mA		I _F =30mA	
	MIN.	MAX.	MIN.	MAX.
A	112	140	355	450
B	140	180	450	560
C	180	224	560	710
D	224	280	710	900
E	280	355	900	1120
F	355	450	1120	1400

Please contact our sales staff concerning rank designation.

Color Tone Groups (λd)

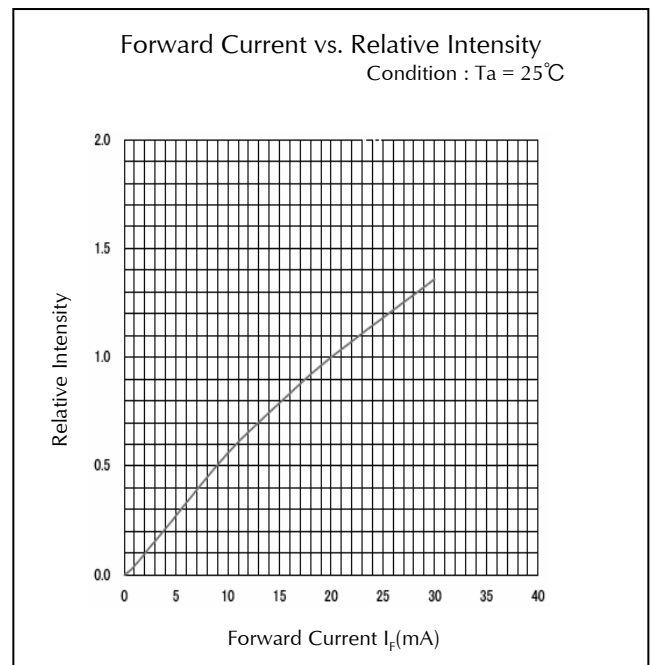
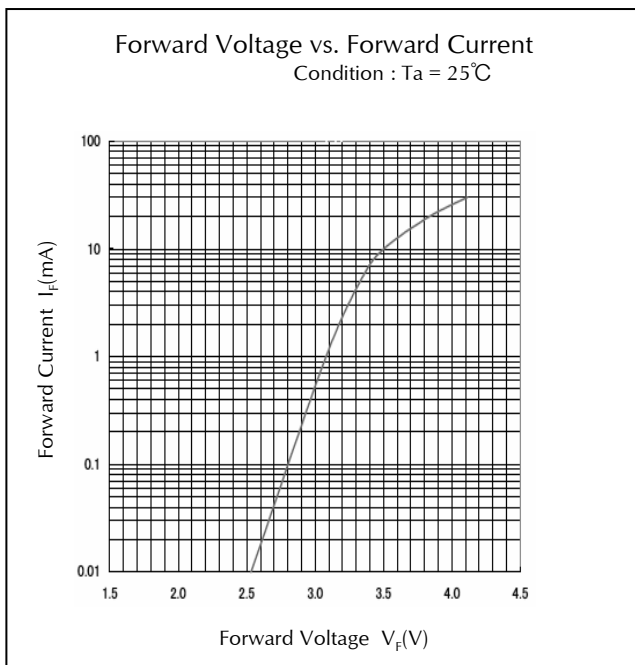
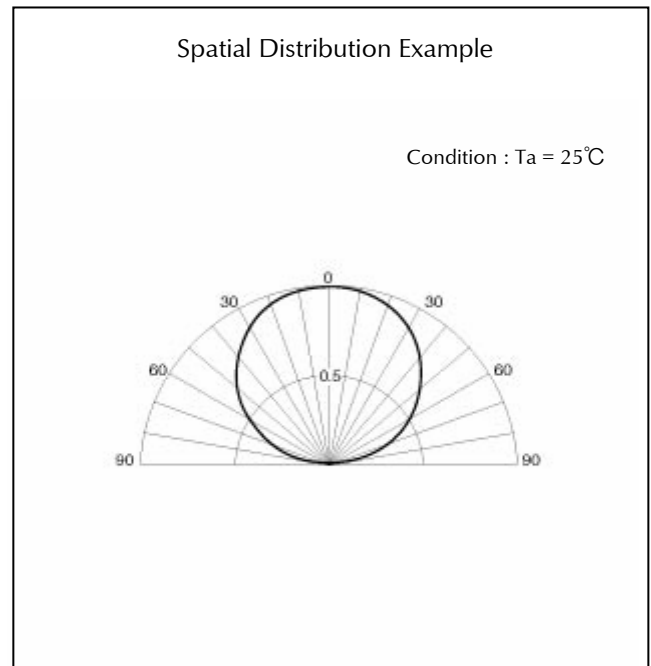
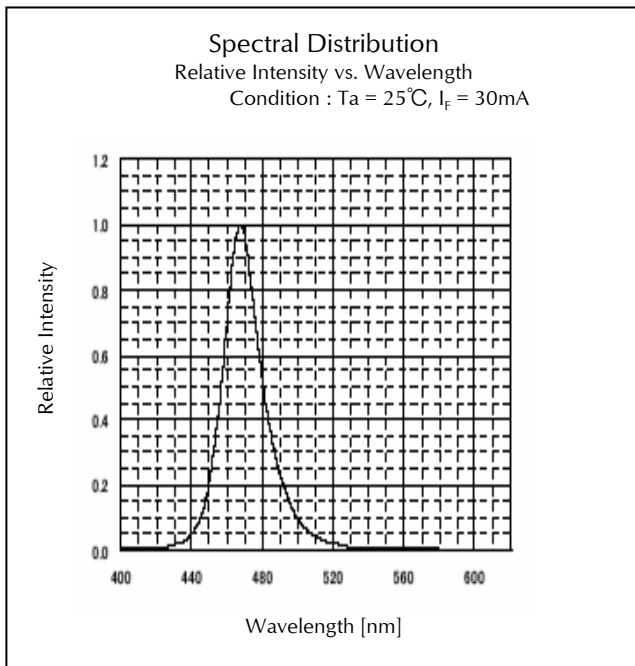
(Ta=25°C)

Tolerance: +/-1nm

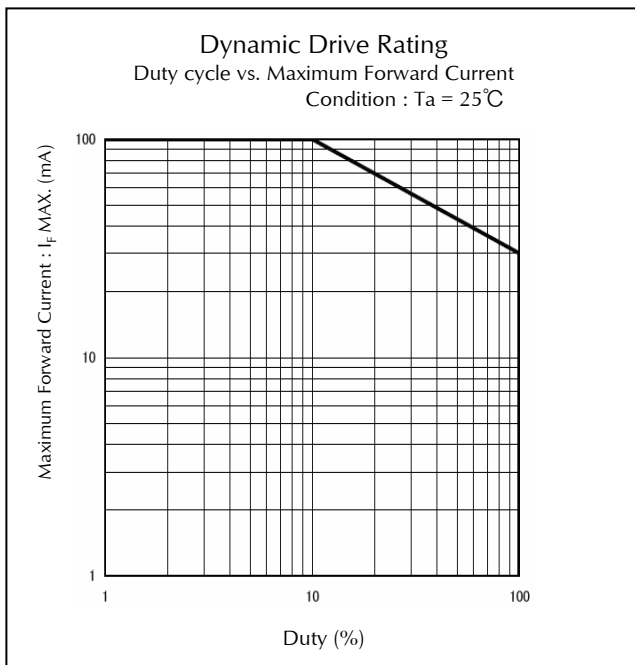
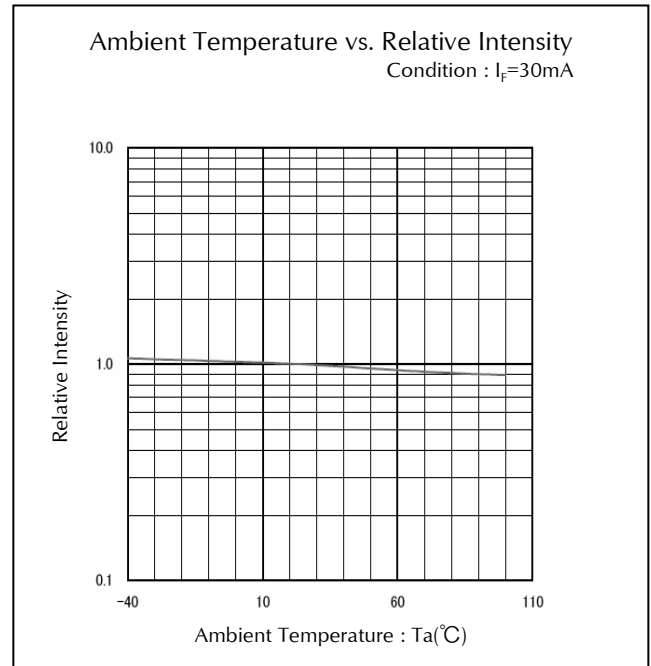
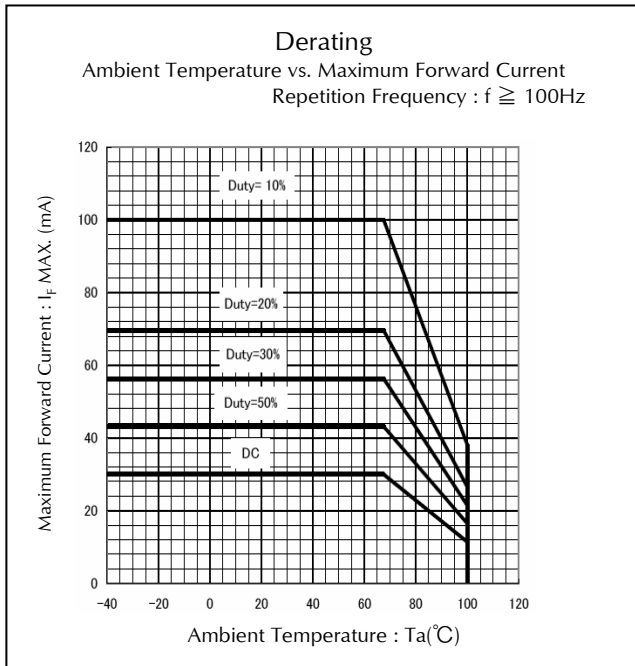
Rank	Dominant Wavelength λd (nm)			
	UB		UG	
	I _F =30mA		I _F =30mA	
	MIN.	MAX.	MIN.	MAX.
A	460	465	515	520
B	465	470	520	525
C	470	475	525	530
D	475	480	530	535
E			535	540

Please contact our sales staff concerning rank designation.

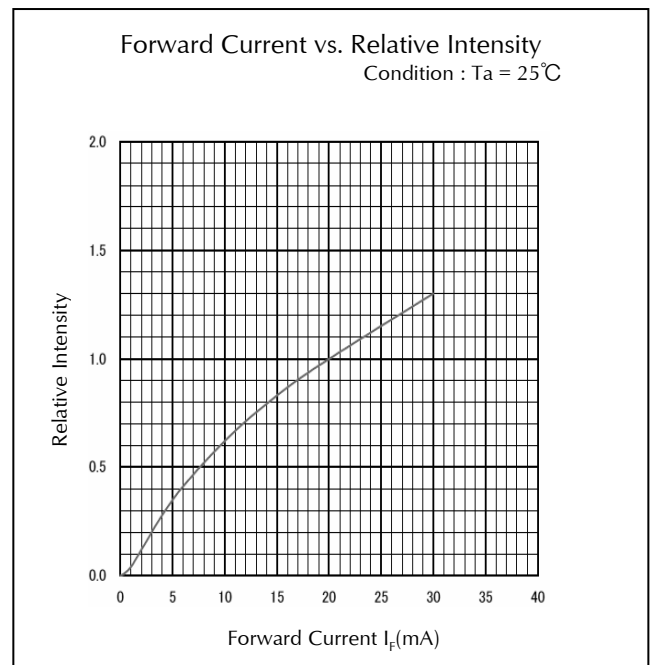
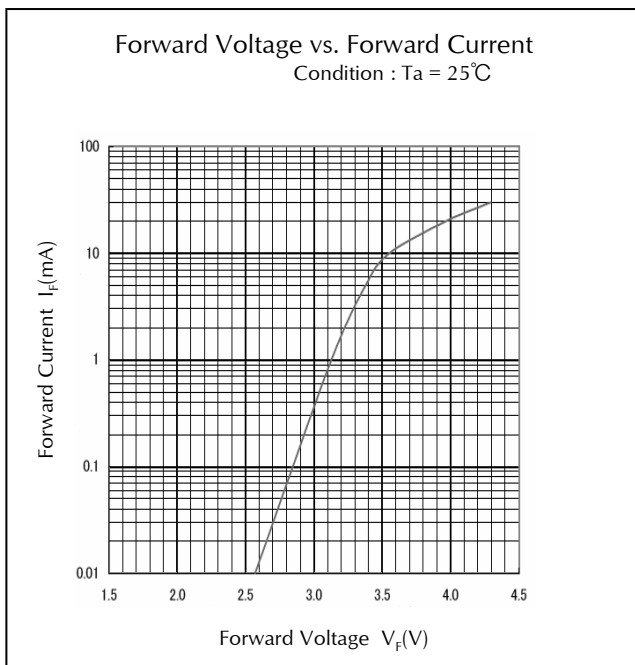
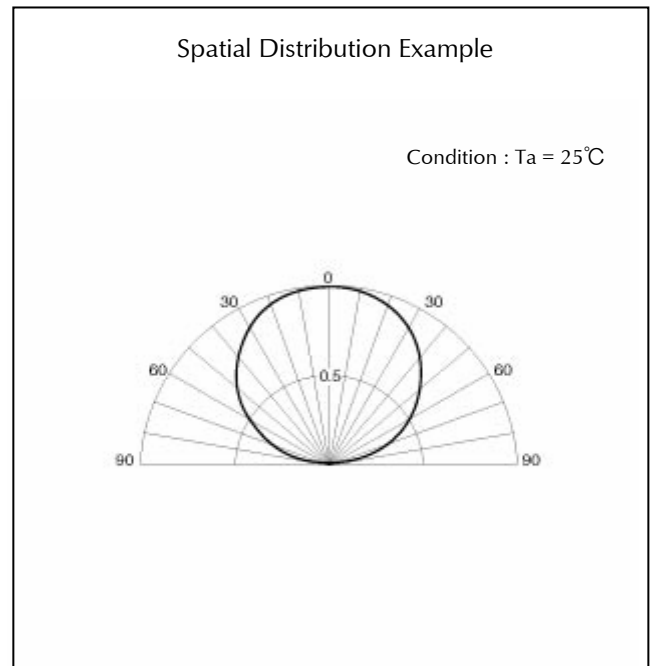
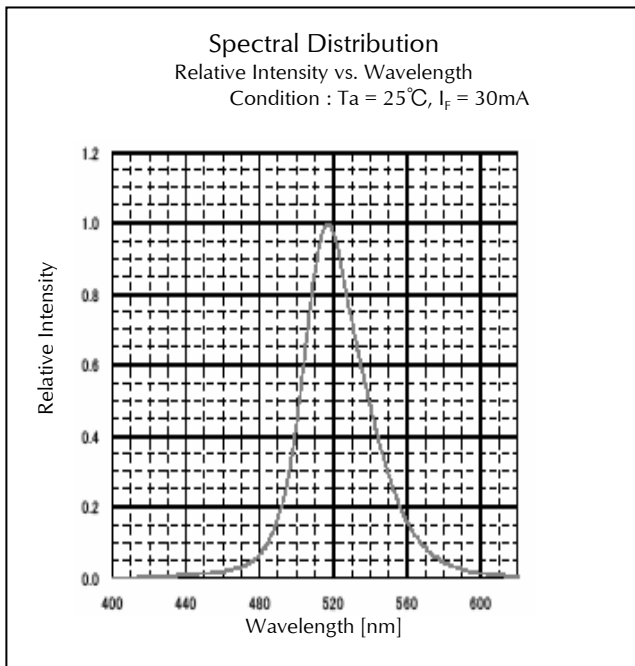
Technical Data(UB)



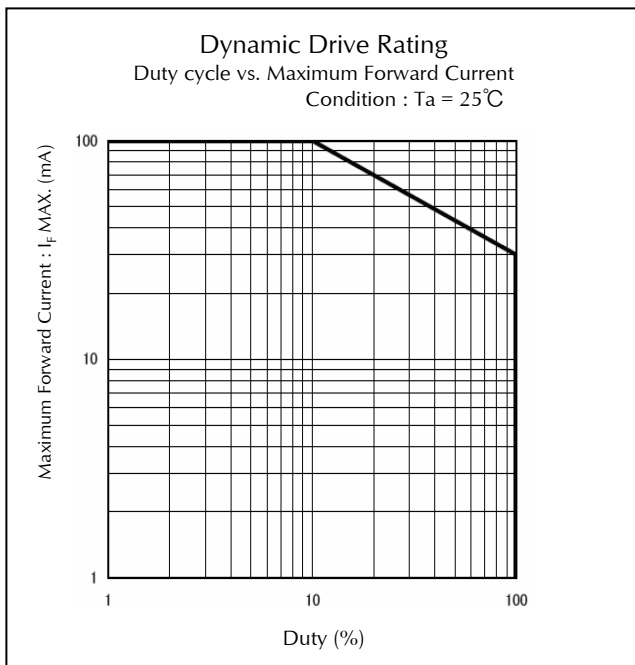
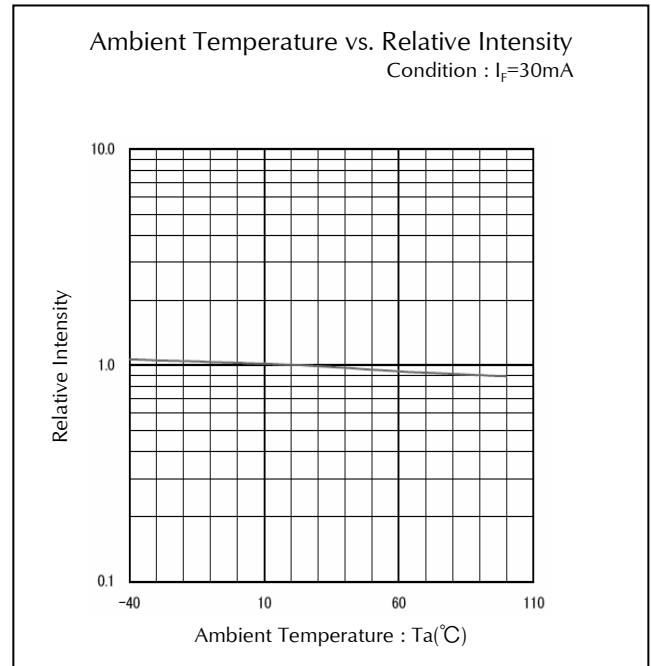
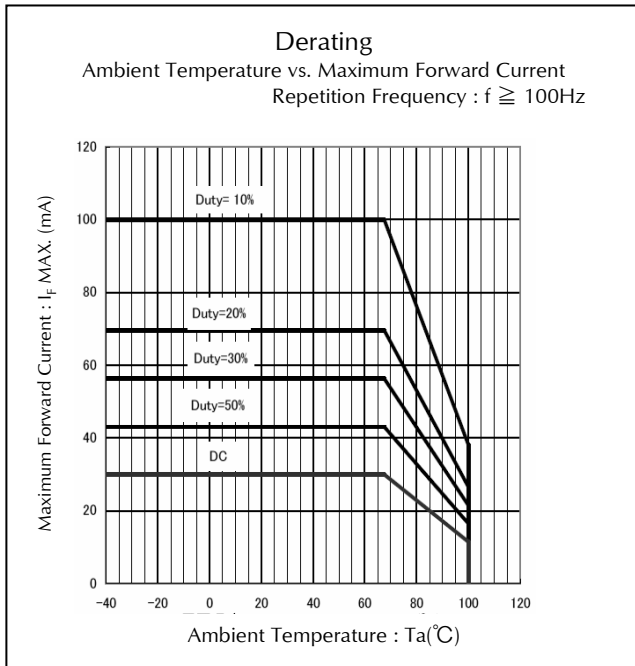
Technical Data(UB)



Technical Data(UG)



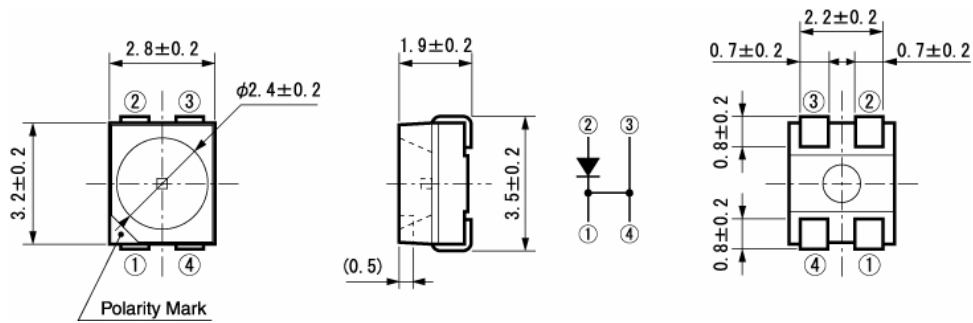
Technical Data(UG)



Package Dimensions

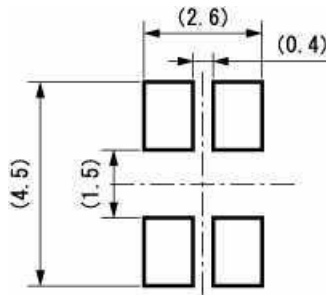
(Unit: mm)

Weight: (36.5)mg



Recommended Soldering Pattern

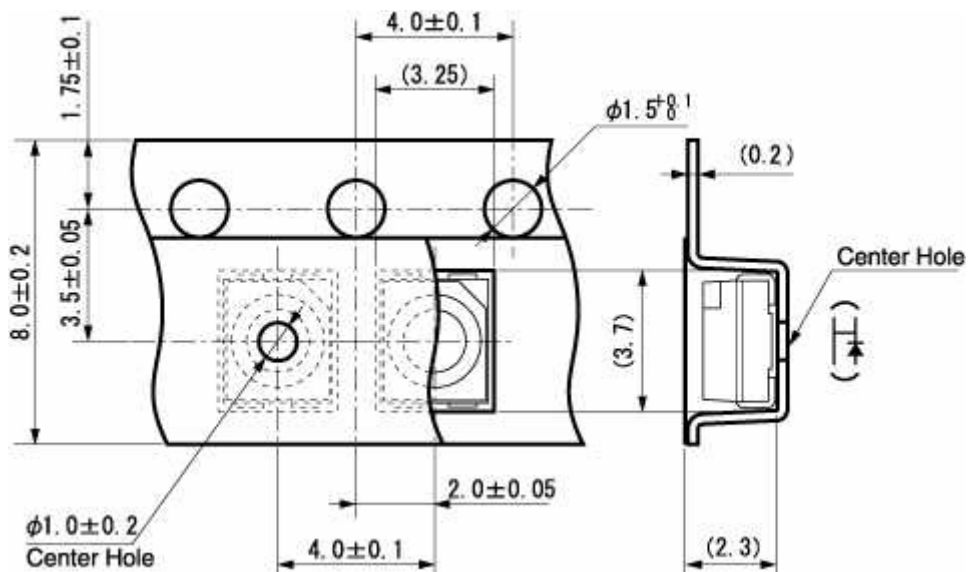
(Unit: mm)



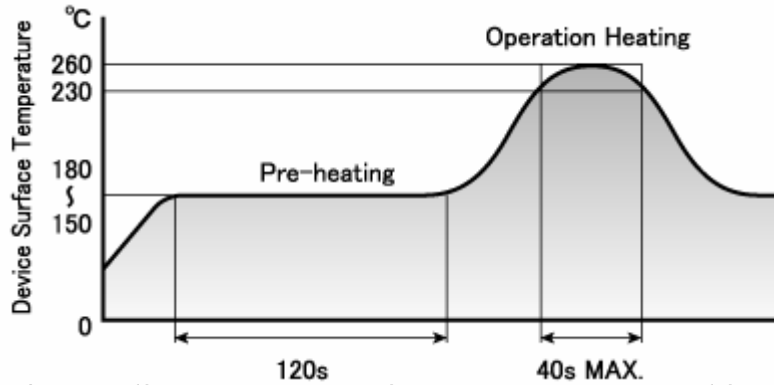
Taping Specification

(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.)

Reliability Testing Result

Reliability Testing Result	Applicable Standard	Testing Conditions	Duration	Failure
Room Temp. Operating Life	EIAJ ED-4701/100(101)	Ta = 25°C, If = Maximum Rated Current	1,000 h	0/25
Resistance to Soldering Heat	EIAJ ED-4701/300(302)	260±5°C	5sec	0/25
Temperature Cycling	EIAJ ED-4701/100(105)	Minimum Rated Storage Temperature(30min) ~Normal Temperature(15min) ~Maximum Rated Storage Temperature(30min) ~Normal Temperature(15min)	200 cycles	0/25
High Temp. Operating Life	EIAJ ED-4701/100(101)	Ta = 100°C, If = 10mA	1,000 h	0/25
Humidity Temp. Operating Life	EIAJ ED-4701/100(102)	Ta = 60±2°C, RH = 90±5%, If = 30mA	1,000 h	0/25
High Temp. Storage Life	EIAJ ED-4701/200(201)	Ta = Maximum Rated Storage Temperature	1,000 h	0/25
Low Temp. Storage Life	EIAJ ED-4701/200(202)	Ta = Minimum Rated Storage Temperature	1,000 h	0/25
Vibration, Variable Frequency	EIAJ ED-4701/400(403)	98.1m/s ² (10G), 100 ~ 2KHz sweep for 20min., XYZ each direction	2 h	0/10

Failure Criteria

Items	Symbols	Conditions	Failure criteria
Luminous Intensity	Iv	If Value of each product Luminous Intensity	Testing Min. Value < Spec. Min. Value x 0.5
Forward Voltage	V _F	If Value of each product Forward Voltage	Testing Max. Value ≥ Spec. Max. Value x 1.2
Reverse Current	I _R	V _R = Maximum Rated Reverse Voltage V	Testing Max. Value ≥ Spec. Max. Value x 2.5
Cosmetic Appearance	-	-	No notable, decoloration, deformation and cracking

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