





Drawing No.	*Rev.	Date	Page
CBL0805A-ZRN-020mA	A	2023/02/20	1/10

# APPROVAL SHEET

Part No:

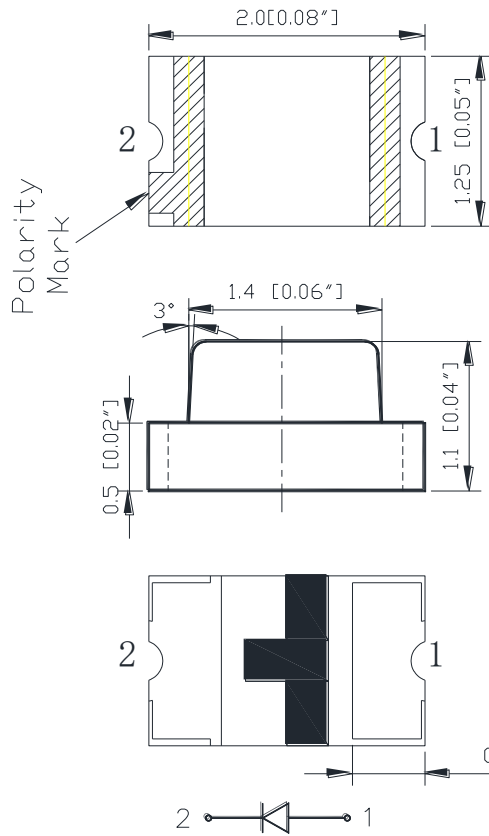
CBL0805A-ZRN-020mA

NOTE :  
**Green Part**

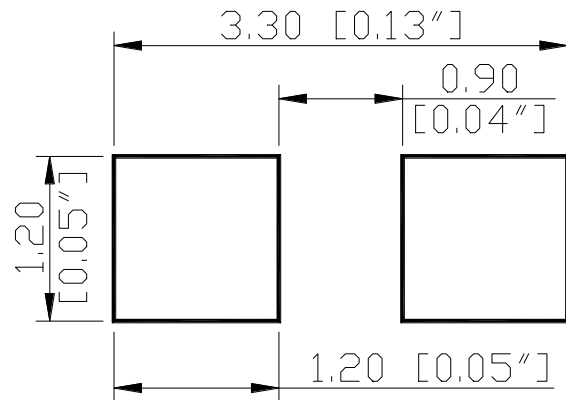
MAKER			CUSTOMER	
				
R&D	QA	Sales	Checked	Approved
				


Prepared	Checked	Approved
Rachel Lee	Sky Lin	Kenneth Wu

## Package outlines



### RECOMMEND PAD LAYOUT





**ATTENTION**  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
SENSITIVE DEVICES

ITEM	MATERIALS
Resin (mold)	Epoxy
Lens color	Water transparent
Dice	AlGaInP/GaAs
Emitted color	Red

### NOTES:

- All dimensions are in millimeters (inches);
- Tolerances are  $\pm 0.1\text{mm}$  (0.004inch) unless otherwise noted.

### Absolute maximum ratings

( $T_A=25^{\circ}\text{C}$ )

Parameter	Symbol	Value	Unit
Forward current	$I_f$	30	mA
Reverse voltage	$V_r$	5	V
Power dissipation	$P_d$	75	mW
Operating temperature range	$T_{op}$	-40 ~+80	$^{\circ}\text{C}$
Storage temperature range	$T_{stg}$	-40 ~+85	$^{\circ}\text{C}$
Peak pulsing current (1/8 duty f=1kHz)	$I_{fp}$	125	mA

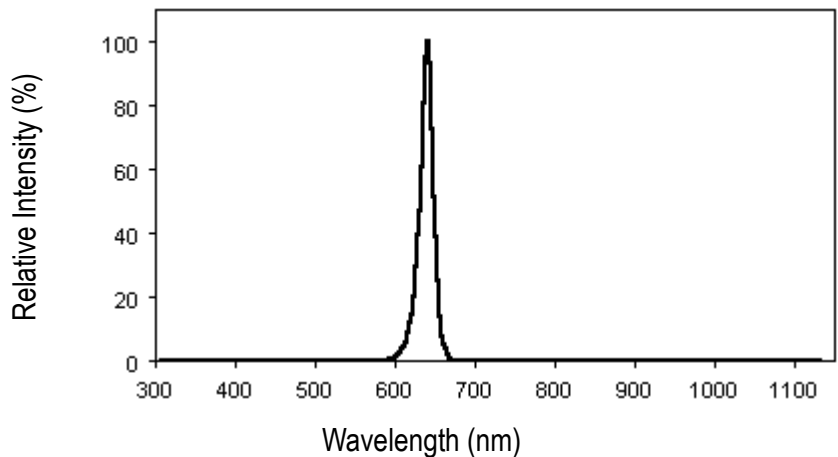
### Electro-optical characteristics

( $T_A=25^{\circ}\text{C}$ )

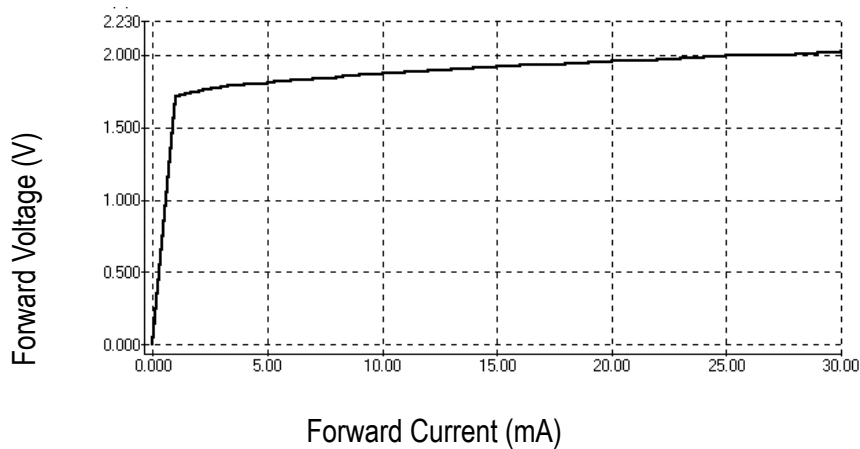
Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Wavelength at peak emission	$I_f=20\text{mA}$	$\lambda_{\text{peak}}$	-	640	-	nm
Spectral half bandwidth	$I_f=20\text{mA}$	$\Delta\lambda$	-	18	-	nm
Dominant wavelength	$I_f=20\text{mA}$	$\lambda_{\text{dom}}$	625	630	635	nm
Forward voltage	$I_f=20\text{mA}$	$V_f$	1.7	2.0	2.5	V
Luminous intensity	$I_f=20\text{mA}$	$I_v$	50	110	200	mcd
Viewing angle at 50% $I_v$	$I_f=10\text{mA}$	$2\theta_{1/2}$	-	140	-	Deg
Reverse current	$V_r=5\text{V}$	$I_r$	-	-	10	$\mu\text{A}$

# OPTICAL CHARACTERISTIC CURVES

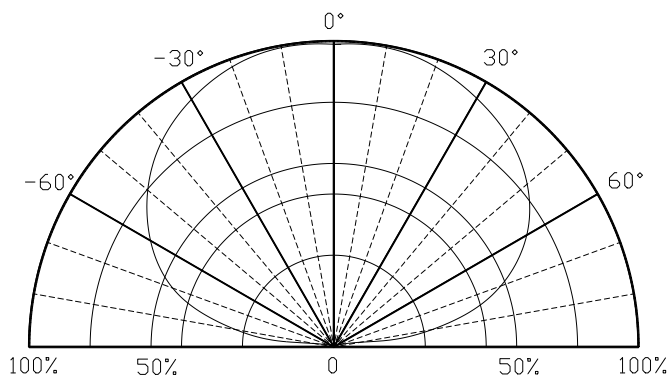
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage

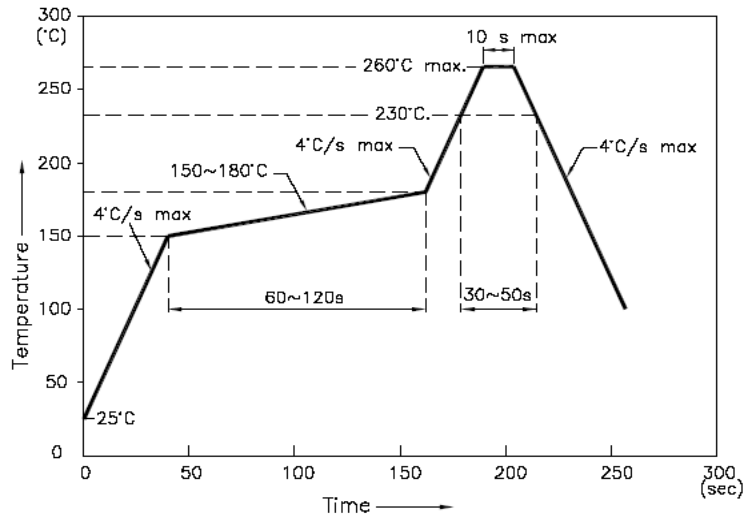


Directive Characteristics



## Reflow Profile

### ■ Reflow Temp/Time



### NOTES:

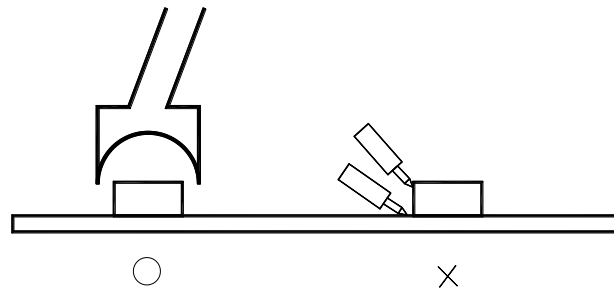
1. We recommend the reflow temperature  $245^{\circ}\text{C} (\pm 5^{\circ}\text{C})$ . the maximum soldering temperature should be limited to  $260^{\circ}\text{C}$ .
2. dont cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

### ■ Soldering iron

Basic spec is  $\leq 5\text{sec}$  when  $260^{\circ}\text{C}$ . If temperature is higher, time should be shorter ( $+10^{\circ}\text{C} \rightarrow -1\text{sec}$ ). Power dissipation of iron should be smaller than 20W, and temperatures should be controllable. Surface temperature of the device should be under  $230^{\circ}\text{C}$ .

### ■ Rework

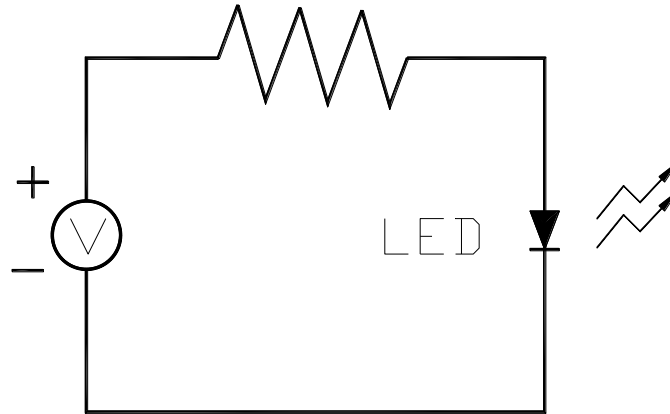
1. Customer must finish rework within 5 sec under  $260^{\circ}\text{C}$ .
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.



■ Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow 、 solder etc.

## Test circuit and handling precautions

### ■ Test circuit



### ■ Handling precautions

#### 1. Over-current-proof

Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Shelf life in sealed bag: 12 month at  $5^{\circ}\text{C}\sim 30^{\circ}\text{C}$  and  $< 60\%$  R.H;

3. After the package is Opened:

3.1. It is recommended to baking before the first use:

Baking condition:

a.  $60\pm 5^{\circ}\text{C}$  x (24~48hrs) and  $< 5\%$  RH, taped reel type ;

b.  $110\pm 5^{\circ}\text{C}$  x (8~16hr), bulk type ;

3.2. The products should be used within a week and to be stored at  $\leq 20\%$  R.H. with zip-lock sealed:

a. Baking is required before soldering when the pack is unsealed after 24hrs ;

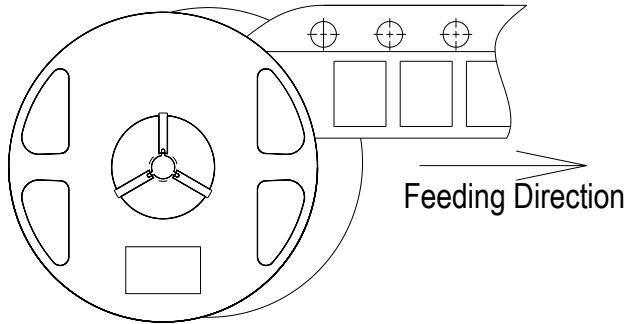
b. Baking condition as 3.1 baking condition.

## Test items and results of reliability

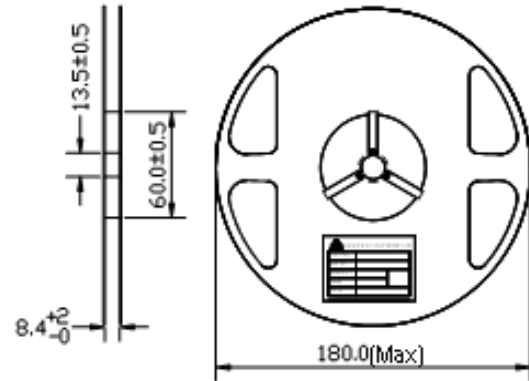
Type	Test Item	Test Conditions	Note	Number of Damaged
Environmental Sequence	Temperature Cycle	-20°C 30min ↑ ↓ 80°C 30min	100 cycle	0/22
	Thermal Shock	-20°C 15min ↑ ↓ 80°C 15min	100 cycle	0/22
	High Humidity Heat Cycle	30°C ↔ 65°C 90%RH 24hrs/1cycle	10 cycle	0/22
	High Temperature Storage	T <sub>a</sub> =80°C	1000 hrs	0/22
	Humidity Heat Storage	T <sub>a</sub> =60°C RH=90%	1000 hrs	0/22
	Low Temperature Storage	T <sub>a</sub> =-30°C	1000 hrs	0/22
Operation Sequence	Life Test	T <sub>a</sub> =25°C I <sub>F</sub> =20mA	1000 hrs	0/22
	High Humidity Heat Life Test	60°C RH=90% I <sub>F</sub> =10mA	500 hrs	0/22
	Low Temperature Life Test	T <sub>a</sub> =-20°C I <sub>F</sub> =20mA	1000 hrs	0/22

## 0805 Series SMD Chip LED Lamps Packaging Specifications

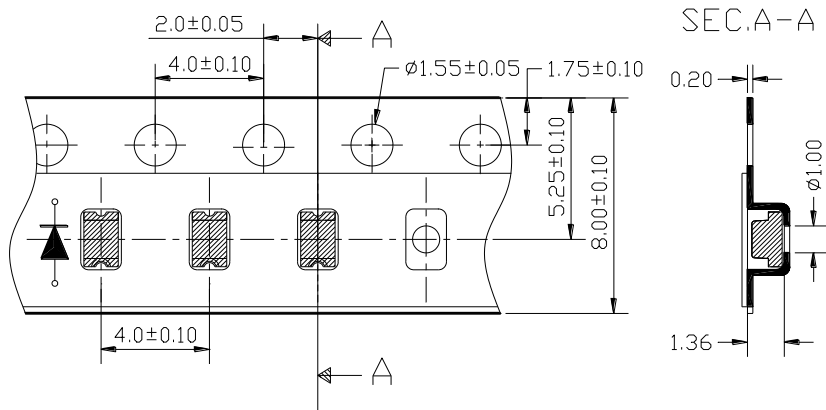
### ● Feeding Direction



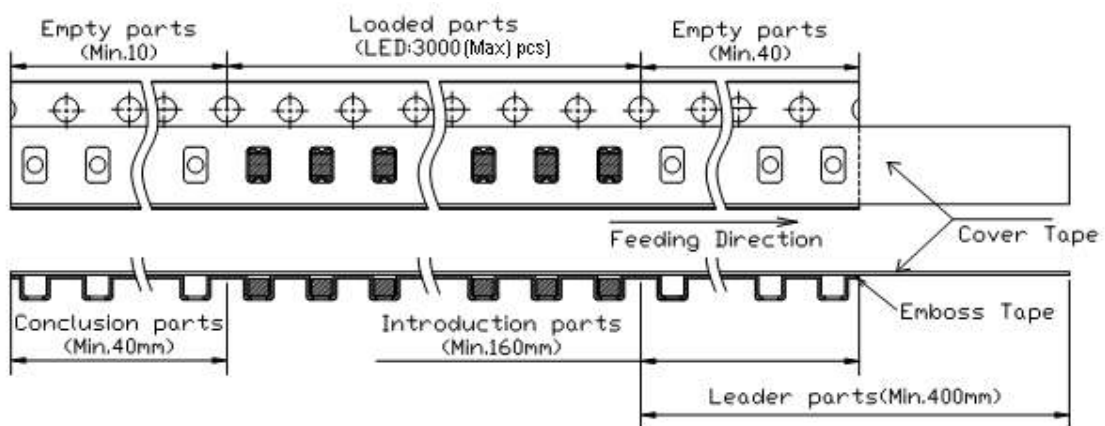
### ● Dimensions of Reel (Unit: mm)



### ● Dimensions of Tape (Unit: mm)



### ● Arrangement of Tape



### NOTES

1. Empty component pockets are sealed with top cover tape;
2. The maximum number of missing lamps is two;
3. The cathode is oriented towards the tape sprocket hole in accordance with ANSI/EIA RS-481 specifications.
4. 3,000(Max)pcs/Reel





### Forward Voltage Rank Combination (IF=20mA)

Rank	Min.	Max.	Unit
<input type="checkbox"/>	1.7	2.5	V

### Luminous Intensity Rank Combination (IF=20mA)

Rank	Min.	Max.	Unit
G	50	63	mcd
H	63	80	
I	80	100	
J	100	125	
K	125	160	
L	160	200	

### Dominant wavelength Rank Combination (IF=20mA)

Rank	Min.	Max.	Unit
u	625	630	nm
v	630	635	

### Group Name on Label (Example DATA: Jv 20 )

DATA: <input type="checkbox"/> Jv 20	Vf(V)	Iv (mcd)	$\lambda$ d (nm)	Test Condition
<input type="checkbox"/> →J→v→20	1.7~2.5	100~125	630~635	IF=20mA

\* NOTE:

1. The tolerance of luminous intensity (Iv )is  $\pm 15\%$  .
2. The tolerance of dominant wavelength is  $\pm 1.5\text{nm}$ .
3. This specification is preliminary.