

**DESCRIPTIONS:**

- 2.0x1.2x0.8mm SMD LED
- Emitting Color:
- Lens Color:

**CUSTOMER:\_\_\_\_\_**

**MASON P/N:CED-2012URGC**

**CUSTOMER P/N:\_\_\_\_\_**

**CUSTOMER APPROVED SIGNATURES**

<b>APPROVRD BY</b>	<b>CHECKED BY</b>

## PRELIMINARY SPEC

2.0x1.2X0.8mm SMD CHIP LED

PART NO: CED-2012URGC



### ATTENTION

OBSERVE PRECAUTIONS  
FOR HANDLING

LECTROSTATIC  
ISCHARGE SENSITIVE  
DEVICES

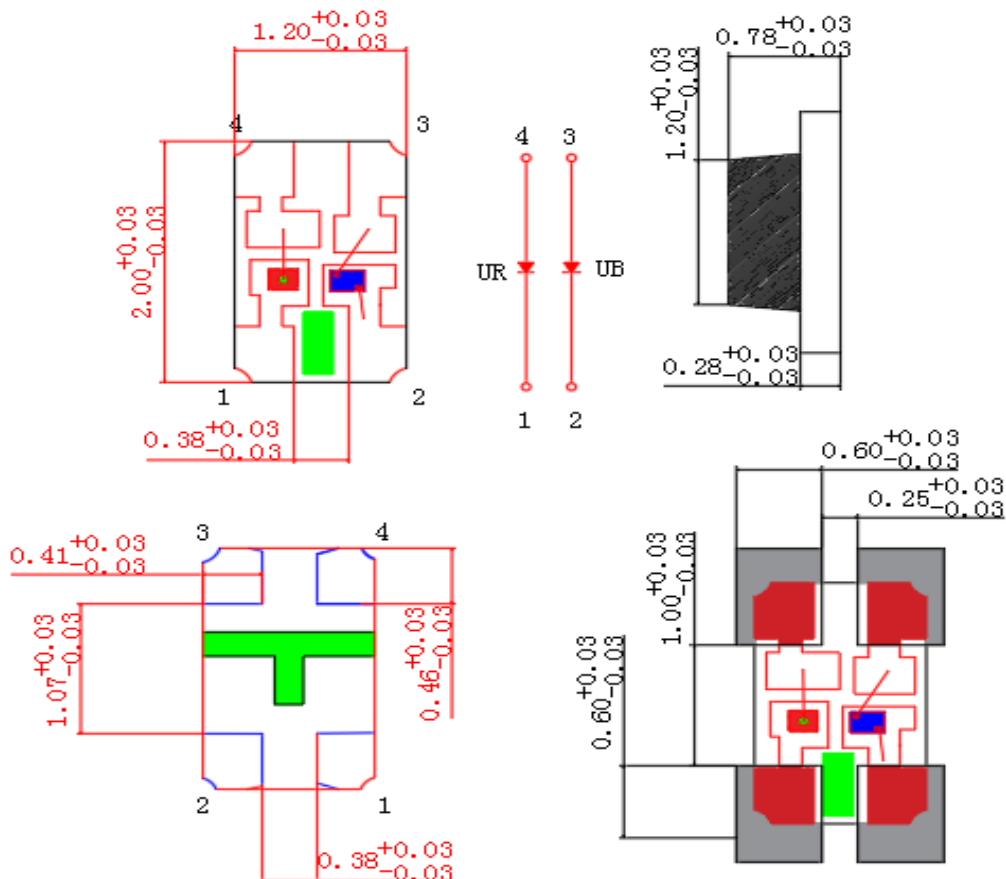
## Features

- 2.0mmx1.2mm SMT LED, 0.8mm THICKNESS.
- WIDE VIEWING ANGLE.
- IDEAL FOR BACKLIGHT AND INDICATOR.
- PACKAGE : 3000PCS / REEL.
- RoHS COMPLIANT.

## Applications

- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and back-lighting in telephone and fax.
- Flat backlight for LCD switch and symbol.

## ◆ Package Dimensions



Notes:

1. All dimensions are in millimeters.

2. Tolerance is  $\pm 0.15$  unless otherwise noted.  
 3. Specifications are subject to change without notice.

### ◆ Device Selection Guide

Part No.	Chip		Lens color
C0805-URUB	Material	Emitted color	Water Clear
	(AlGaInP)	RED	
	INGAN	BLUE	

### ◆ Absolute Maximum Ratings at TA=25°C

Parameter	Symbol	Value			Unit
		R	G	B	
Power Dissipation	PD	50	--	70	mW
Forward Current	IF	20	--	20	mA
Peak Forward Current*1	IFP	70	--	100	mA
Reverse Voltage	VR	5			V
Operating Temperature	Topr	-40°C To +85°C			
Storage Temperature	Tstg	-40°C To +85°C			

Notes:

\*1: Pulse width $\leq 0.1$ ms, Duty cycle $\leq 1/10$

### ◆ Electrical / Optical Characteristics at TA=25°C

Parameter	Symbol	Min	typ	Max	Unit	Test Conditions
Forward Voltage	VF(R)	1.8	—	2.3	V	IF=5mA
	VF(G)	---	---	---	V	IF=5mA
	VF(B)	2.4	—	3.2	V	IF=5mA
Reverse Current	IR	—	—	10	$\mu$ A	VR=5V
Peak Wave Length	$\lambda_p(R)$	—	625	—	nm	IF=5mA
	$\lambda_p(G)$	—	---	—	nm	IF=5mA
	$\lambda_p(B)$	—	520	—	nm	
Dominant Wave Length	$\lambda_d(R)$	618	—	625	nm	IF=5mA
	$\lambda_d(G)$	---	—	---	nm	IF=5mA

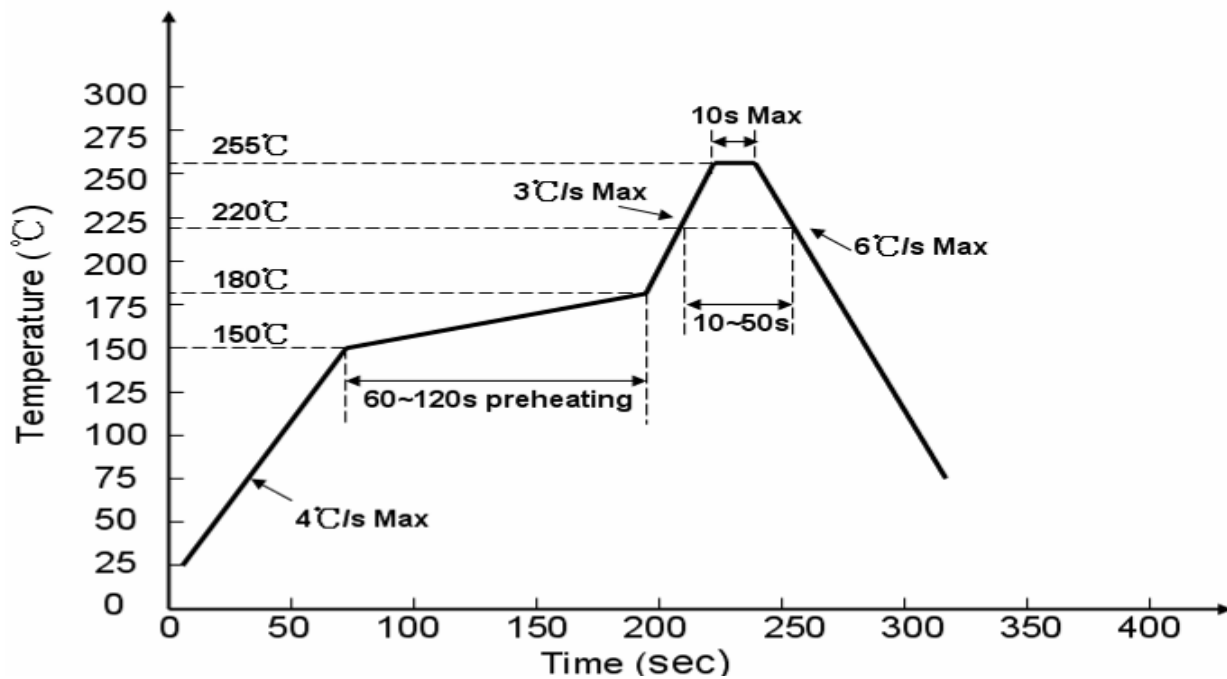
	$\lambda_d(B)$	520	—	525	nm	
Luminous Intensity	IV(R)	25	—	74	mcd	IF=5mA
	IV(G)	---	—	---	mcd	IF=5mA
	IV(B)	40	—	100	mcd	
Viewing Angle	2 $\theta$ 1/2	—	85	—	Deg.	IF=5mA

#### Remarks:

If special sorting is required (e.g. binning based on forward voltage, luminous intensity, or chromaticity), the typical accuracy of the sorting process is as follows:

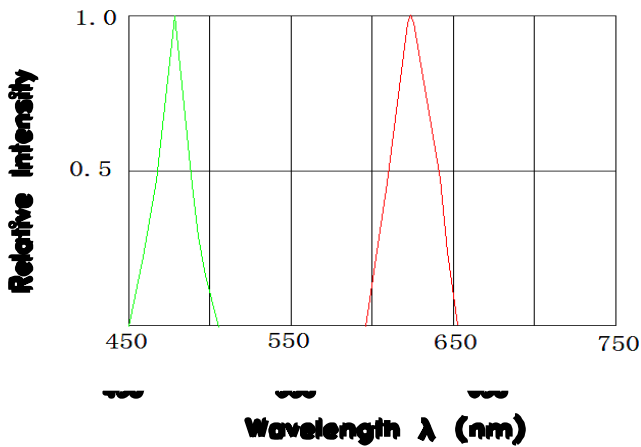
1. Chromaticity Coordinates:  $\pm 0.01$
2. Luminous Intensity:  $\pm 15\%$
3. Forward Voltage:  $\pm 0.1V$

#### ◆ Soldering Profile

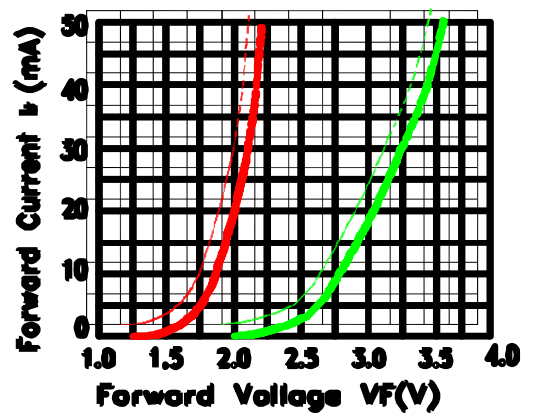


Lead process

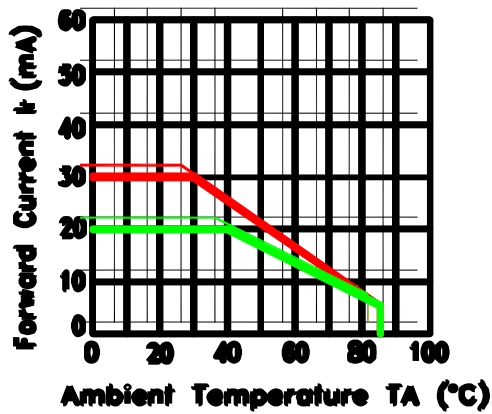
# ◆ Typical Electrical/Optical Characteristics Curves



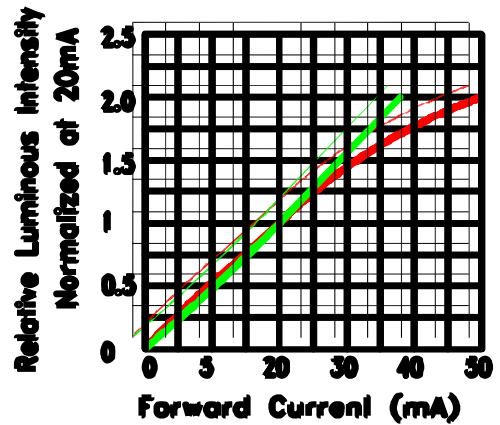
**Fig.1 RELATIVE INTENSITY VS. WAVELENGTH**



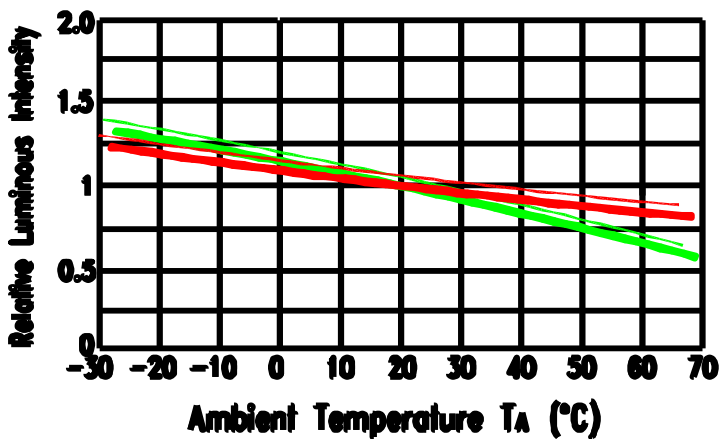
**Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE**



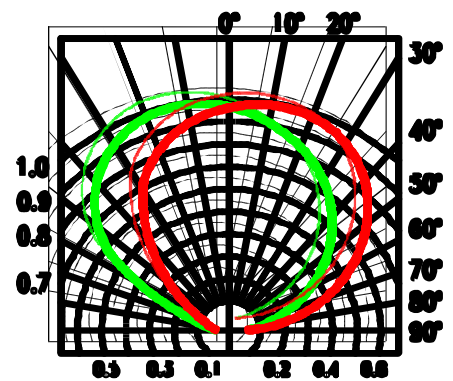
**Fig.3 FORWARD CURRENT DERATING CURVE**



**Fig.4 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT**



**Fig.5 Luminous Intensity vs. Ambient Temperature**



**Fig.6 SPATIAL DISTRIBUTION**

### ◆ VF Rank

Rank		VF		Condition
		MIN	MAX	
UR	/	1.8	2.0	IF=5mA
	/	2.0	2.2	
UB	/	2.5	2.7	
	/	2.7	2.9	
	/	2.9	3.1	

**Tolerance:**±0.05V

### ◆ IV Rank

Rank		IV		Condition
		MIN	MAX	
UR	/	25	36	IF=5mA
	/	36	51	
	/	51	74	
UG	/	30	43	
	/	300	350	
	/	400	450	

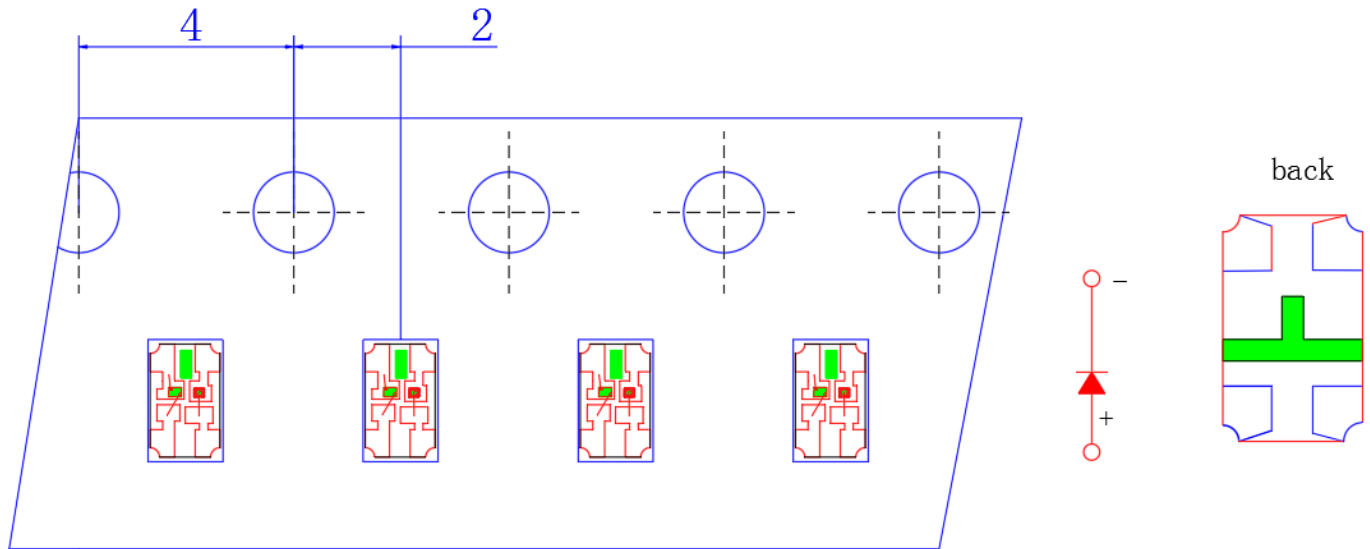
**olerance:**±15%

### ◆ WLD Rank

Rank		WLD		Condition
		MIN	MAX	
UR	/	617	625	IF=5mA
UG	/	460	465	
	/	510	515	
	/	520	525	

**Tolerance:**±1nm

◆ Carrier Tape Dimensions: Loaded Quantity 3000pcs Per Reel



◆ Judgment criteria of failure for the reliability

Measuring items	Symbol	Measuring conditions	Judgement criteria for failure
Forward voltage	$V_F(V)$	$I_F=5mA$	Initial Level*1.1
Reverse current	$I_R(\mu A)$	$V_R=5V$	Over U*2
Luminous intensity	$IV(mcd)$	$I_F=5mA$	Initial Level*0.7

Note: 1.U means the upper limit of specified characteristics.

2.Measurment shall be taken between 2 hours and after the test pieces have been returned to normal ambient conditions after completion of each test.

◆ **CAUTIONS:**

**1.Storage**

- In order to avoid the absorption of moisture, it is recommended to store in the dry box (or desiccator) with a desiccant. Otherwise, to store them in the following environment is recommended.

Temperature: 5°C~30°C

Humidity: 60%HR max.

- Attention after opened

However LED is corresponded SMD, when LED be soldered dip, interfacial separation may affect The light transmission efficiency, causing the light intensity to drop. Attention in followed.

a. After opened and mounted, the soldering shall be quickly.

b. Keeping of a fraction

Temperature: 5°C~40°C

Humidity: less than 30%

- In case or more than 1 week passed after opening or change color of indicator on desiccant components shall be dried 10-12hr. at 60°C±3°C.
- In case of supposed the components is humid, shall not be dried dip-solder just before. 100Hr at 80°C±3°C or 12Hr at 100°C±3°C

**2.ESD ( Electrostatic Discharge)**

Static Electricity or power surge will damage the LED.

The following procedures may decrease the possibility of ESD damage.

- All production machinery and test instruments must be electrically grounded.
- Use a conductive wrist band or anti-electrostatic glove when handling these LEDs.
- Maintain a humidity level of 50% or higher in production areas.
- Use anti-static packaging for transport and storage.