



深圳市鸿之森电子有限公司

## SAMPLE APPROVAL SHEET

### DESCRIPTIONS:

- 1.0x0.5x0.45mm SMD LED
- Emitting Color: Green
- Lens Color: Water Clear

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

MASON P/N:HS-0402-UG

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

### CUSTOMER APPROVED SIGNATURES

APPROVRD BY	CHECKED BY

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## PRELIMINARY SPEC

1.0x0.5X0.45mm SMD CHIP LED

PART NO: T0402UG-ES

Green



**ATTENTION**  
OBSERVE PRECAUTIONS  
FOR HANDLING  
LECTROSTATIC DISCHARGE  
SENSITIVE DEVICES

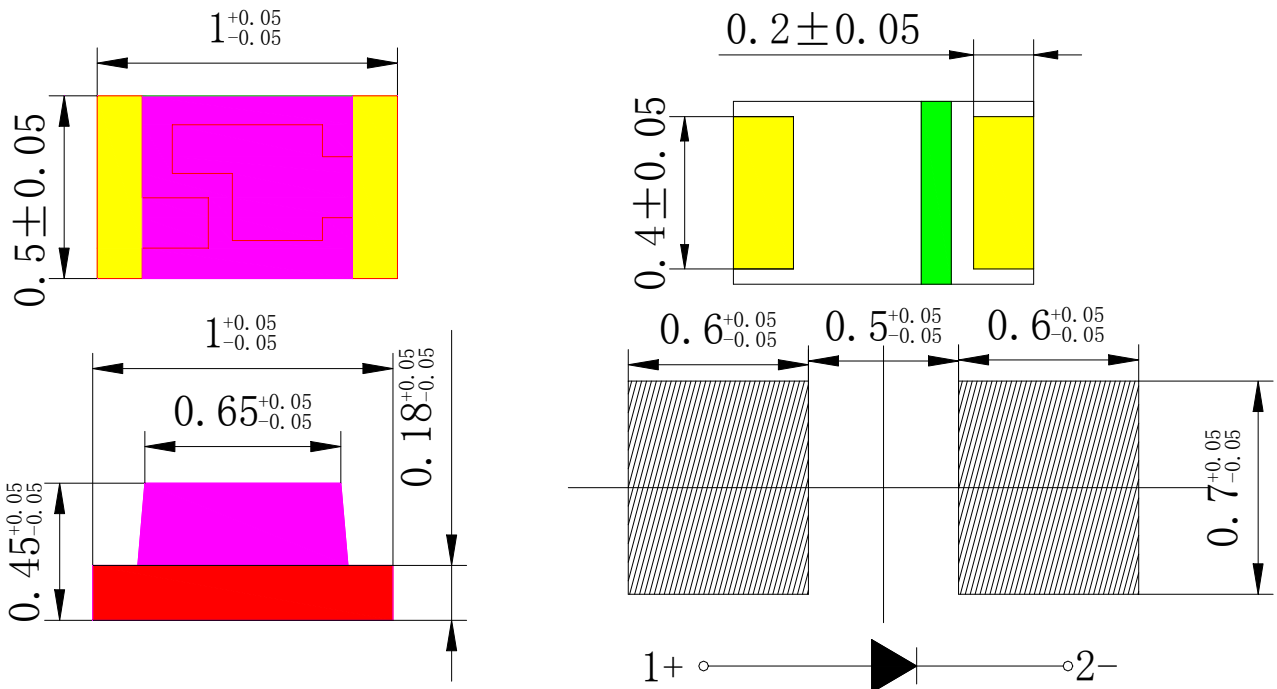
## Features

- 1.0mmx0.5mm SMT LED, 0.45mm THICKNESS.
- SIDE 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  $\pm 0.1$ mm unless otherwise noted.
3. Specifications are subject to change without notice.

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## ◆ Device Selection Guide

Part No.	Chip		Lens color
	Material	Emitted color	
T0402UG-ES	(InGaN)	GREEN	Water Clear

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

Parameter	Symbol	Value	Unit
Power Dissipation	PD	100	mW
Forward Current	IF	20	mA
Peak Forward Current*1	IFP	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≤0.1ms, Duty cycle≤1/10

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

Parameter	Symbol	Min	typ	Max	Unit	Test Conditions
Forward Voltage	VF	2.6	—	3.2	V	IF=5mA
Reverse Current	IR	—	—	10	μA	VR=5V
Peak Wavelength	λp	—	525	—	nm	IF=5mA
Dominant Wavelength	λd	516	—	536	nm	
Luminous Intensity	IV	200	—	500	mcd	IF=5mA
Viewing Angle	2θ1/2	—	120	—	Deg.	IF=5mA

### Remarks:

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

1. Dominant Wavelength: ±1nm
2. Luminous Intensity: ±15%
3. Forward Voltage: ±0.1V

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◆ Typical Electrical/Optical Characteristics Curves

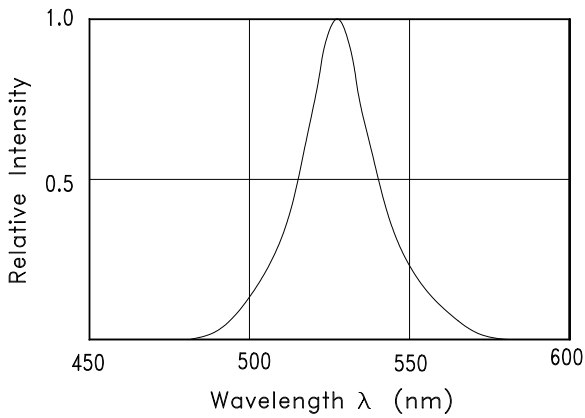


Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

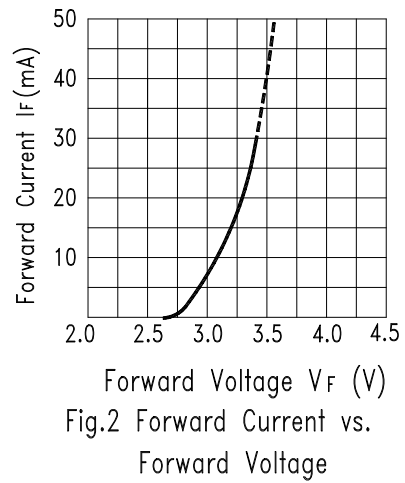


Fig.2 Forward Current vs. Forward Voltage

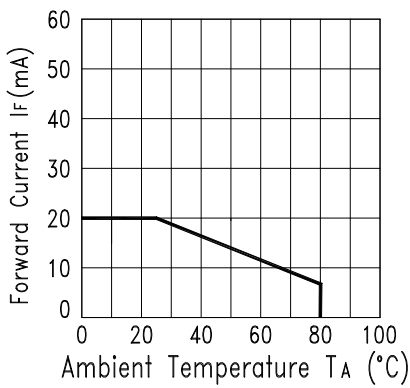


Fig.3 Forward Current Derating Curve

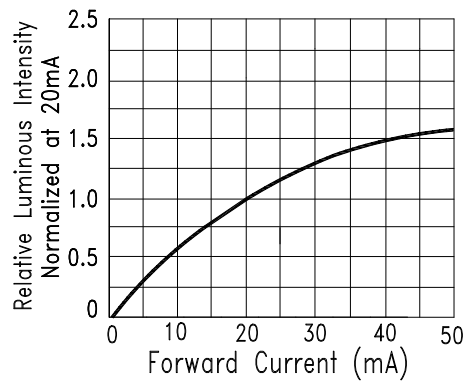


Fig.4 Relative Luminous Intensity vs. Forward Current

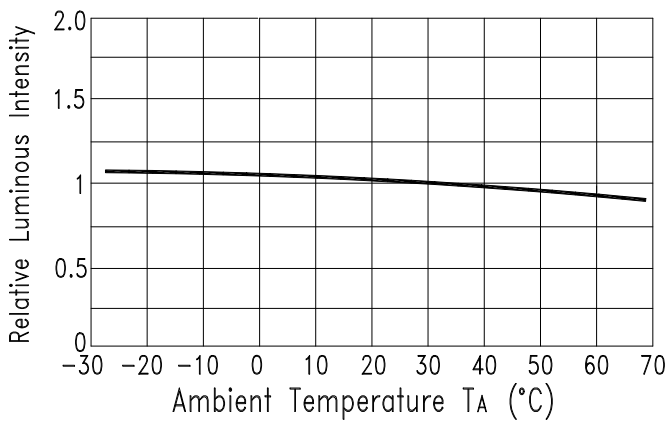


Fig.5 Luminous Intensity vs. Ambient Temperature

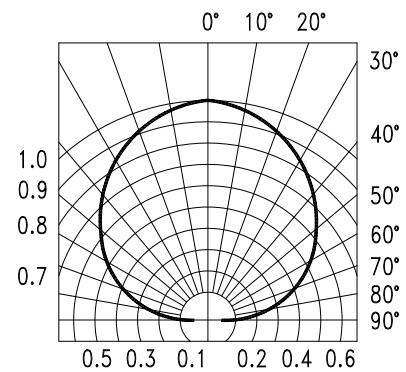
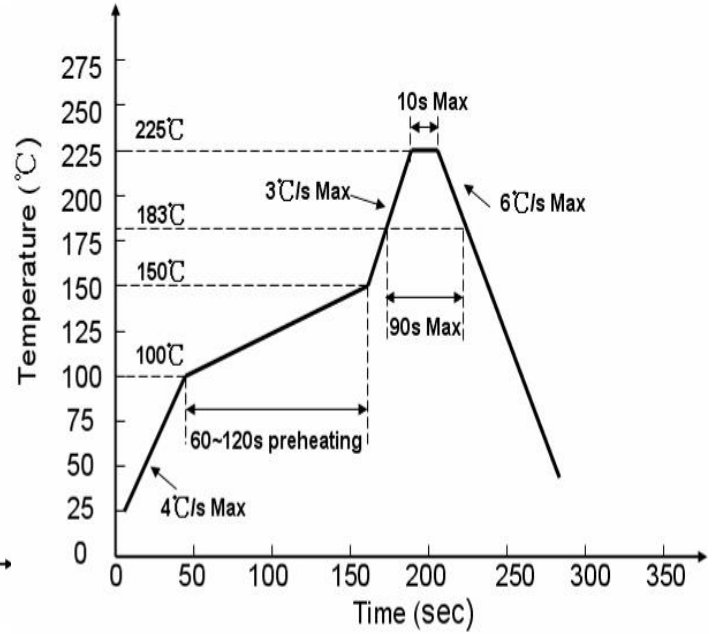
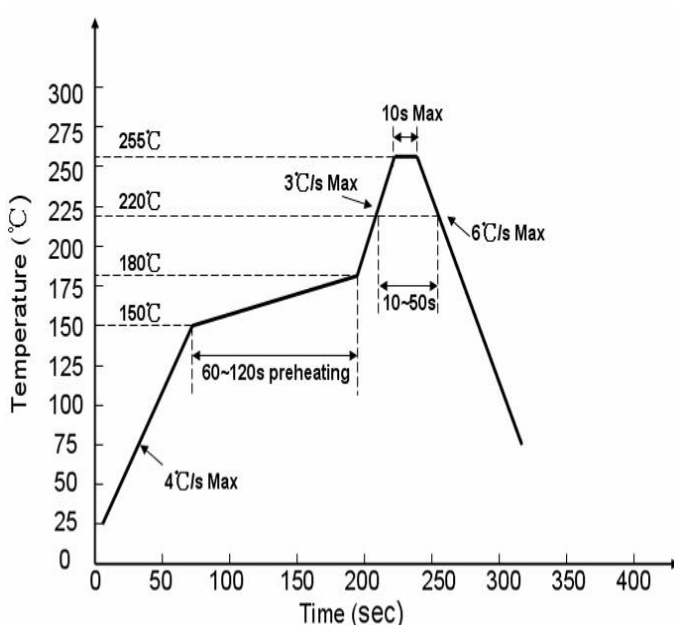


Fig.6 Spatial Distribution



◆ Soldering Profile

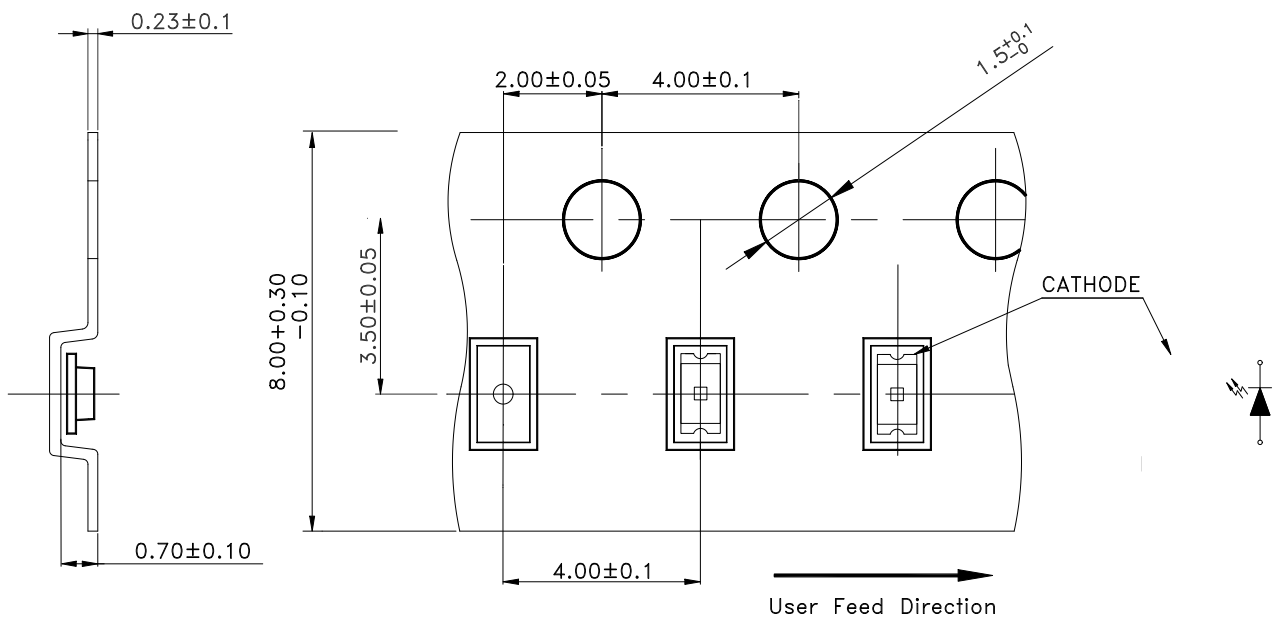


Free Lead process

Lead process

◆ Tape specifications

(Units:mm)



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◆ VF Rank

Rank		VF		Condition
		MIN	MAX	
b	b2	2.6	2.7	IF=5mA
	b3	2.7	2.8	
	b4	2.8	2.9	
	b5	2.9	3.0	
c	c1	3.0	3.1	
	c2	3.1	3.2	

Tolerance:±0.05V

◆ VF Rank

Rank		IV		Condition
		MIN	MAX	
IV	p1	200	250	IF=5mA
	p2	250	300	
	q1	300	350	
	q2	350	400	
	r1	400	500	

Tolerance:±15%

◆ WLD Rank

Rank		$\lambda d$		Condition
		MIN	MAX	
F	F1	516	520	IF=5mA
	F2	520	524	
	F3	524	528	
	F4	528	532	
	F5	532	536	

Tolerance:±1nm

◆ CAUTIONS:

1.Storage

• In order to avoid the absorption of moisture, it is recommended to store in the dry box (or desiccators) 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

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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.