深圳市鸿之森电子有限公司

# SAMPLE APPROVAL SHEET

DESCRIPTIONS：

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

CUSTOMER:_____

MASON P/N:HS-0402-UO

CUSTOMER P/N:_____

CUSTOMER APPROVED SIGNATURES

| APPROVRD BY | CHECKED BY |
| --- | --- |
| | |

# 深圳市鸿之森电子有限公司

## PRELIMINARY SPEC

1.0x0.5X0.45mm SMD CHIP LED

PART NO: HS-0402-UO Orange

ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING
LECTROSTATIC DISCHARGE SENSITIVE DEVICES

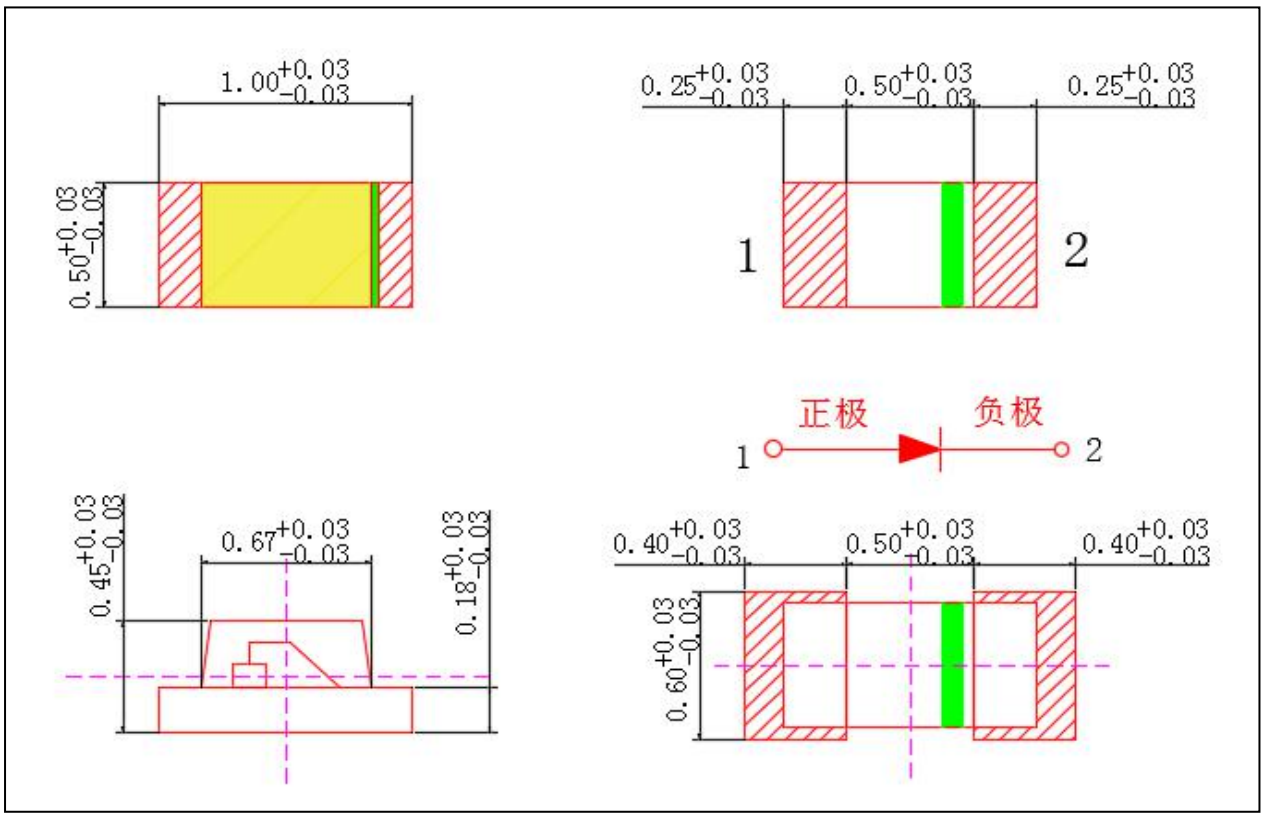
## Features

- 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 ±0.1mm unless otherwise noted.
3. Specifications are subject to change without notice.

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## ◆ Device Selection Guide

| Part No. | Chip | | Lens color |
|---|---|---|---|
| T0402UO | Material | Emitted color | Water Clear |
| | AlGaInP | Orange | |

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

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Power Dissipation | PD | 60 | mW |
| Forward Current | IF | 20 | mA |
| Peak Forward Current*1 | IFP | 60 | 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 | 1.7 | 2.0 | 2.5 | V | IF=20mA |
| Reverse Current | IR | — | — | 10 | μA | VR=5V |
| Peak Wavelength | λp | — | 610 | — | nm | IF=20mA |
| Dominant Wavelength | λd | 600 | — | 610 | nm | |
| Luminous Intensity | IV | 72 | — | 200 | mcd | IF=20mA |
| Viewing Angle | 2θ1/2 | — | 120 | — | Deg. | IF=20mA |

**Remarks:**
If special sorting is required (e.g. binning based on forward voltage, luminous intensity, or Dominant Wave Length), the typical accuracy of the sorting process is as follows:
1. Dominant Wave Length: ±1nm
2. Luminous Intensity: ±15%
3. Forward Voltage: ±0.1V

◆ Typical Electrical/Optical Characteristics Curves

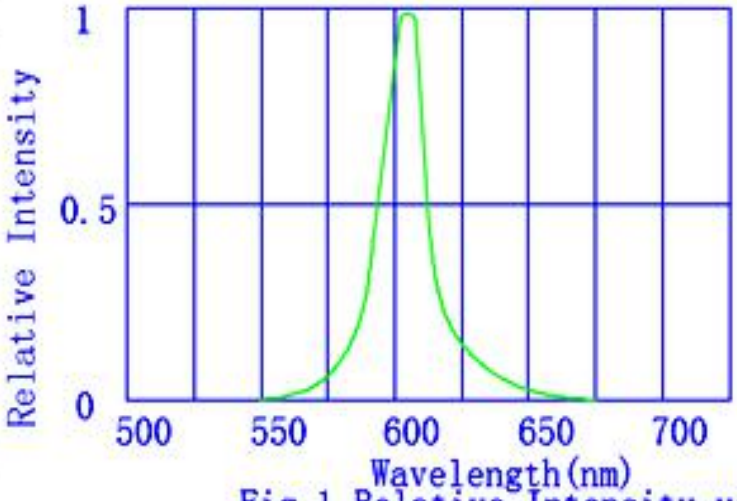



Fig.1 Relative Intensity vs Wavelength

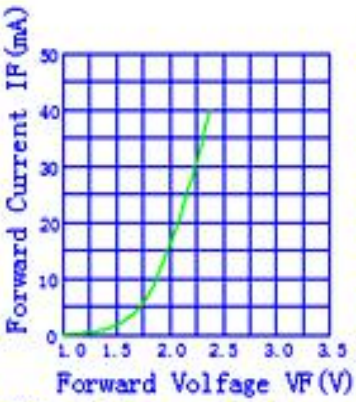



Fig.2 Forward Current vs.Forward Volfage

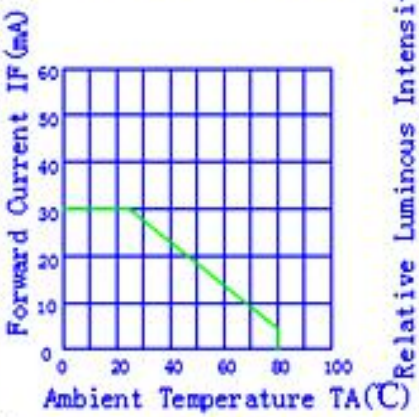



Fig.3 Forward Current vs.derating Curve

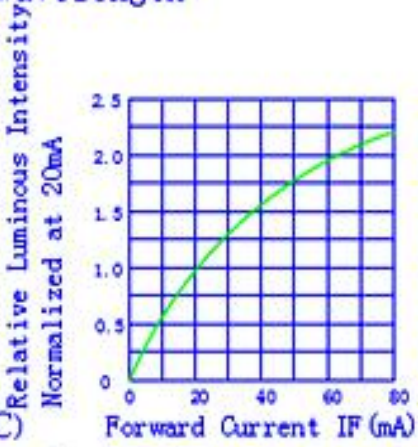



Fig.4 Relative Luminous Intensity vs.Forward Current

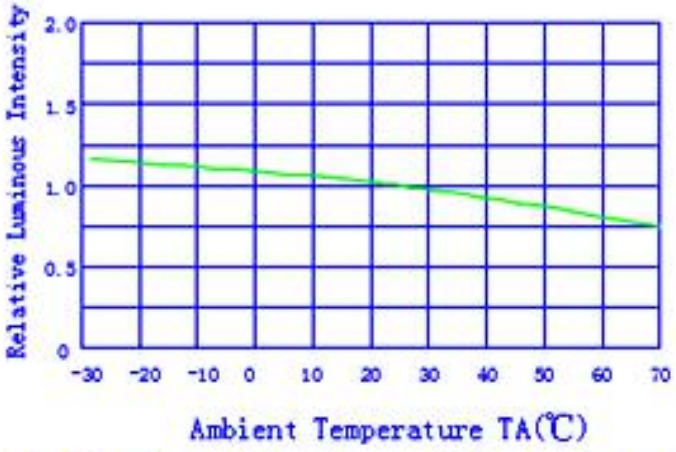



Fig.5 Luminous Intensity vs.Ambient Temperature

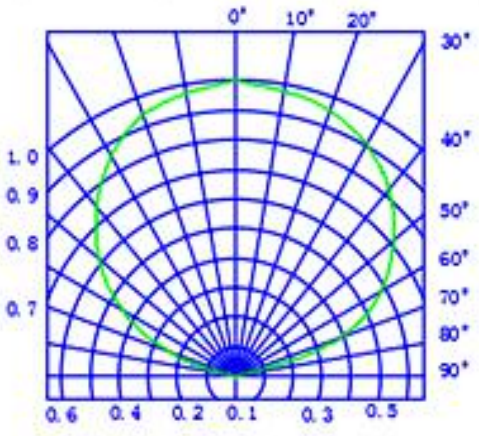
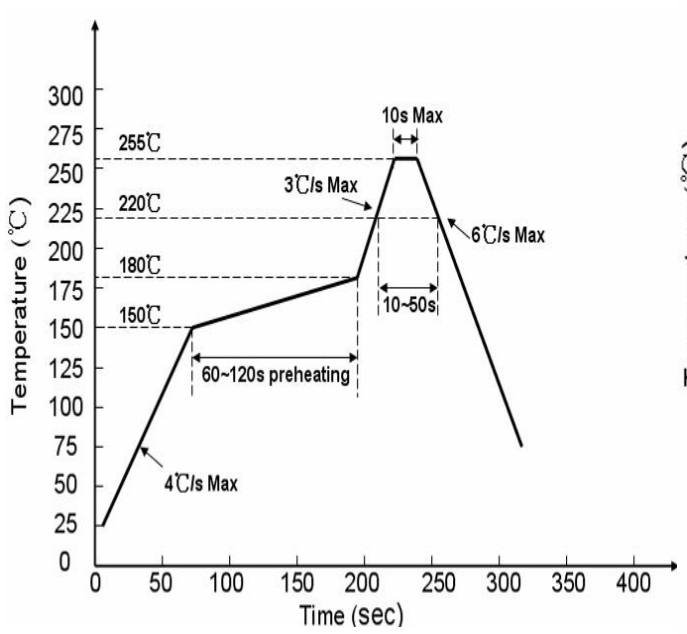
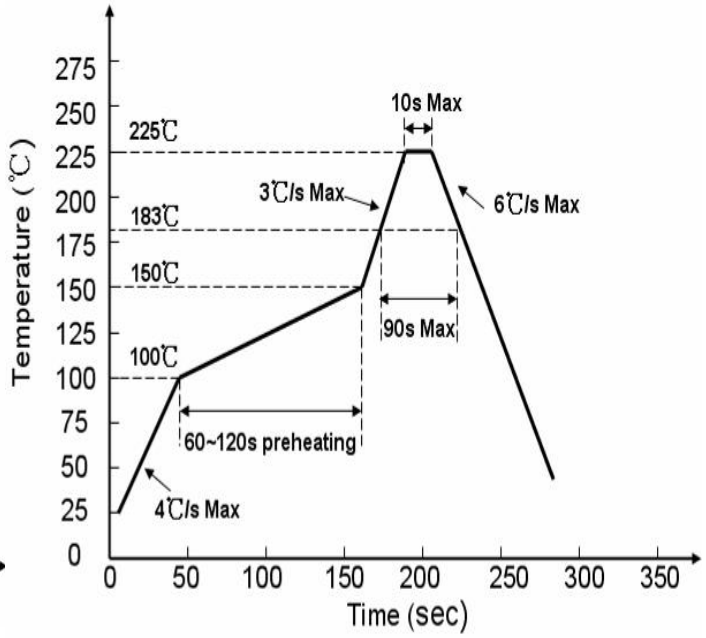



Fig.6 Spatial Distribution

## ◆ Soldering Profile

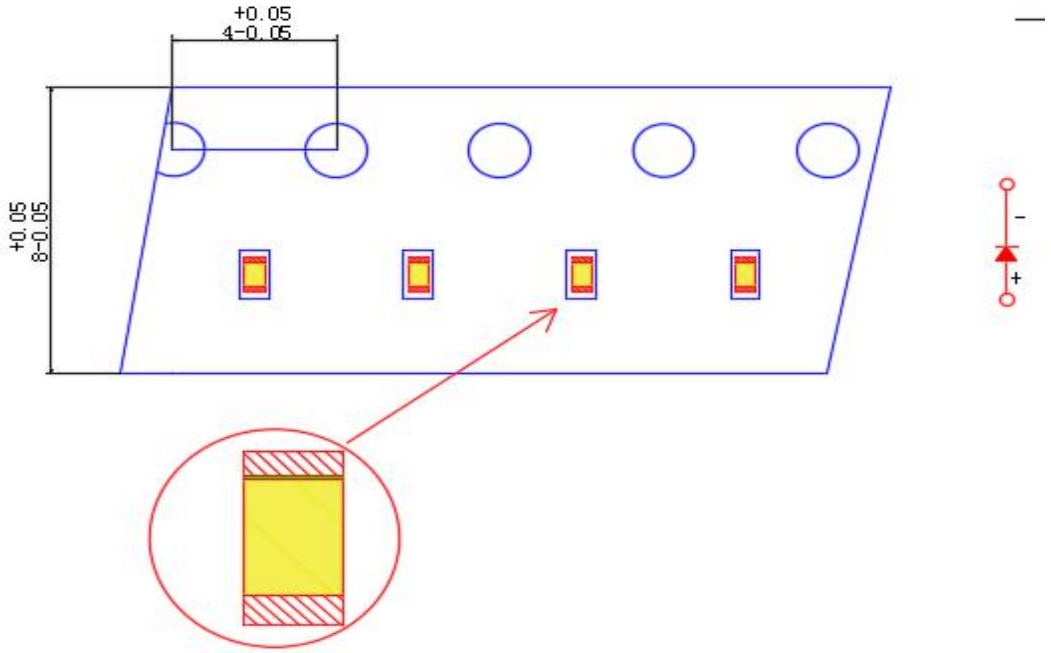



Free Lead process　　Lead process

## ◆ Tape specifications

(Units:mm)



## ◆ VF Rank

| Rank | | VF | | Condition |
|---|---|---|---|---|
| | | MIN | MAX | |
| a | a2 | 1.7 | 1.9 | IF=20mA |
| | a3 | 1.9 | 2.1 | |
| | a4 | 2.1 | 2.3 | |
| | a5 | 2.3 | 2.5 | |

Tolerance:±0.05V

## ◆ VF Rank

| Rank | | IV | | Condition |
|---|---|---|---|---|
| | | MIN | MAX | |
| m | m2 | 74 | 89 | IF=20mA |
| n | n1 | 89 | 100 | |
| | n2 | 100 | 130 | |
| o | o1 | 130 | 160 | |
| | o2 | 160 | 200 | |

Tolerance:±15%

## ◆ WLD Rank

| Rank | | λd | | Condition |
|---|---|---|---|---|
| | | MIN | MAX | |
| J | J1 | 600 | 605 | IF=20mA |
| | J2 | 605 | 610 | |

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°CHumidity: 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 10-12hours at 60°C±3°C.

• In case of supposed the components is humid, shall not be dried dip-solder just before. 100Hours at 80°C±3°C or 12Hours 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.