



## SAMPLE APPROVAL SHEET

**DESCRIPTIONS:**

- 2.0x1.25x0.7mm SMD LED
- Emitting Color: Orange
- Lens Color: Water Clear

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

**MASON P/N: MS-PT2012CEC** \_\_\_\_\_

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

**CUSTOMER APPROVED PRODUCTION PARAMETER BIN**  
**客户承认产品BIN表**

<b>IV/LM</b> 亮度/流明	<b>CCT</b> 色温
<b>WL/XY</b> 波长/区块	<b>Ra</b> 显指
<b>VF</b> 电压	<b>Other</b> 其它

<b>APPROVED BY</b> 审核	<b>CHECKED BY</b> 确认



PRELIMINARY SPEC

2.0x1.25mm SMD CHIP LED

PART NO: MS-PT2012CEC ORANGE

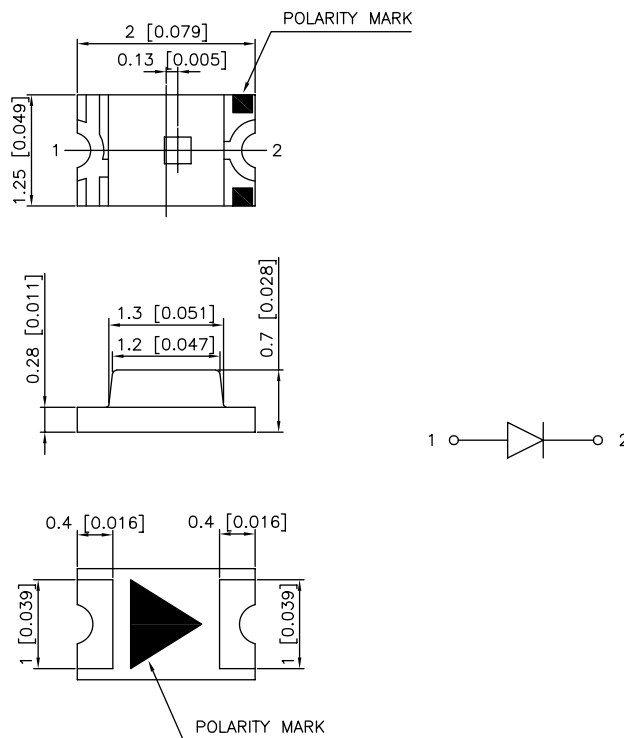
Features

- 2.0mmx1.25mm SMT LED, 0.7mm THICKNESS.
- WIDE VIEWING ANGLE.
- IDEAL FOR BACKLIGHT AND INDICATOR.
- VARIOUS COLORS AND LENS TYPES AVAILABLE.
- PACKAGE : 4000PCS / REEL.
- RoHS COMPLIANT.

Applications

- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and backlighting 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
MS-PT2012CEC	Material	Emitted color	Water clear
	(InGaAlP)	ORANGE	

◆ **Absolute Maximum Ratings at T<sub>A</sub>=25°C**

Parameter	Symbol	Value	Unit
Power Dissipation	P <sub>D</sub>	62	mW
Forward Current	I <sub>F</sub>	25	mA
Peak Forward Current*1	I <sub>FP</sub>	100	mA
Reverse Voltage	V <sub>R</sub>	5	V
Operating Temperature	T <sub>opr</sub>	-40°C To +85°C	
Storage Temperature	T <sub>stg</sub>	-40°C To +85°C	

Notes:

\*1: Pulse width≤0.1ms, Duty cycles≤1/10

◆ **Electrical / Optical Characteristics at T<sub>A</sub>=25°C**

Parameter	Symbol	Min.	Typ.	Max	Unit	Test Conditions
Forward Voltage	V <sub>F</sub>	1.8	—	2.6	V	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>	—	—	10	μA	V <sub>R</sub> =5V
Dominant Wavelength	λ <sub>D</sub>	601	—	613	nm	I <sub>F</sub> =20mA
Luminous Intensity	I <sub>v</sub>	130	—	225	mcd	I <sub>F</sub> =20mA
Viewing Angle	2θ <sub>1/2</sub>	—	120	—	Deg.	I <sub>F</sub> =20mA

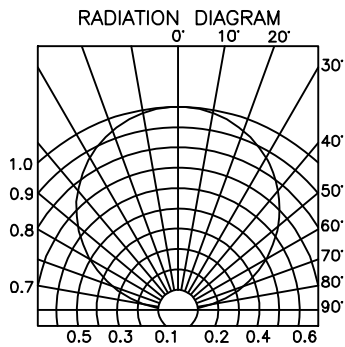
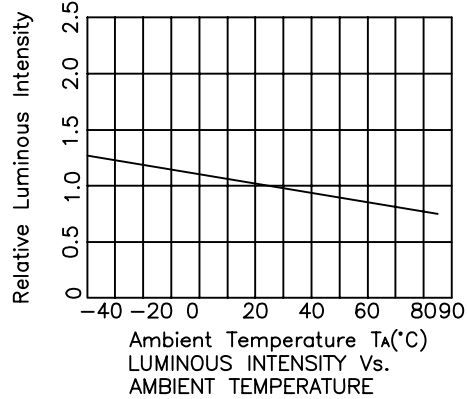
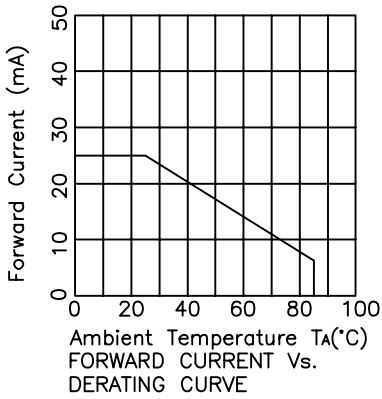
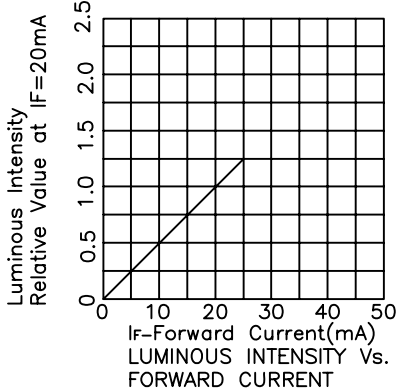
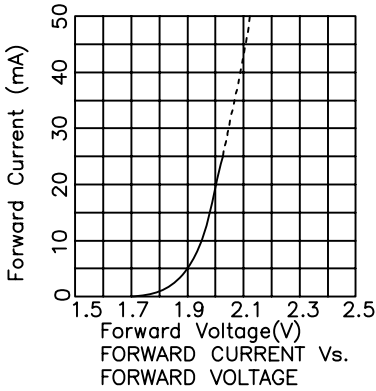
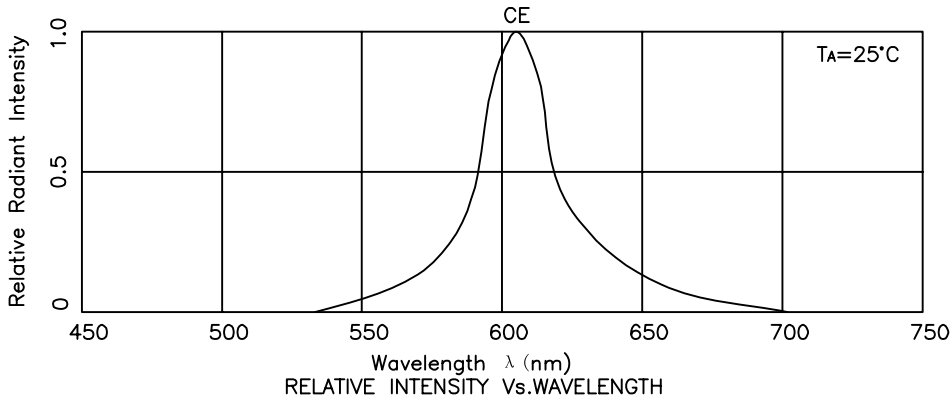
Remarks:

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



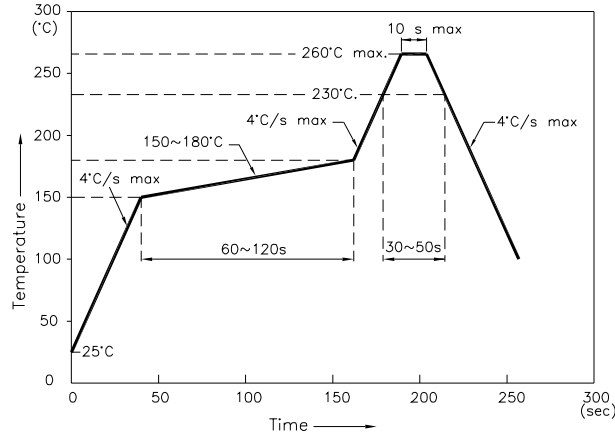
◆ Typical Electrical/Optical Characteristics Curves





◆ **Soldering Profile**

Reflow Soldering Profile For Lead-free SMT Process.

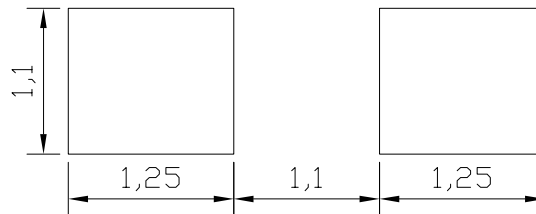


NOTES:

1. We recommend the reflow temperature 245°C(+/-5°C). The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

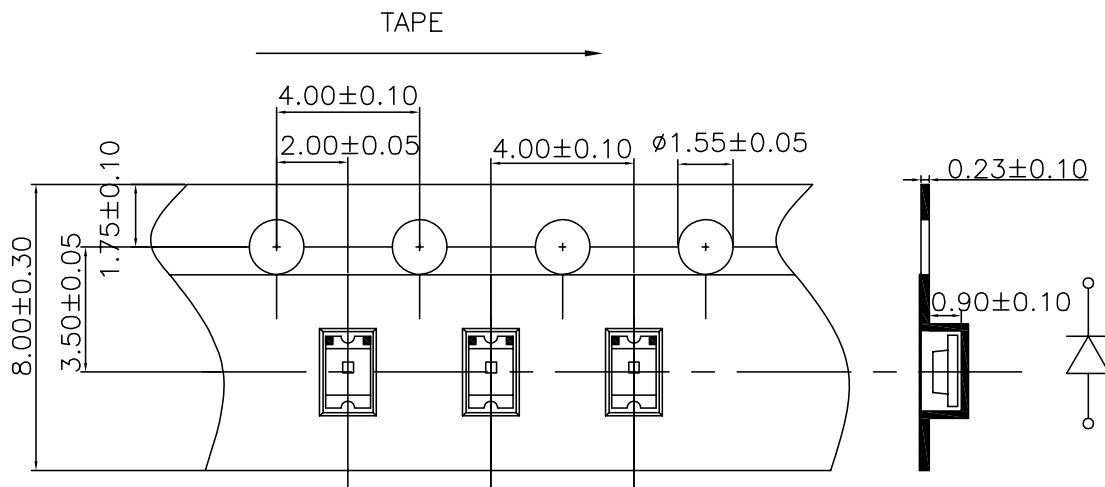
◆ **Recommended soldering pattern**

(Units:mm)



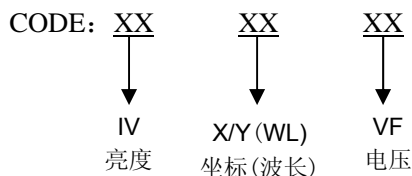
◆ **Tape specifications**

(Units:mm)





◆ **Label Explanation**



深圳万润科技股份有限公司 SHENZHEN MASON TECHNOLOGIES CO., LTD
Part NO. : xxxxxxxxxxxxxxxx
QTY: xxx PCS                    CODE: xx xx xx
Lot NO: xxxxxxxxxxxxxxxx
ERP NO. : xxxxxxxxxxxxxxxx
Date: xxxxxxxxxxxxxxxx

◆ **VF Rank**

Rank	VF(V)		Condition
	Min	Max	
B	1.8	2.0	IF=20mA
C	2.0	2.2	
D	2.2	2.4	
E	2.4	2.6	

**Tolerance:±0.1V**

◆ **λD Rank**

Rank	λD(nm)		Condition
	Min	Max	
1	601	605	IF=20mA
2	605	609	
3	609	613	

**Tolerance:±1nm**

◆ **IV Rank**

Rank	IV(mcd)		Condition
	Min	Max	
P	130	170	IF=20mA
Q	170	225	

**Tolerance:±15%**



◆ **CAUTIONS:**

**1.Storage**

**储存**

- Storage condition before opening the package: 5°C~30°C, the largest percentage relative humidity is 60% and the storage period is six month. The LEDs beyond the storage period just can be used after dealing as step 4.
- After opening the package, If the LEDs will be Infrared reflow soldering, Oxygen phase reflow soldering or any other welding.
  - a. must be welding within 24 hours.
  - b. the storage humidity must be below 30% .
- If the situation does not satisfy 2a or 2b, the LEDs must be roasted.
- If the LEDs need to be roasted, the roast temperature should be 60°C+/-3 and the roast time should be 24 hours.
- 未拆封前的储存条件：5°C~30°C，最大相对湿度60%，储存时间6个月，超过6个月的LED按步骤4处理后才能正常使用。
- 袋子开封后，元件若将进行红外线回焊、氧相回焊或类似的焊接处理，必须在
  - a. 24小时内完成焊接工作。
  - b. 储存湿度低于30% 。
- 假如不符合2a或2b的条件，则元件必须烘烤。
- 若元件须烘烤，烘烤条件为：60°C±3，24小时。

**2.ESD ( Electrostatic Discharge)**

**静电**

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.

静电和电涌会对LED造成损毁。

下列方式有减少静电危害的可能性。

- 所有生产机械和测试设备必须接地。
- 操作LED灯时，需佩戴防静电手环或防静电手套。
- 在生产车间维持湿度等级在50%或以上。
- 运输和储存需用抗静电袋包装。

**3.Cleaning**

**清洗**

- Led should be cleaned in a normal temperature and the time for cleaning should be less than 3 minutes ; please use Alcohol as cleaner ,before you use other cleaning solvent ,please make sure that the cleaner will not make any damage to the LED performance or the appearance .
- Ultrasonic Cleaning is also commonly used for cleaning LED , please verify the Ultrasonic cleaning 's Power and time to avoid any damage to the LED .
- The recommended solvent for cleaning:
- LED的清洗推荐在常温下进行且清洗时间不超过3分钟，建议优先选用酒精做为清洗剂，在选用其他溶剂清洗前请先确认不会对LED封装性能或外观造成损伤。
- 超声波清洗也是常用的有效方法，在进行大批量清洗前请先验证超声波清洗的功率及时间是否会对LED造成损伤。



• 推荐的溶剂:

Common cleaning solvent 常用清洁溶剂	Disable cleaning solvent 禁用清洁溶剂
Alcohol 酒精	Thinner、Acetone、Two fluorine resin 、 Acetone b dilute 稀释剂、丙酮、 二氟脂、三氯乙稀

◆ **Revision History:**

Rev. No.	Change description	Date	Prepared by	Checked by	Approved by
A/0	New-made specification	2008/03/10			
A/1	Revision Cautions	2013/02/01			
A/2	Revision number of packages	2014/02/20			
A/3	Revision intensity rank	2015/05/26			