

# Product Specification

**Customer :**

**Part NO. : MMB15012R-B10**

**Description : digital led display**

**Date : 2015-8-20**

| Sales | Design | Check | Approval |
|-------|--------|-------|----------|
|       |        |       |          |

## Micro Modern Electronic

### Specification

**型号 (TYPE NO.): MMB15012R-B10**

**1. 说明 (Description):**

发光颜色 (Emitted Color): 红色, 共阳 RED, commom anode

外观颜色 (Lens Color): 黑、白两色

外形尺寸 (Max Size): 44.0\*30.6\*8.0mm

**3. 绝对最大额定(Ta=25℃)Absolute Maximum Ratings:**

功耗 Power Dissipation..... 70mW

脉冲顺向电流 Peak Forward Current..... 100mA

反向电压 Reverse Voltage..... 7V

工作温度 Operating Temperature..... -40℃~+85℃

储存温度 Storage Temperature..... -40℃~+85℃

储存湿度 Storage Humidity..... 45~85%

#### 4. 光电特性(Ta=25℃)Electrical-Optical Characteristics:

| 参数 (Parameter)                                         | 测试条件<br>(Test CONDITING) | 单位<br>(Symbol)       | Min | Type | Max  | 单位<br>(Unit) |
|--------------------------------------------------------|--------------------------|----------------------|-----|------|------|--------------|
| 发光强度 Luminous Intensity                                | I <sub>F</sub> =20mA     | I <sub>V</sub>       | —   | 100  | —    | mcd          |
| 直流正向电压 DC Forward Voltage                              | I <sub>F</sub> =20mA     | V <sub>F</sub>       | 1.7 | 2.0  | 2.4  | V            |
| 直流逆向电流 DC Reverse Current                              | V <sub>R</sub> = 5V      | I <sub>R</sub>       | —   | —    | 20   | uA           |
| 波长 Wavelength Characteristic                           | I <sub>F</sub> =20mA     | λ <sub>p</sub>       | —   | 625  | —    | nm           |
| 建议使用顺向电流<br>Suggestion Forward Current                 | —                        | I <sub>F</sub> (Sug) | 5   | 10   | 20   | mA           |
| 抗静电能力 (人体模式)<br>Electrostatic Discharge Threshold(HBM) | ESD                      | —                    |     | —    | 2000 | V            |

**Note: Soldering Bath: not more than 5 seconds at 260℃。The bottom ends of plastic Reflector should be at least 2mm above the solder surface。**

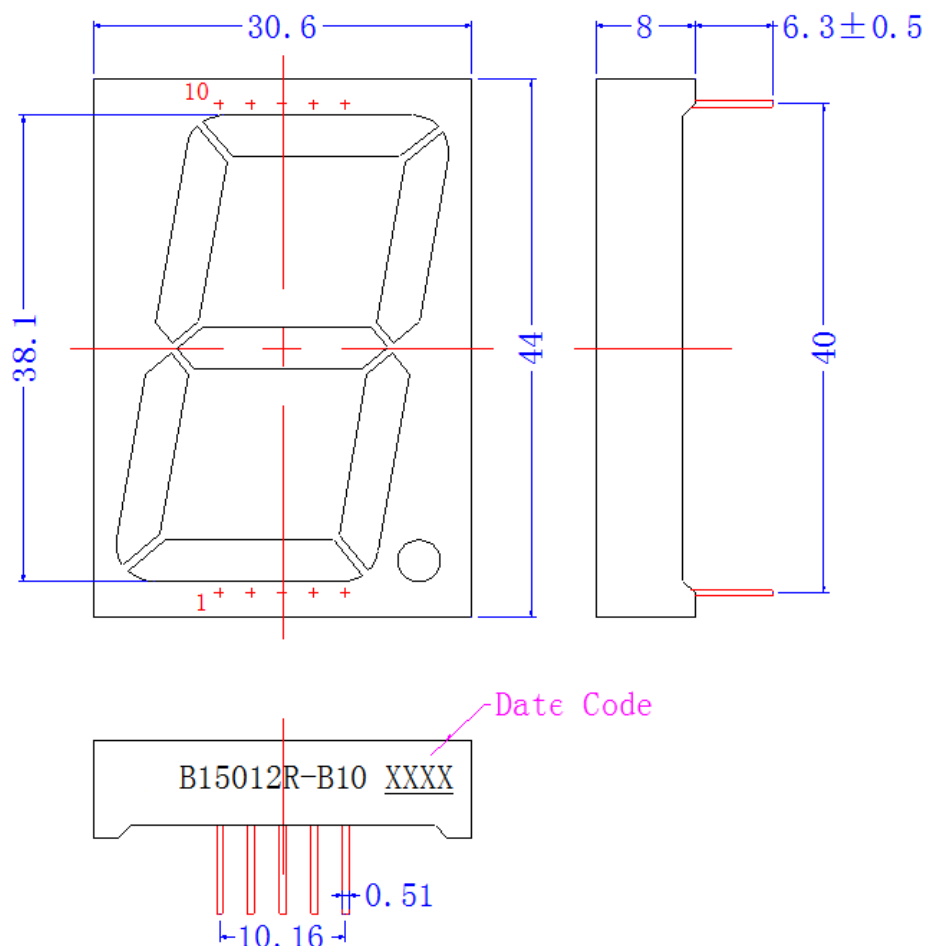
**Soldering Iron: not more than 3 seconds at 300℃ under 30W。**

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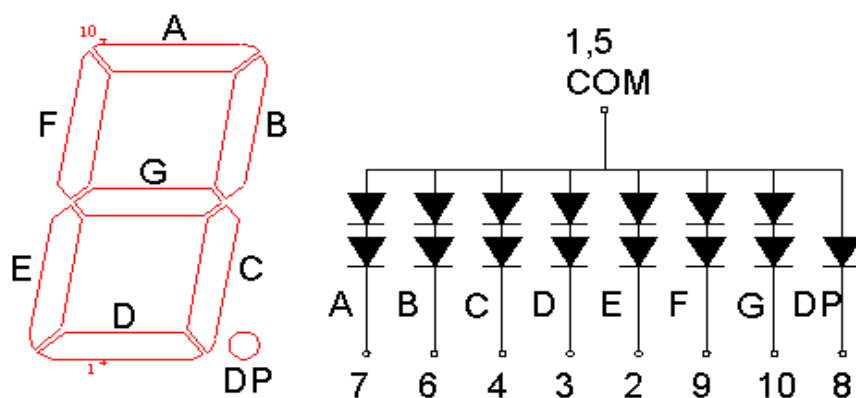
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5.结构尺寸 (Mechanical Outline) :

(未注尺寸公差 Unspecified Tolerances is: X±0.3mm)



## 6. 电路图 (Circuit Diagram) :



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## 8. 保存和焊接条件 (Storage & Soldering condition) :

- Store with care. Storing the units in bad condition
- 注意保存，保存条件不好时，会降

低膜片

will cause the reflector sheet and decrease it's adhesive power. Storage the products under the condition :temperature (  $25^{\circ}\text{C} \pm 10^{\circ}\text{C}$  ) and humidity  $65^{\circ}\text{CCRH} \pm 20^{\circ}\text{CCRH}$

与反射壳（导光板）的粘附力。

推荐保存条件为：温度  $25^{\circ}\text{C} \pm 10^{\circ}\text{C}$   
湿度

( $65^{\circ}\text{C CRH} \pm 20^{\circ}\text{C CRH}$ ) our recommendation.

- The Soldering Temperature is  $260 \pm 5^{\circ}\text{C}$  and Soldering 间小于 3 秒，  
Time should be less than 3 sec, and soldering iron 烙铁功率小于 30W.  
power should be less than 30W.
- The soldering point should be farther than 1.6mm 1.6mm。  
from body.
- 焊接温度  $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ，焊接时
- 焊接点应离产品实体大于 1.6mm。

外观判定条件(Surface check condition)

1. 外观目测条件：40W 日光灯作光源与产品相距约 1 米（环境亮度）200 Lux）检测者与产品视距为 25-30cm。

Visual check condition: Use a 40W lamp as light (Ambient luminance about 200Lux), the distance between lamp and product about one meter, between checker and product about 25-30cm for check.

标准：

1. 黑/白点大小为  $0 \leq \phi \leq 0.20\text{mm}$ ，允许有 3 个，且不在同一字划。黑/白点大小  $\phi > 0.15\text{mm}$ ，不可接受。

Standard:

the size of black dot and white dot is  $0 \leq \phi \leq 0.20\text{mm}$ , and the quantity of the dot for three are accepted, and those distance must be not in same segment. the size of black dot and white dot is  $\phi > 0.20\text{mm}$ , that is not accepted.

2. 划伤  $\phi \leq 0.1\text{mm}$ ，长度  $< 1\text{mm}$ ，最多允许 1 条；机壳表面刮花，膜纸花，当产品不反光，且发光效果不见该缺陷时，则可接受。

Below the condition are accepted:

The scar is  $\phi \leq 0.1\text{mm}$  and the length less than 1mm, the quantity of this scar for one is accepted.

Surface scar, if that cannot found when the product was luminous so that is accepted.

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2. 尺寸检测条件：依据图纸，使用计量卡尺，注意检测人为误差。

Size check condition: Use the measure ruler based on the product drawing for check, and need note that the tolerance make by operator.

3. 电性能检测条件：依据图纸，工艺，在额定工作电压或恒定的电流下，执行《FQC 成品检验标准》功能的相关

内容。

Electrical check condition: use the rated voltage or constant current for the product based on the product drawing and IE document and performance the 《FQC 成品检验标准》 for check.

| 判定类别<br>Standard                         | 判定范围<br>ITEM                           | MAJOR                                                                                                                                                                                                                                                                                                                                                                                                                                        | MINOR                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 成品检验判定标准<br>Final product check standard | 外观检验<br>Surface check condition        | <p>1.膜纸：不齐、贴歪<math>\geq 0.50\text{mm}</math>。<br/>Membrane:<br/>not uniform or defective that must be less than <math>0.50\text{mm}</math>.</p> <p>2.引脚氧化或掉铜皮、或不按要求上锡披峰。<br/>The pins are oxygenation or lose copper or cannot meet the SPEC of soldering reliability.</p> <p>3.条形歪斜、松脱、脚短/长、膜纸变形、翘起。<br/>Bar defective, loss, pins short or longer, membrane distortion, tilt.</p> <p>4.产品弯曲、变形、划伤、毛刺。<br/>Product inflect, scar, burr.</p> | <p>1.膜纸不齐导致露出或超宽<math>0.50\text{mm}</math> 内进 <math>0.50\text{mm}</math> 以下，<math>0.50\text{mm}</math> 以上；脏、皱等。<br/>Make for bare or exceed width between <math>0.50\text{mm}</math> and <math>0.50\text{mm}</math> caused by membrane were not uniform; dirty, ruck etc.</p> <p>2.产品反面非有效发光区域有手印、水渍印。<br/>Has the fingerprint or watermark on the background of the product there are not the area of luminous.</p> |
|                                          | 尺寸检验<br>Size check condition           | <p>1.长、宽、厚等重要尺寸超差<math>\geq 0.25\text{mm}</math>，其它尺寸超差在<math>0.25\text{mm}</math> 以上。<br/>The tolerance of Length, width and thick must <math>\geq 0.25\text{mm}</math> and other tolerance more than <math>0.25\text{mm}</math>.</p> <p>2.膜纸过大在 <math>0.5\text{mm}</math> 以上。<br/>Membrane over than <math>0.50\text{mm}</math></p>                                                                                                        | <p>1.虚边、毛刺等引起的尺寸超差在<math>0.25\text{mm}</math> 以下,<math>0.1\text{mm}</math> 以上。<br/>The size tolerance of product that caused by burr edge shall between <math>0.1-0.25\text{mm}</math>.</p> <p>2.小于严重缺陷的尺寸超差。<br/>Less than the important tolerance .</p>                                                                                                                                                            |
|                                          | 功能发光效果检查<br>Functional check condition | <p>1.发光颜色不符合图纸要求。<br/>The color of luminous is differenced for the SPEC.</p> <p>2.闪亮、颜色/色差、暗光、暗带与样板相差较大。<br/>Flash, color, dark light that more difference than the golden sample.</p> <p>3.膜纸漏光直径<math>\geq 0.25</math>。<br/>For the membrane the diameter of light Leakage<math>\geq 0.25</math>.</p>                                                                                                                                      | <p>1.轻微色差、暗光、暗带、暗斑。<br/>Minor of the chromatism, dark light, dark spot.</p> <p>2.两端部发光不均匀。.<br/>The luminescence is asymmetry at the two ends.</p>                                                                                                                                                                                                                                                                   |