

## SPECIFICATION FOR APPROVAL

Description : 0.32" One digit LED Display

產品規格

Type : Red, Common Anode, Black face White segment

產品型號

Product P/N : MM10323AUR1E-1

客戶型號

## 1、概述 (General)

特种显示器是一种显示特定数码、字符、图形的半导体 LED 显示器件，可根据客户要求设计外形和显示图案。它是以 LED 芯片为光源，通过设计不同的反射罩进行导光来显示面板图案。与其他显示器件相比，具有工作电压低、功耗低、多色彩、高可靠性、高稳定性、长寿命等特点，广泛应用于空调、冰箱、微波炉、洗衣机等各种显示系统。

LED Display is a semiconductor LED display showing specific digital, characters and graphics. The profile and pattern are designed according to customer s requirement. Based on LED chip as light source and shows patterns on the panel through the design of reflector which guides the surface. Comparing with other displays, it the characteristics with low voltage, consumption, multi-color, high reliability, high stability and long-life. it is widely used in room air conditioner, refrigerator, electric stove, washing machine and other display systems.

## 2、特性 (Features)

- 高可靠性 High reliability
- 响应快 Quick Response
- 低电流驱动 Low drive current
- 低功耗 Low power dissipation
- 符合 RoHS 要求 RoHS compliant
- ESD 敏感器件，静电放电敏感值：2000V（人体模式）/200V（机器模式）  
Electrostatic sensitive device, ESDS: 2000V(Human body mode)/200V(Machine mode)

## 3、特征 (Description)

- 外形尺寸 Package dimensions:
- LED 芯片材料 LED chip material:

表 1 LED 芯片材料

Table1 LED chip material

芯片材料 Die Material	发光颜色 Emitted color	线路连接方式 Connecting Form
AlGaInP	红色 Red	共阳 Usual Anode

## 4、光電參數 Electrical Optical Characteristics (Ta = 25°C):

Parameter 參數名稱	Symbol 符號	Min 最小值	Type 典型值	Max 最大值	Unit 單位	Test Condition 測試條件
Luminous Intensity 發光亮度	IV	80		95	mcd	IF=20mA
Peak Wavelength 峰值波長	$\lambda_p$				nm	IF=20mA
Dominant Wavelength 主波長	$\lambda_d$	620		625	nm	IF=20mA
Forward Voltage 正向電壓	Vf	1.8	2.0	2.5	V	IF=20mA
Reverse Current 反向漏電流	IR			50	uA	VR=5V
Suggestion Forward Current (建議)使用正向電流	IF	3	5-10	15	mA	

## 5、極限參數 Absolute Maximum Ratings (Ta=25°C):

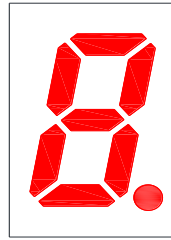
Parameter 參數名稱	額定值(Rating)	單位(Unit)
Reverse Voltage 反向電壓	5	V
Power Dissipation,Per Dice 耗散功率	50	mW/chip
Operating Temperature Ranger 工作溫度	-20~+85	°C
Storage Humidity 存貯濕度	40%~85%	RH
Storage Temperature Ranger 存貯溫度	-20~+85	°C
Soldering Temperature 焊接溫度	260°C For 3 Seconds, 烙铁温度小于 360°C	
Peak IF(ma) (1/10Duty Cycle 0.1ms Pulse Width) 瞬間脈衝電流	60	mA/chip
Continuous Forward Current 正向電流	20	mA/chip

## 6、建議使用方式 Suggested Way OF Usage :

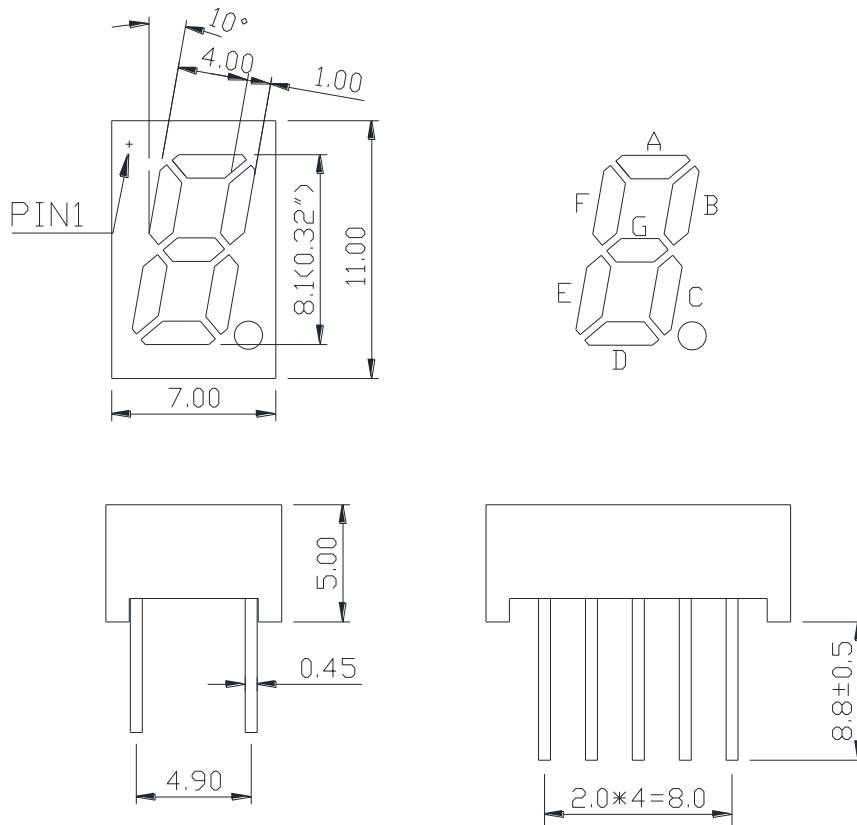
LED 應用電路建議採用恒流方式，正向脈沖電流為 5~10mA,最大不超過 15mA。

When using LED, It's circuit adopts pulse current, With DC current about 5~10mA,Not more than 15mA at maximum

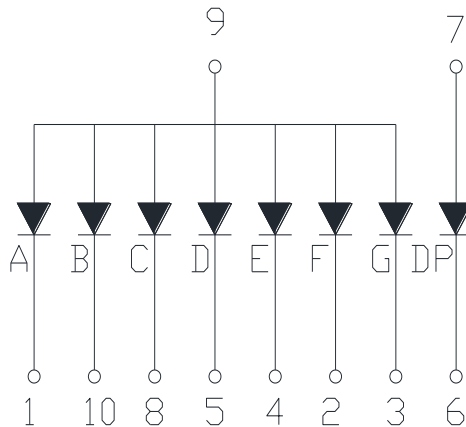
7、顯示字體 (Manifestation form of written):



8、外型尺寸 (Package Dimension):



9、電路原理圖 (Internal Circuit Diagram):



備註 (Notes):

- a、全部單位為毫米(英寸) All dimensions are in millimeters(inches) ;
- b、未注公差為±0.25mm(0.01") Tolerances are ±0.25mm(0.01") unless otherwise noted .

10、Typical Optical/Electrical Characteristics Curves  
(Ta=25°C Unless Otherwise Noted)

Fig1. Forward Current VS.Forward Voltage

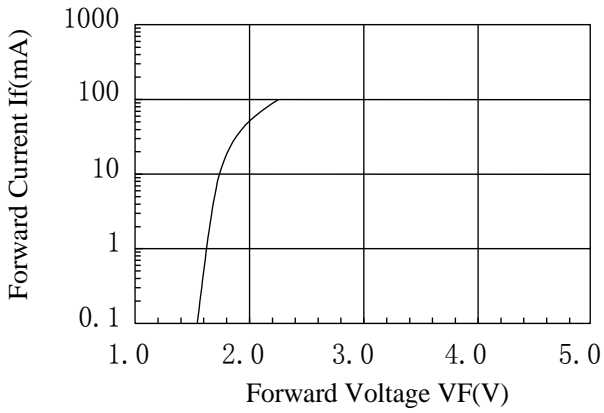


Fig2. Relative Intensity VS. Forward Current

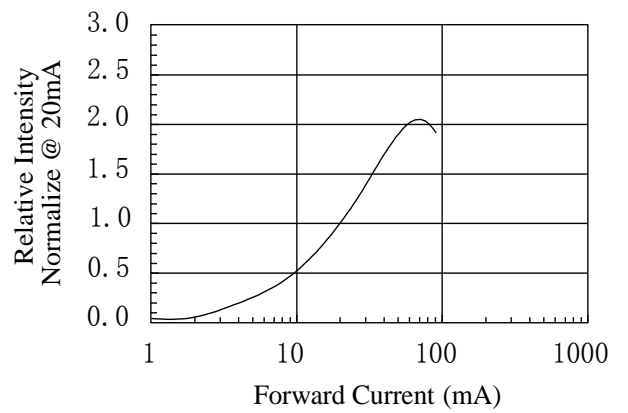


Fig3. Forward Voltage VS. Temperature

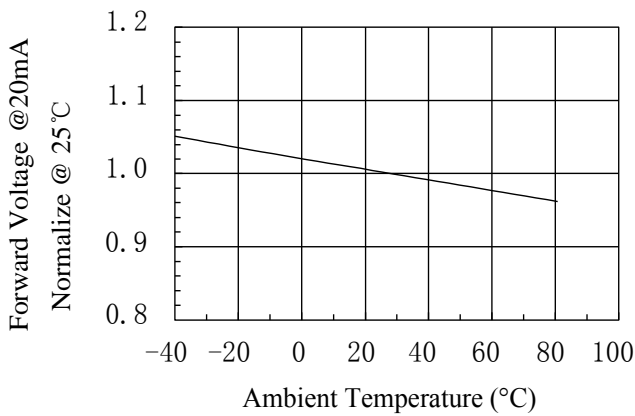


Fig4. Relative Intensity VS. Temperature

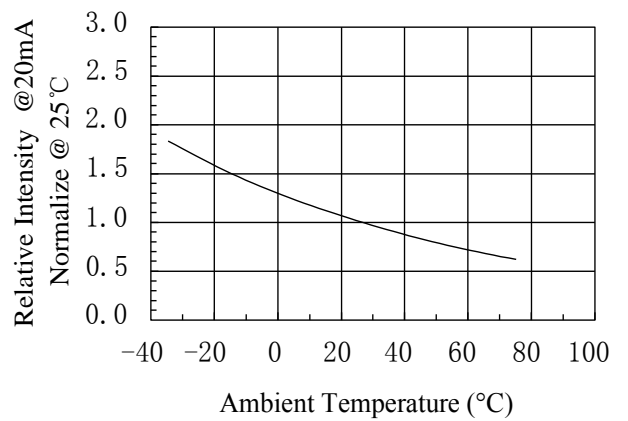
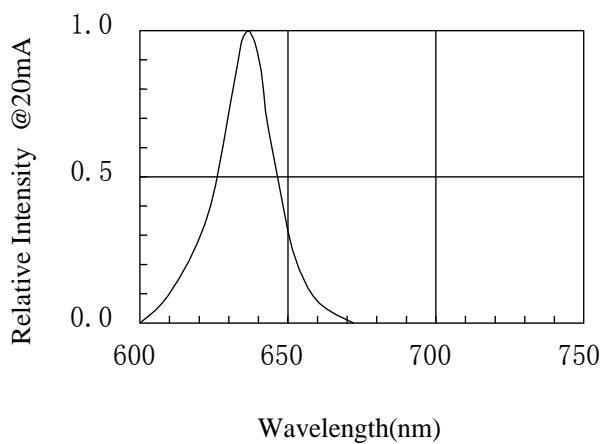


Fig5. Relative Intensity VS. Wavelength



## 11、外观判定条件 Appearance Judgment Condition

11.1 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 200Lux), 检测者与产品视距为 25-30cm。

Appearance test condition: the light source of 40W fluorescent lamp should be 1 meter away from the product (environment brightness 200 lux), the viewing distance should be in 25-30cm between tester and product.

标准: 黑. 白点大小为  $0.1 \leq \Phi < 0.15$  最多允许有 3 个, 且间距必须大于 1cm;

黑. 白点大小为  $0.15 \leq \Phi < 0.20$  最多允许有 2 个, 且间距必须大于 1cm;

黑. 白点大小为  $0.20 \leq \Phi < 0.25$  最多允许有一个;

划伤  $\Phi \leq 0.1\text{mm}$ , 长度  $< 1\text{mm}$ , 最多允许 1 条。

Standard:

Black or white spot size:  $0.1 \leq \Phi < 0.15$ , at most 3 allowed, and spacing must be  $> 1$  cm;

Black or white spot size:  $0.15 \leq \Phi < 0.20$ , at most 2 allowed, and spacing must be  $> 1$  cm,

Black or white spot size:  $0.20 \leq \Phi < 0.25$ , at most 1 allowed;

Cut:  $\Phi \leq 0.1\text{mm}$ , length  $< 1$  mm, at most 1 allowed.

11.2 发光效果检验条件: 在环境亮度  $< 9\text{Lux}$  的条件下目测, 视距应在 25-30cm 。

Lighting test condition: Viewing distance should be in 25 - 30 cm under the brightness within 9 lux.

标准: 黑. 白点大小为  $0.1 \leq \Phi < 0.15$  最多允许有 3 个, 且间距必须大于 1cm,

黑. 白点大小为  $0.15 \leq \Phi < 0.20$  最多允许有 2 个, 且间距必须大于 1cm,

黑. 白点大小为  $0.20 \leq \Phi < 0.25$  最多允许有一个, 划伤  $\Phi \leq 0.1\text{mm}$ , 长度  $< 1\text{mm}$ , 最多允许 1 条;

尺寸检测条件: 依据图纸, 使用计量卡尺

电性能检测条件: 在额定工作电压或恒定的电流下, 执行《QA 成品检验方法》功能的相关内容

Standard:

Black or white spot size:  $0.1 \leq \Phi < 0.15$ , at most 3 allowed, and spacing must be  $> 1$  cm;

Black or white spot size:  $0.15 \leq \Phi < 0.20$ , at most 2 allowed, and spacing must be  $> 1$  cm,

Black or white spot size:  $0.20 \leq \Phi < 0.25$ , at most 1 allowed;

Cut:  $\Phi \leq 0.1\text{mm}$ , length  $< 1$  mm, at most 1 allowed.

Test condition: According to the drawings; Under the rated voltage and constant current.

Test tool: caliper

Test standard: 《 QA Product Test Method 》

## 12、使用注意事项 (Precautions For Use) :

当使用此产品时, 请遵从规格书中给出的极限参数值的要求和指示。客户使用时因超出极限参数要求而造成的损失, 我司不承担任何责任。When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. We assume no responsibility for any damage resulting from use of the product, which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.