

# 产品规格承认书

## SPECIFICATION FOR APPROVAL

客户名称 (CUSTOMERS) \_\_\_\_\_

客户型号 (CUSTOMER P/N) \_\_\_\_\_

产品描述 (DESCRIPTION) 0.20 inch 2-digit, CC, super red

本公司型号 (LITEKEY P/N) LSD2020AR

送样日期 (SAMPLE DATE) \_\_\_\_\_

|                                                            |                                             |                                       |                                       |
|------------------------------------------------------------|---------------------------------------------|---------------------------------------|---------------------------------------|
| 产品说明书<br>Specification <input checked="" type="checkbox"/> | 检验报告<br>INSPECTION <input type="checkbox"/> | 样品<br>SAMPLE <input type="checkbox"/> | 其它<br>OTHERS <input type="checkbox"/> |
| 核准 (APPROVED BY)                                           | 审核 (CHECKED BY)                             | 校 对 (PROOFREAD BY)                    | 制作 (PREPARED BY)                      |
|                                                            |                                             |                                       |                                       |

### 更改履历表

| 版本 Version | 日期 Date       | 描述 Description       | 编制 Maker  |
|------------|---------------|----------------------|-----------|
| V.3.0      | March 2, 2019 | Version 3.0 Released | John Chou |
|            |               |                      |           |
|            |               |                      |           |

### 客 户 判 定 结 果 (CUSTOMER VERDICT)

|                                 |                                  |
|---------------------------------|----------------------------------|
| 承认(OK) <input type="checkbox"/> | 不承认(NG) <input type="checkbox"/> |
|---------------------------------|----------------------------------|

承认签名(APPROVED BY):

承认时间(APPROVED DATE):

改善意见(IMPROVED ADVICE):

## PART NO.: LSD2020AR

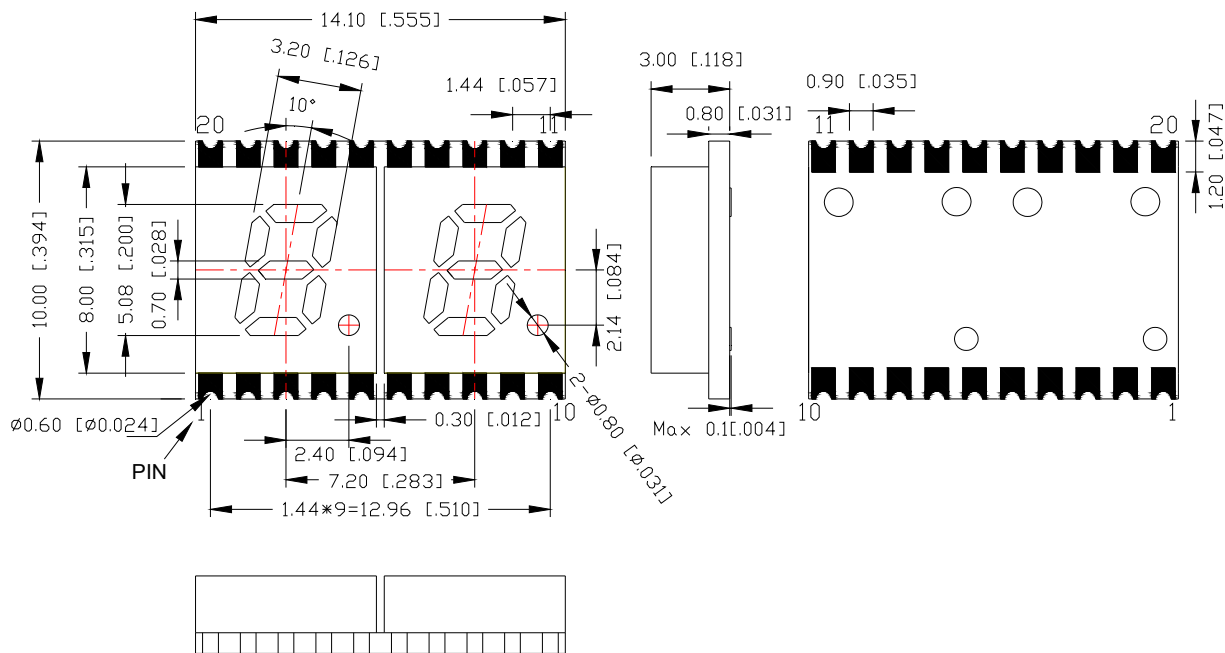
### 1. Description:

- Grey Face, White Epoxy
- Common Cathode Display
- Red Emitting Color
- Packing: Tape & Reel, 1000pcs/Reel
- RoHS Compliant

### 2. Features:

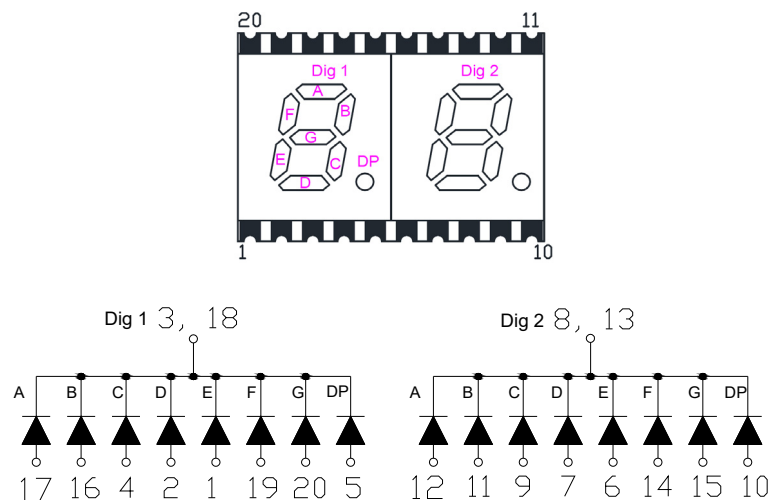
- High intensity and reliability
- High quality, Low power requirement
- IC compatible, Easy assembly
- ESD1000V

### 3. Package Dimensions:



NOTES: All dimensions are in millimeters (inches) tolerance are  $\pm 0.25\text{mm}$  (0.010) unless otherwise noted

### 4. Internal Circuit Diagram:



## 5. Selection Guide:

| PART NO.  | EMITTING COLOR   | CHIP MATERIAL |
|-----------|------------------|---------------|
| LSD2020AR | Super Bright Red | AlGaInP       |

## 6. Absolute Maximum Ratings at Ta=25°C:

| PARAMETER                                                              | Max.             | UNIT  |
|------------------------------------------------------------------------|------------------|-------|
| Power Dissipation Per Segment                                          | 52               | mW    |
| Peak Forward Current Per Segment<br>(1/10duty cycle 0.1ms pulse width) | 60               | mA    |
| Average Forward Current Per Segment                                    | 20               | mA    |
| Derating Linear From 25°C Per Segment                                  | 0.33             | mA/°C |
| Reverse Voltage Per Segment                                            | 5                | V     |
| Operating Temperature Range                                            | -40°C to + 105°C |       |
| Storage Temperature Range                                              | -40°C to + 105°C |       |
| Lead Soldering Temperature 260°C at 1.6mm From Body for 3 seconds      |                  |       |

## 7. Electrical/Optical Characteristics at Ta=25°C:

| PARAMETER                      | SYMBOL          | MIN. | TYP. | MAX. | UNIT          | TEST CONDITION    |
|--------------------------------|-----------------|------|------|------|---------------|-------------------|
| Luminous Intensity Per Segment | $I_V$           | -    | 35   | -    | mcd           | $I_F=20\text{mA}$ |
| Dominant Wavelength            | $\lambda_D$     | -    | 640  | -    | nm            | $I_F=20\text{mA}$ |
| Spectral Line Half-Width       | $\Delta\lambda$ | -    | 30   | -    | nm            | $I_F=20\text{mA}$ |
| Forward Voltage Per Dice       | $V_F$           | -    | 2.0  | 2.6  | V             | $I_F=20\text{mA}$ |
| Reverse Current Per Dice       | $I_R$           | -    | -    | 10   | $\mu\text{A}$ | $V_R=5\text{V}$   |

## 8. Recommended Soldering Pattern:



## 9. Electrical / Optical Characteristics Curves: ( $T_a = 25^\circ\text{C}$ Unless Otherwise Noted)

FIG. 1 Forward Current vs. Forward Voltage

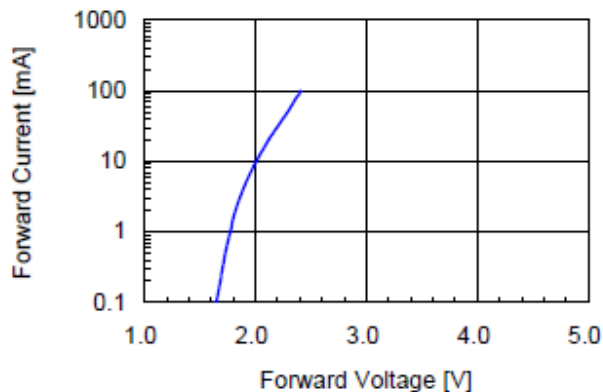


FIG. 2 Relative Intensity vs. Forward Current

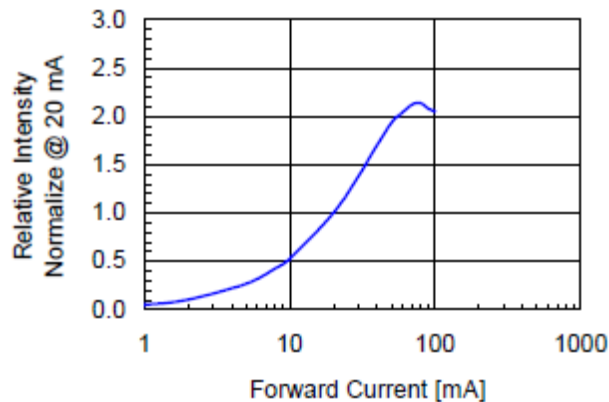


FIG. 3 Forward Voltage vs. Temperature

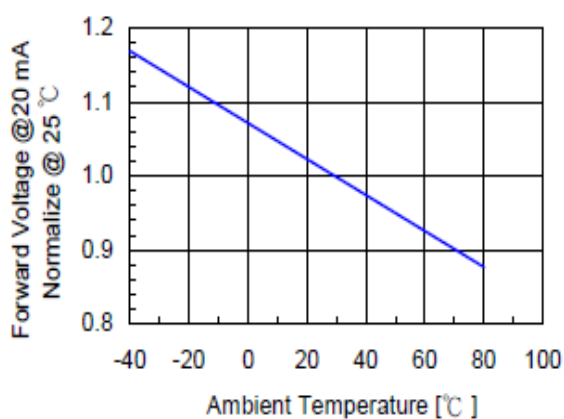


FIG. 4 Relative Intensity vs. Temperature

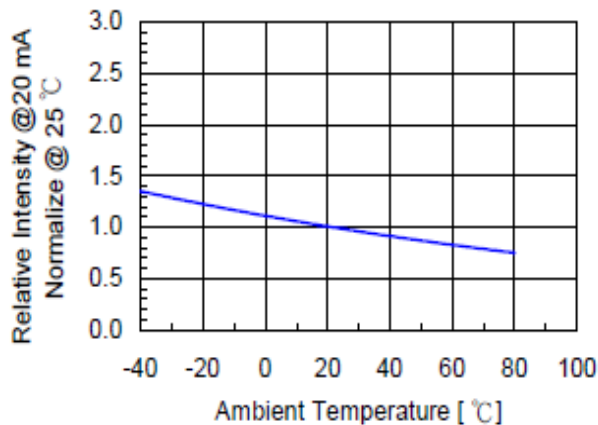
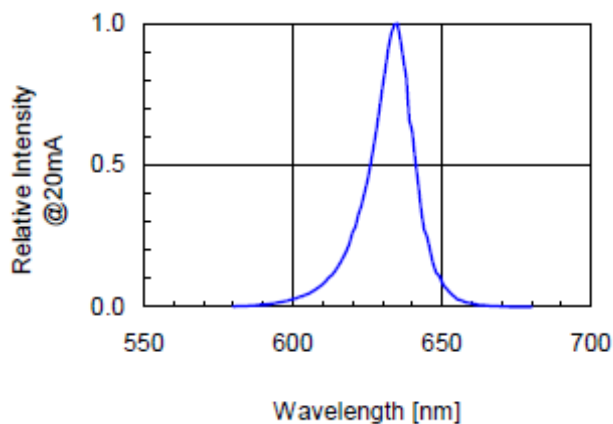
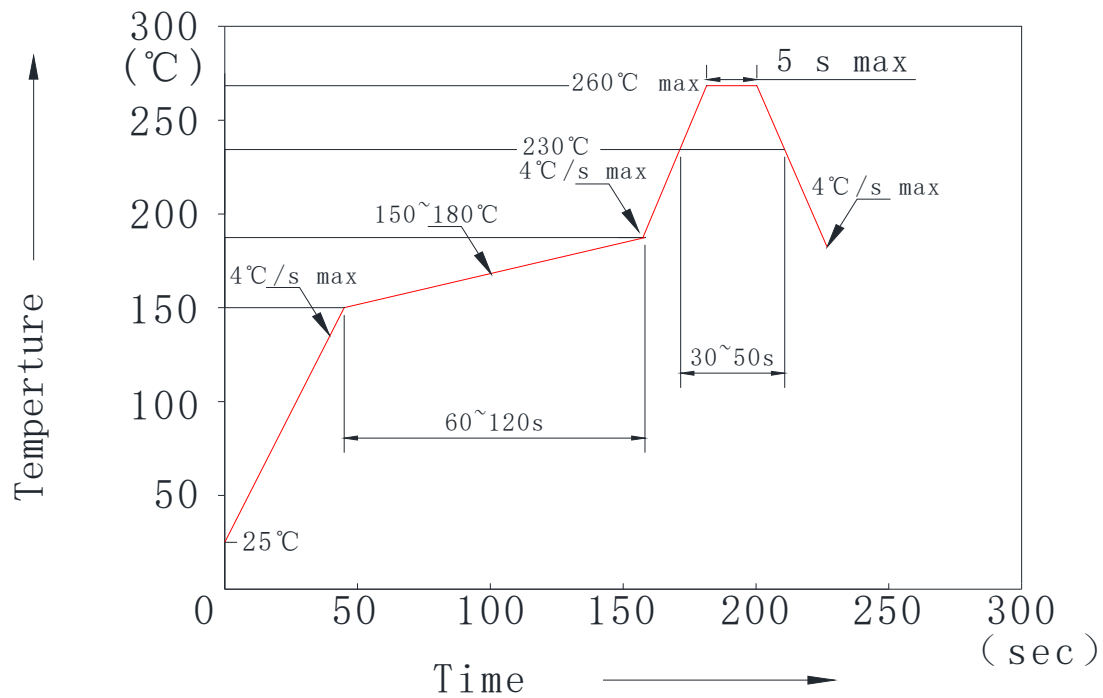


FIG. 5 Relative Intensity vs. Wavelength



## 10. RECOMMENDED SMT CONDITION:



### 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.