



## Data Sheet

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Customer:

Part No:

Sample No:

Description:

Item No:

CLS-8012DUR-11

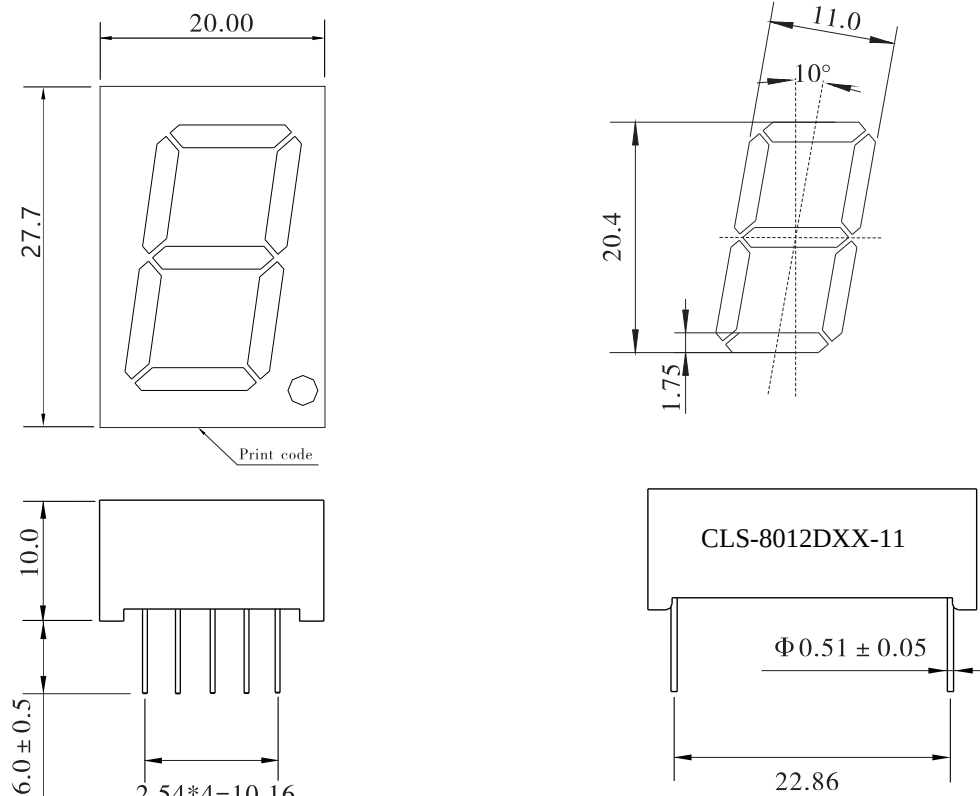
0.8 inch 1 Digit Red Color

| Customer |            |          |      |
|----------|------------|----------|------|
| Check    | Inspection | Approval | Date |
|          |            |          |      |

## Descriptions

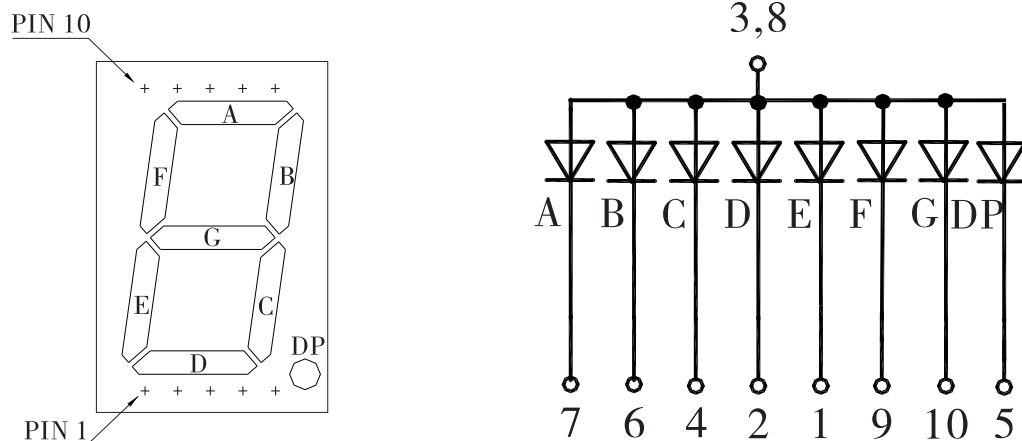
1. Emitting Color: Super Red
2. Lens Color: White Diffused
3. Surface Ink Color : Black
4. Dice Material: InGaN/GaN

## Outline Drawing



Tolerance is  $\pm 0.25$ mm unless otherwise noted, Unit=mm  
Pin bending  $\leq$  length\*1%

## Internal Circuit Diagram(C.A.)



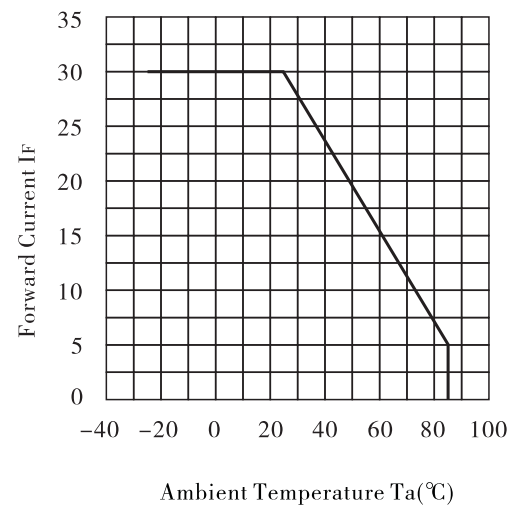
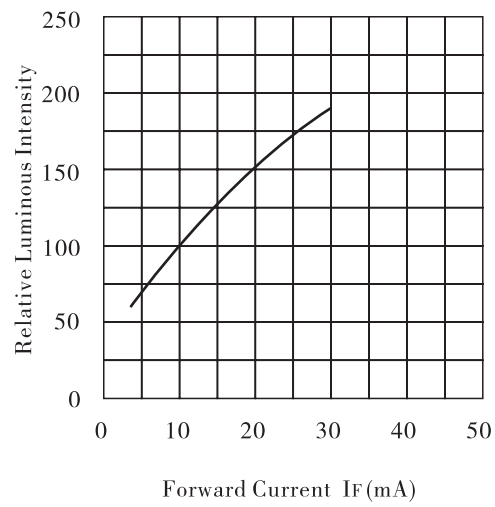
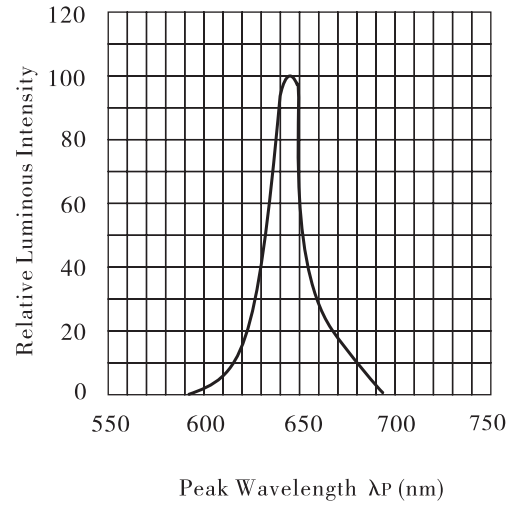
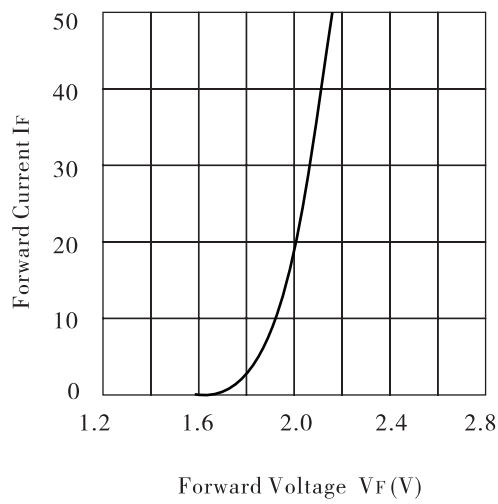
**Electrical Optical Characteristics(Ta=25°C)**

| Parameter                | Symbol         | Super Red |      |      | Unit | Test Condition |
|--------------------------|----------------|-----------|------|------|------|----------------|
|                          |                | Min       | Typ  | Max  |      |                |
| Forward Voltage          | V <sub>F</sub> | ---       | 2.00 | 2.40 | V    | IF=20mA        |
| Luminous Intensity       | I <sub>V</sub> | 5.0       | 9.8  | ---  | mcd  | IF=10mA        |
| Peak Wavelength          | λ <sub>P</sub> | ---       | 645  | ---  | nm   | IF=20mA        |
| Dominant Wavelength      | λ <sub>d</sub> | ---       | 635  | ---  | nm   | IF=20mA        |
| Spectral Line half-width | Δλ             | ---       | 20   | ---  | nm   | IF=20mA        |
| Reverse Leakage Current  | I <sub>R</sub> | ---       | ---  | 50   | μA   | VR=5V          |

**Absolute Maximum Parameters(Ta=25°C)**

| Parameter                   | Symbol           | Condition      | Rating     | Unit   |
|-----------------------------|------------------|----------------|------------|--------|
| Power Dissipation           | P <sub>D</sub>   | ---            | 80         | mW     |
| Reverse Voltage             | V <sub>R</sub>   | ---            | 5          | V      |
| Forward Average Current     | I <sub>F</sub>   | ---            | 30         | mA     |
| Temperature Coefficient     | I/C              | ---            | 0.33       | mA/ °C |
| Pulse Current               | IFP              | Duty=1/10,1kHz | 100        | mA     |
| Operating Temperature Range | T <sub>opr</sub> | ---            | -25 ~ +85  | °C     |
| Storage Temperature Range   | T <sub>stg</sub> | ---            | -30 ~ +100 | °C     |
| Soldering Condition         | T <sub>sd</sub>  | ---            | 260°C/5sec | °C     |

Typical Electro/Optical Characteristic Curves( $T_a=25^{\circ}\text{C}$ )



### Reliability Test Conditions

| Test Item                                   | Test Condition                             | Result | Judgment Criteria                                                                                                                                                                                        |
|---------------------------------------------|--------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Consecutive operating life test             | IF=20mA, T=25℃, t=168h                     | 0/10   | Forward Voltage<br>$VF(V) = \text{Upper Limit} \times 1.2$<br>Reverse Leakage Current<br>$IR(\mu A) = \text{Upper Limit} \times 2.0$<br>Luminous Intensity IV<br>$(mcd) = \text{Lower Limit} \times 0.7$ |
| High temperature storage life test          | T=100℃, t=168h                             | 0/10   |                                                                                                                                                                                                          |
| Low temperature storage life test           | T=-25℃, t=168h                             | 0/10   |                                                                                                                                                                                                          |
| High temperature humidity storage life test | T=85 ± 2℃, RH=85% ± 3, t=168h              | 0/10   |                                                                                                                                                                                                          |
| Temperature cycle test                      | -25℃~25℃~100℃<br>30min 5min 30min 10cycles | 0/10   |                                                                                                                                                                                                          |
| Thermal shock test                          | 100℃ 0℃<br>5min 5min 20cycles              | 0/10   |                                                                                                                                                                                                          |
| Soldering heat test                         | T=260 ± 5℃, t=10s ± 1s                     | 0/10   |                                                                                                                                                                                                          |
| Solderability test                          | T=235 ± 5℃, t=5s ± 0.5s                    | 0/10   | Steeped Part ≥ 95%                                                                                                                                                                                       |
| Fall test                                   | h=100cm, 50times                           | 0/10   | Surface Appearance<br>Photoelectric<br>Properties Intact                                                                                                                                                 |
| Terminal strength test                      | W=9.8N, t=30 ± 5s                          | 0/10   |                                                                                                                                                                                                          |
| Lead bending test                           | W=4.9N, 2times                             | 0/10   |                                                                                                                                                                                                          |