



## Data Sheet

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Customer:

Part No:

Sample No:

Description:

Item No:

CLS-10012CUR-11

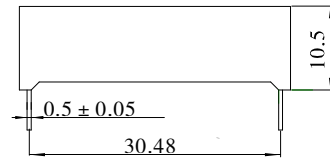
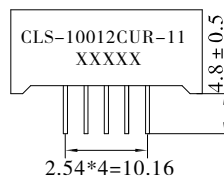
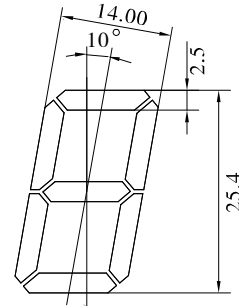
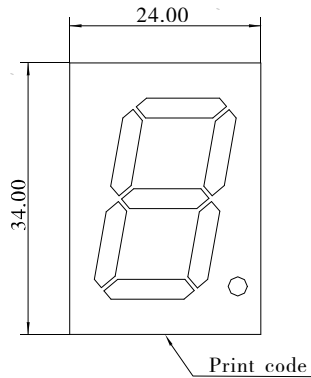
1.0 inch 1 Digit Red Color

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

## Descriptions

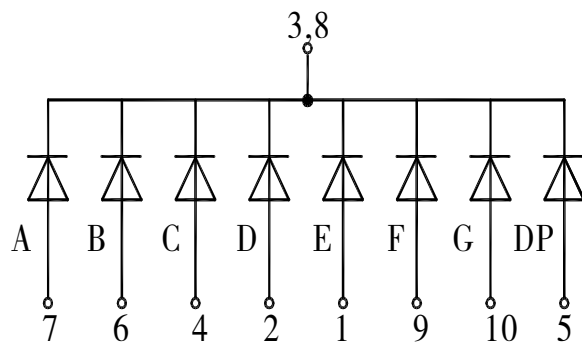
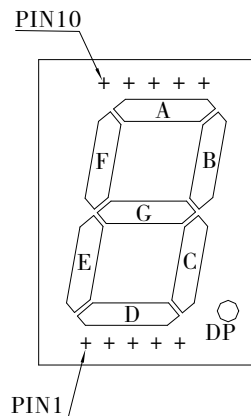
1. Emitting color:Red
2. Lens Color:White Diffused
3. Surface black color :Black
4. Dice material:AlGaInP/GaAs

## Outline drawing



未注公差:  $\pm 0.25\text{mm}$   
Tolerance is  $\pm 0.25\text{mm}$  unless otherwise noted  
PIN弯曲  $\leq$  长度\*1%  
PIN Bending  $\leq$  Length\*1%

## Internal Circuit Diagram (C.C.)



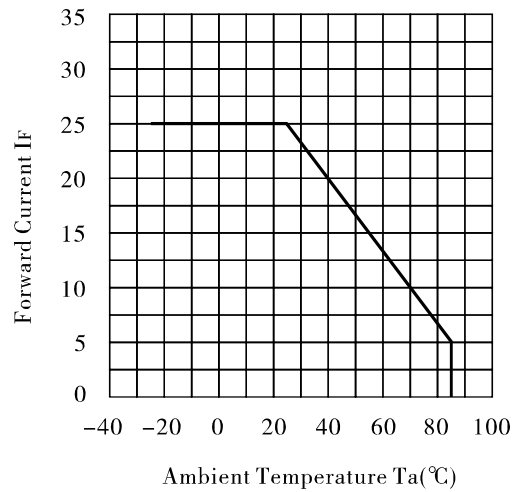
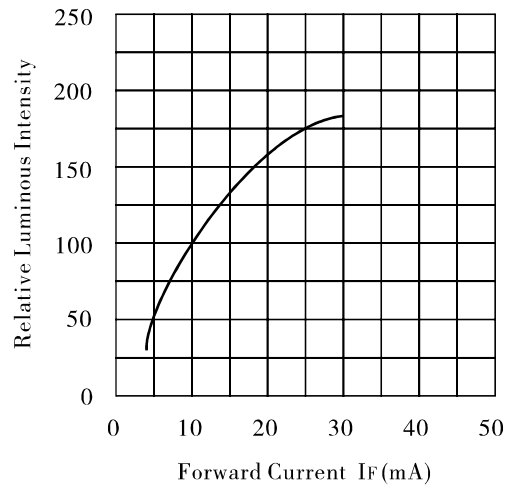
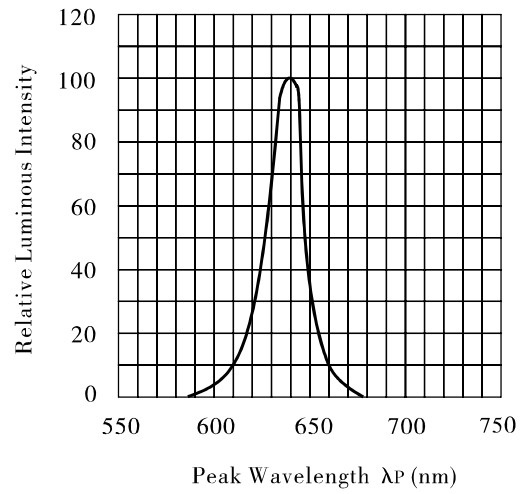
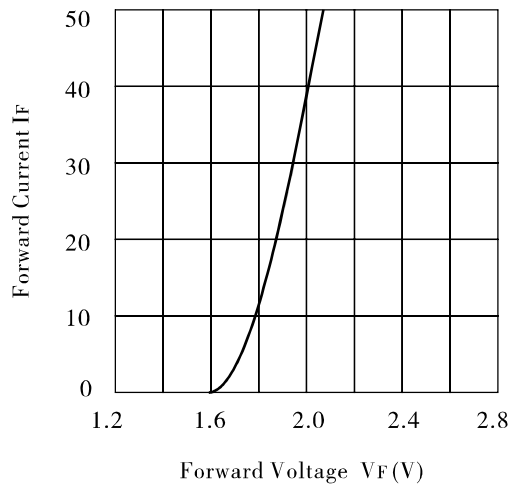
**Electrical optical characteristics ( Ta=25℃ )**

| Parameter                | Symbol         | Ultra Red |      |     | Unit | Test Condition     |
|--------------------------|----------------|-----------|------|-----|------|--------------------|
|                          |                | Min       | Typ  | Max |      |                    |
| Forward Voltage          | V <sub>F</sub> | ---       | 2.0  | 2.4 | V    | IF=20mA            |
| Luminous Intensity       | I <sub>V</sub> | 13.7      | 26.6 | --- | mcd  | IF=20mA            |
| 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   | V <sub>R</sub> =5V |

**Absolute maximum parameters ( Ta=25℃ )**

| Parameter                   | Symbol | Condition      | Rating     | Unit |
|-----------------------------|--------|----------------|------------|------|
| Power Dissipation           | PD     | ---            | 80         | mW   |
| Reverse Voltage             | VR     | ---            | 5          | V    |
| Forward Average Current     | IF     | ---            | 30         | mA   |
| Temperature coefficient     | I/C    | ---            | 0.33       | mA/℃ |
| Pulse Current               | IFP    | Duty=1/10,1kHz | 100        | mA   |
| Operating Temperature Range | Topr   | ---            | -25 ~ +85  | ℃    |
| Storage Temperature Range   | Tstg   | ---            | -30 ~ +100 | ℃    |
| Soldering Condition         | Tsd    | ---            | 260/5sec   | ℃    |

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                   | 0/12   | Forward Voltage<br>$V_F(V) = \text{Upper Limit} \times 1.2$<br>Reverse Leakage Current<br>$I_R(\mu A) = \text{Upper Limit} \times 2.0$<br>Luminous Intensity Iv<br>(mcd)=Lower Limit $\times 0.7$ |
| High temperature storage life test          | T=100℃, t=168h                           | 0/12   |                                                                                                                                                                                                   |
| Low temperature storage life test           | T=-25℃, t=168h                           | 0/12   |                                                                                                                                                                                                   |
| high Temperature humidity storage life test | T=85 ± 2℃, RH=85% ± 3, t=168h            | 0/12   |                                                                                                                                                                                                   |
| Temperature cycle test                      | -25℃~25℃~100℃, 30min 5min 30min 10cycles | 0/12   |                                                                                                                                                                                                   |
| Thermal shock test                          | 100℃ 0℃<br>5min 5min 20 cycles           | 0/12   |                                                                                                                                                                                                   |
| Soldering heat test                         | T=260 ± 5℃, t=10s ± 1s                   | 0/12   |                                                                                                                                                                                                   |
| Solderability test                          | T=230 ± 5℃, t=5s ± 0.5s                  | 0/12   | Steeped Part ≥ 95%                                                                                                                                                                                |
| Fall test                                   | h=100cm, Free fall, 3times               | 0/12   | Intact                                                                                                                                                                                            |
| Terminal strength test                      | W=9.8N, t=30 ± 5s                        | 0/12   |                                                                                                                                                                                                   |
| Lead Bending test                           | W=4.9N, 2times                           | 0/12   |                                                                                                                                                                                                   |