



# PRODUCT SPECIFICATION

**Model No : CSS-2310T9/CSS-2311T9**

## Descriptions:

- 2.3 Inch Single Digit Alphanumeric Display
- Emitting Color: Super-Bright Yellow



| CUSTOMER APPROVED | APPROVED BY | CHECKED BY | PREPARED BY |
|-------------------|-------------|------------|-------------|
| SIGNATURES        |             |            |             |
|                   |             |            |             |

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**Model No : CSS-2310T9/2311T9**

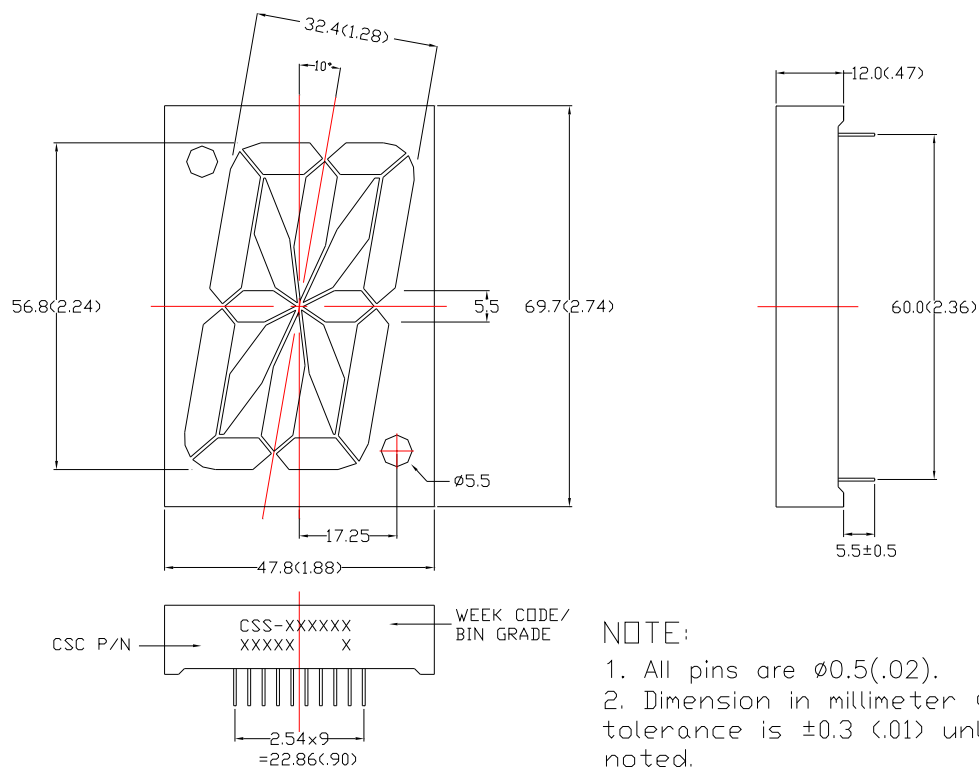
■ **Features -**

1. 2.24 inch (56.8 mm) digit height.
2. Case mold type.
3. RoHs compliant.
4. Low power consumption.
5. Easy mounting on P.C. board or socket.

■ **Device Selection Guide -**

| Part No.   | Chip     |                        | Description    |
|------------|----------|------------------------|----------------|
|            | Material | Emitted Color          |                |
| CSS-2310T9 | AlGaInP  | Super-Bright<br>Yellow | Common Anode   |
| CSS-2311T9 |          |                        | Common Cathode |

■ **Package Dimensions -**



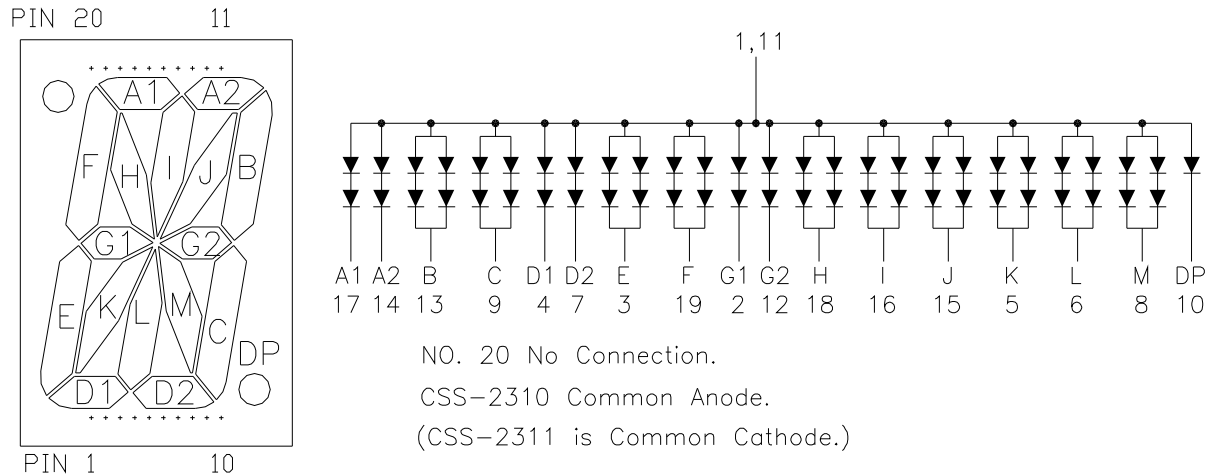
NOTE:

1. All pins are  $\phi 0.5(.02)$ .
2. Dimension in millimeter (inch), and tolerance is  $\pm 0.3 (.01)$  unless otherwise noted.



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### Internal Circuit Diagrams -



### Absolute Maximum Rating -

(Ta=25°C)

| Parameter                                                               | Symbol | Rating    | Unit  |
|-------------------------------------------------------------------------|--------|-----------|-------|
| Power Dissipation Per Dice                                              | Pd     | 65        | mW    |
| Continuous Forward Current Per Dice                                     | IAF    | 25        | mA    |
| Peak Current Per Dice (Duty Cycle 1/10, 1kHz)                           | IPF    | 90        | mA    |
| Derating Linear From 25°C Per Dice                                      | -      | 0.33      | mA/°C |
| Reverse Voltage Per Dice                                                | VR     | 5         | V     |
| Operating Temperature                                                   | Topr   | -25 ~ +85 | °C    |
| Storage Temperature                                                     | Tstg   | -25 ~ +85 | °C    |
| Solder temperature 1/16 inch below seating plane for 3 seconds at 260°C |        |           |       |



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■ Electro-optical Characteristics -

(Ta=25°C)

| Parameter                         | Symbol           | Min. | Typ.     | Max.     | Unit    | Condition |
|-----------------------------------|------------------|------|----------|----------|---------|-----------|
| Forward Voltage Per Segment (DP)  | VF               | -    | 4.2(2.1) | 5.2(2.6) | V       | IF=20mA   |
| Luminous Intensity Per Segment    | Iv               |      | 60       | -        | mcd     | IF=20mA   |
| Peak Emission Wavelength          | $\lambda_p$      | -    | 593      | -        | nm      | IF=20mA   |
| Spectrum Radiation Bandwidth      | $\Delta \lambda$ | -    | 20       | -        | nm      | IF=20mA   |
| Reverse Current                   | IR               | -    | -        | 100      | $\mu A$ | VR=10V    |
| Luminous Intensity Matching Ratio | IV-m             | -    | -        | 2 : 1    | -       | IF=20mA   |



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## ■ Typical Electrical / Optical Characteristics Curves -

(Ta = 25°C Unless Otherwise Noted)

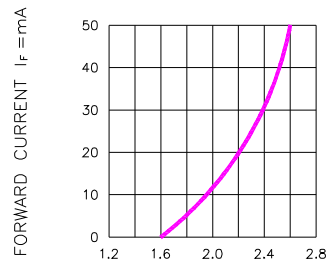


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

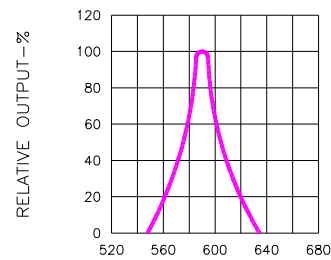


Fig.2 SPECTRAL RESPONSE

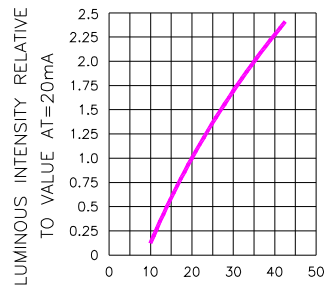


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

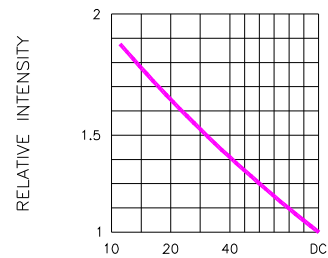


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

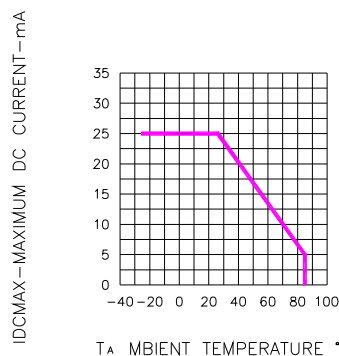


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE

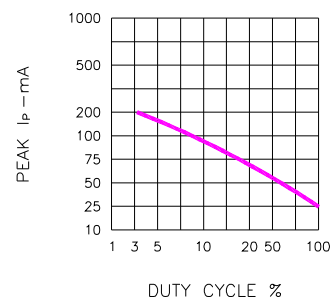


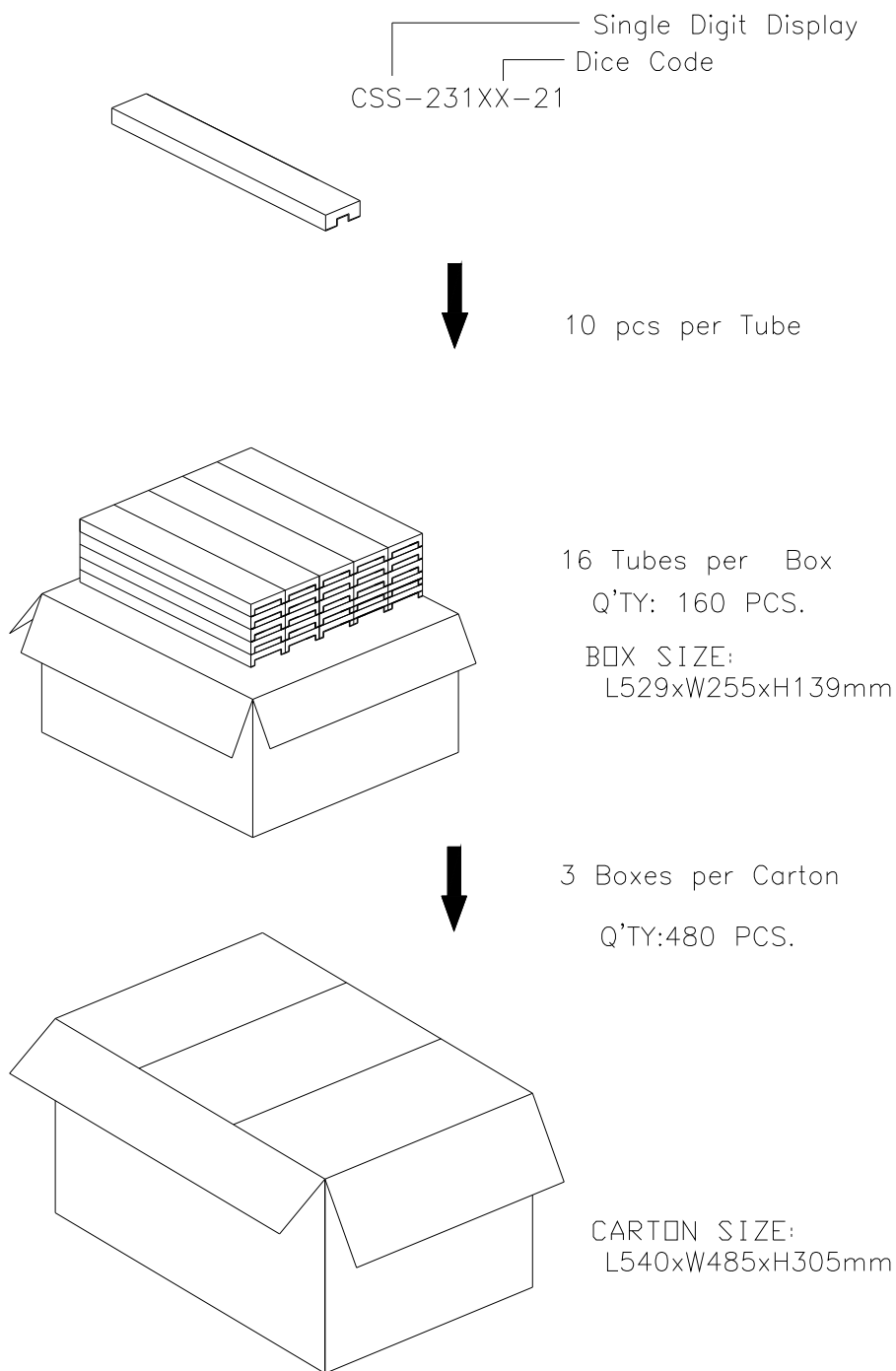
Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE f=1 KHz)



|           |            |
|-----------|------------|
| Spec. No. | PS-ND-0712 |
| Rev.      | A          |

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## ■ Package Dimensions



Note: The specifications may be changed without prior notice. Please contact us for the latest specifications.