



# PRODUCT SPECIFICATION

**Model No:CSD-S20240T9/S20241T9**

## Descriptions:

- 0.2 Inch Dual Digit SMD Display
- Emitting Color : Super Bright Yellow



| CUSTOMER APPROVED<br>SIGNATURES | APPROVED BY | CHECKED BY | PREPARED BY |
|---------------------------------|-------------|------------|-------------|
|                                 |             |            |             |

**CHINA SEMICONDUCTOR CORPORATION**  
Address:2FL. NO.909,Chung-Cheng Road,  
Chung-Ho City Taipei Hsien,Taiwan.

Tel:886-2-2223-9696  
Fax:886-2-2223-9377

**OPTO PLUS TECHNOLOGIES CO.,LTD**  
Address:696 Shun jiang Rd.,Ji Shan St.Shaoxing,  
ZheJiang,China

Tel:86-0575-88623888  
Fax:86-0575-88623112



**Model No: CSD-S20240/S20241T9**

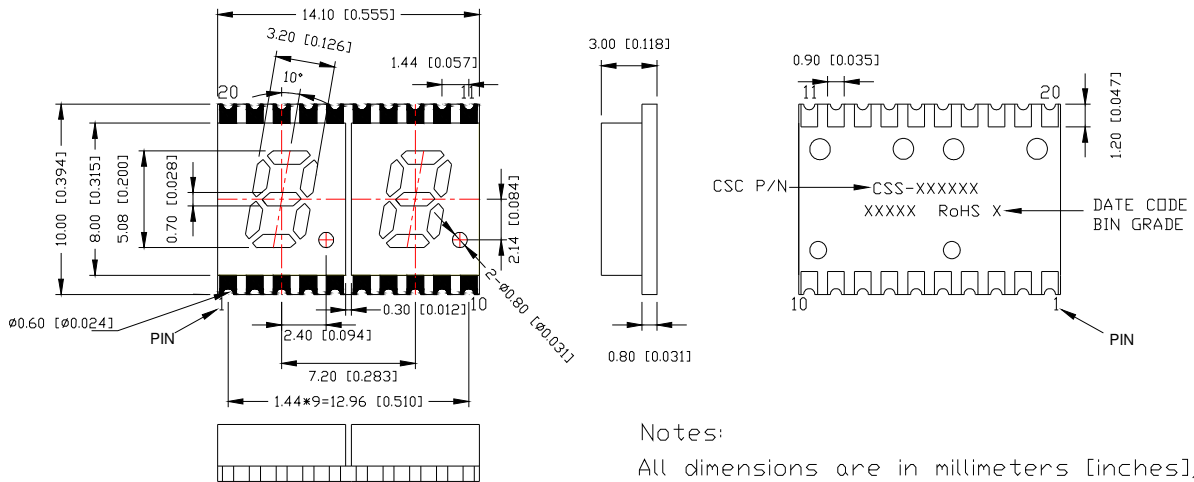
**Features -**

1. 0.2 inch (5.08mm) digit height.
2. Qualified according to JEDEC moisture sensitivity Level 2a.
3. RoHS compliant.
4. Low power consumption.
5. Easy mounting on P.C. board.

**Device Selection Guide -**

| Model No.    | Chip     |                     | Description    |
|--------------|----------|---------------------|----------------|
|              | Material | Emitting Color      |                |
| CSD-S20240T9 | AlGaInP  | Super Bright Yellow | Common Anode   |
| CSD-S20241T9 | AlGaInP  | Super Bright Yellow | Common Cathode |

**Mechanical Dimensions -**

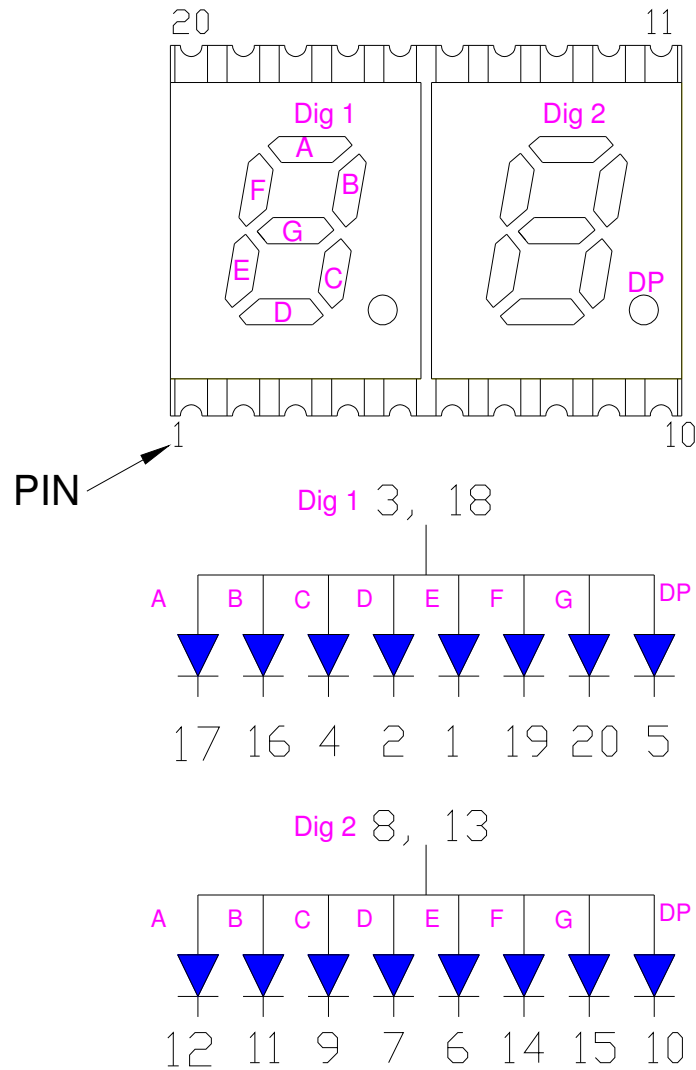


Notes:  
All dimensions are in millimeters [inches],  
and tolerance is ±0.25 [0.010]  
unless otherwise noted.



Model No: CSD-S20240/S20241T9

Internal Circuit Diagrams -



CSD-S20240 Common Anode  
(CSD-S20241 Common Cathode)



Model No: CSD-S20240/S2024T9

■ Absolute Maximum Rating -

(Ta=25°C)

| Parameter                                   | Symbol           | Rating     | Unit  |
|---|------------------|------------|-------|
| Power Dissipation Per Dice                  | P <sub>AD</sub>  | 70         | mW    |
| Continuous Forward Current Per Dice         | I <sub>AF</sub>  | 25         | mA    |
| Peak Current Per Dice(duty cycle 1/10,1KHz) | I <sub>PF</sub>  | 90         | mA    |
| Derating Linear From 25°C Per Dice          | -                | 0.33       | mA/°C |
| Reverse Voltage Per Dice                    | V <sub>R</sub>   | 5          | V     |
| Operating Temp.                             | T <sub>opr</sub> | -40 ~ +105 | °C    |
| Storage Temp.                               | T <sub>stg</sub> | -40 ~ +105 | °C    |

Note:Solder temperature 1/16 inch below seating plane for 3 seconds at 260°C

■ Electro-optical Characteristics -

(Ta=25°C)

| Parameter                         | Symbol           | Min. | Typ. | Max. | Unit | Condition            |
|-----------------------------------|------------------|------|------|------|------|----------------------|
| Forward Voltage Per Segment       | V <sub>F</sub>   | -    | 2.1  | 2.8  | V    | I <sub>F</sub> =20mA |
| Luminous Intensity Per Segment    | I <sub>v</sub>   | 3    | 8    | -    | mcd  | I <sub>F</sub> =10mA |
| Peak Emission Wavelength          | λ <sub>P</sub>   | -    | 592  | -    | nm   | I <sub>F</sub> =20mA |
| Spectrum Radiation Bandwidth      | Δλ               | -    | 20   | -    | nm   | I <sub>F</sub> =20mA |
| Reverse Current                   | I <sub>R</sub>   | -    | -    | 100  | μA   | V <sub>R</sub> =5V   |
| Luminous Intensity Matching Ratio | I <sub>V-m</sub> | -    | -    | 2:1  | -    | I <sub>F</sub> =10mA |



**Model No: CSD-S20240/S20241T9**

**Typical Electrical / Optical Characteristics Curves -**

**(Ta = 25°C Unless Otherwise Noted)**

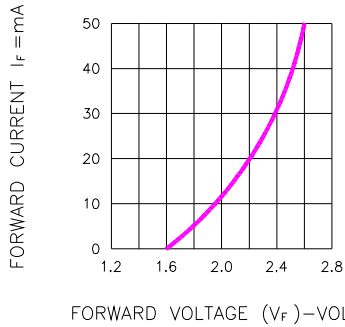


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

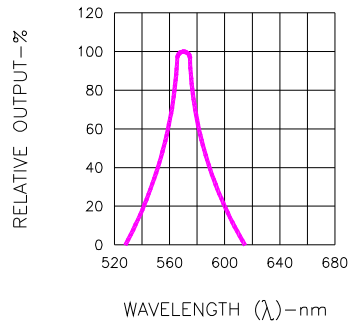


Fig.2 SPECTRAL RESPONSE

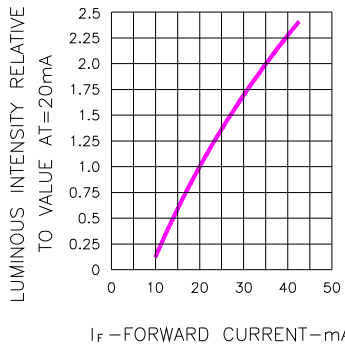


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

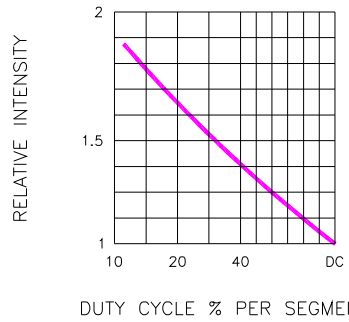


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

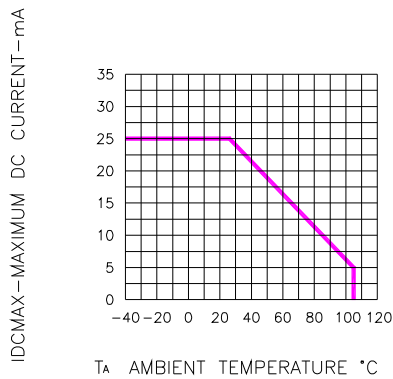


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE

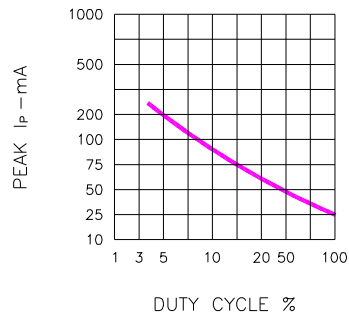


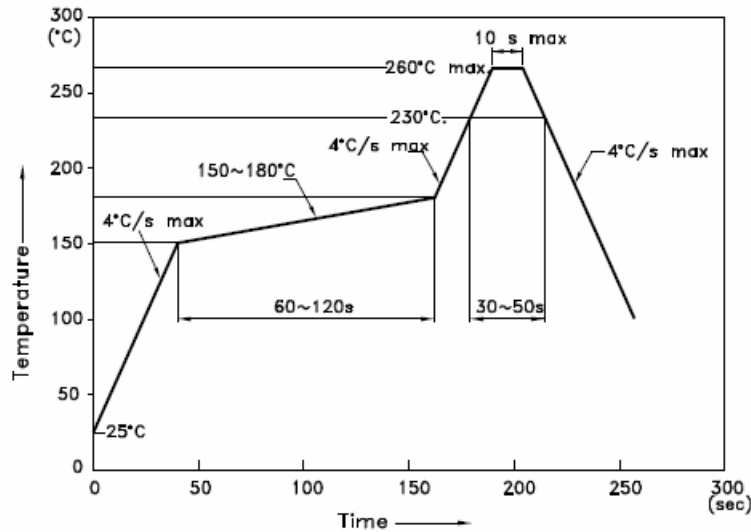
Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE f=1 KHz)



Model No: CSD-S20240/S20241T9

## SMT REFLOW SOLDERING INSTRUCTIONS

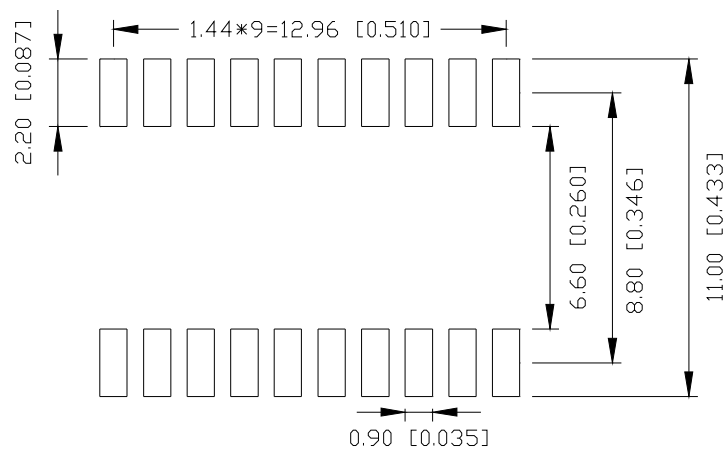
### IR Reflow Temperature / Time :



#### 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.

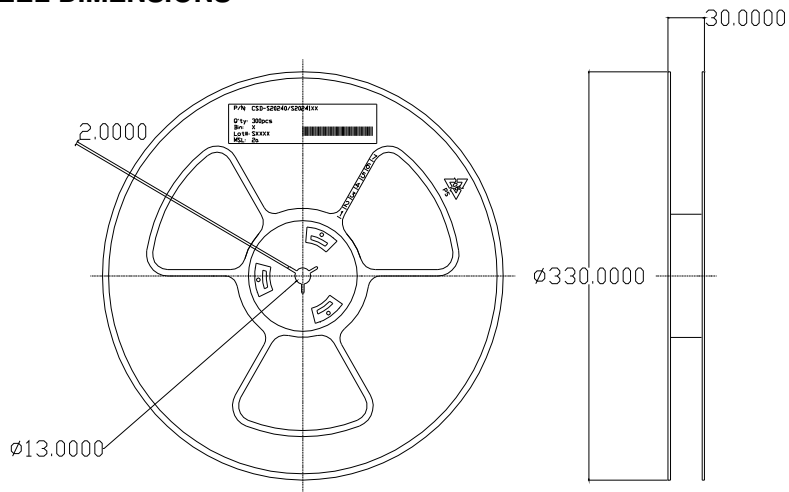
### Soldering Pad Size





Model No: CSD-S20240/S20241T9

REEL DIMENSIONS



PACKING & LABEL SPECIFICATIONS

