

# PRODUCT SPECIFICATION

**Model No.: CSDS-S56124 CSDS-S56125**

| Descriptions:                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>■ 0.56 Inch Single Digit SMD Display</li> <li>■ CSDS-S56124 is Common Anode</li> <li>■ CSDS-S56125 is Common Cathode</li> <li>■ Emitting Color: Pure Green; Yellow Green; Yellow; Amber; Orange; Red; Deep Red</li> <li>■ Standard: -11: Gray face, white segment.<br/>-21: Black face, white segment.</li> </ul> |



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

**OPTO PLUS TECHNOLOGIES CO.,LTD**  
 Address:No.696,Yangming North Rd,  
 ShaoXing City,ZheJiang Province, P.R.China.  
 Tel :86-575-88623888  
 Fax:86-575-88623112

## Model No.: CSDS-S56124 CSDS-S56125

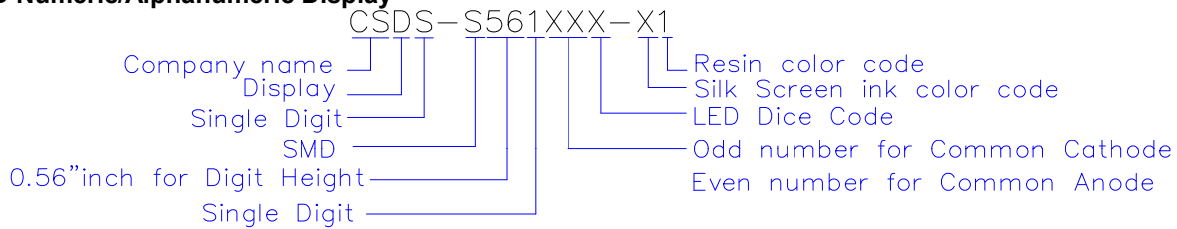
### ■ Features -

1. 0.56 inch (14.2mm) 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 .

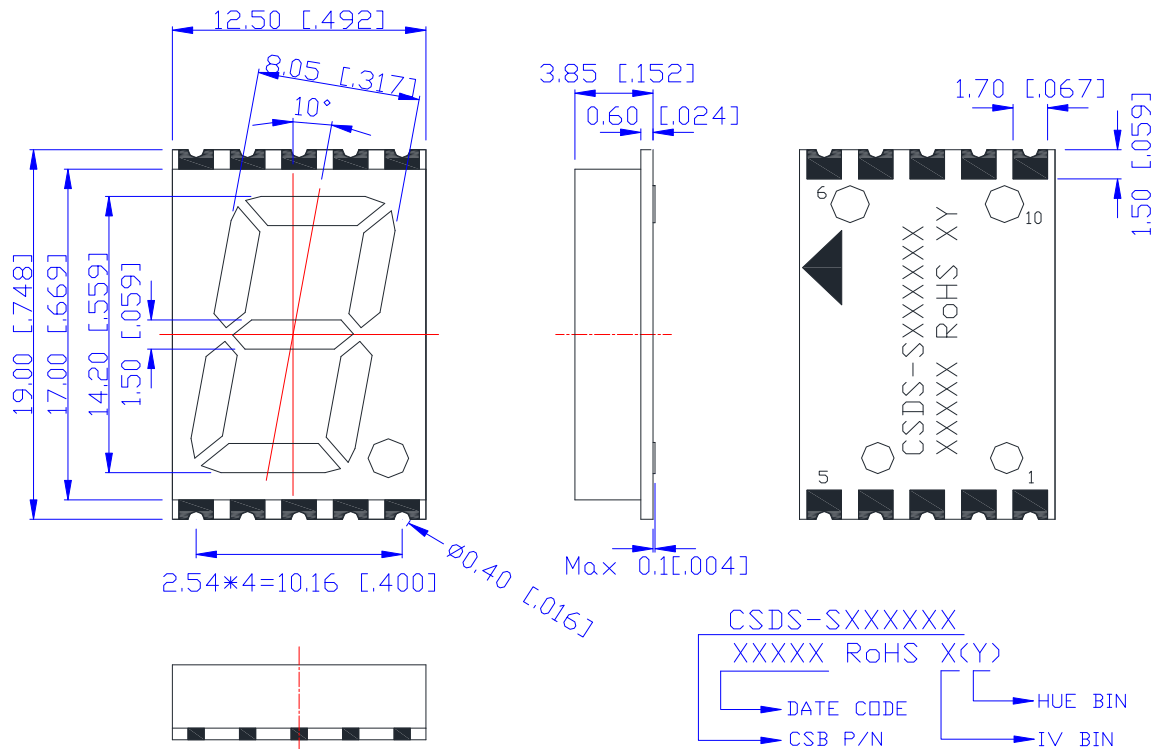
### ■ Device Selection Guide -

| Model No.    | Chip     |                |
|--------------|----------|----------------|
|              | Material | Emitting Color |
| CSDS-S5612x2 | InGaN    | Pure Green     |
| CSDS-S5612xM | AlGaInP  | Yellow Geen    |
| CSDS-S5612xT |          | Yellow         |
| CSDS-S5612xA |          | Amber          |
| CSDS-S5612xV |          | Orange         |
| CSDS-S5612xL |          | Red            |
| CSDS-S5612xU |          | Deep Red       |

### ■ LED Numeric/Alphanumeric Display



### ■ Mechanical Dimensions -

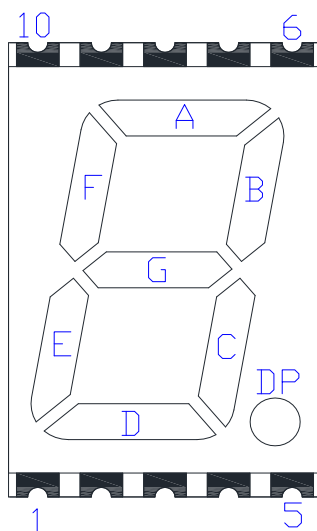


#### Notes:

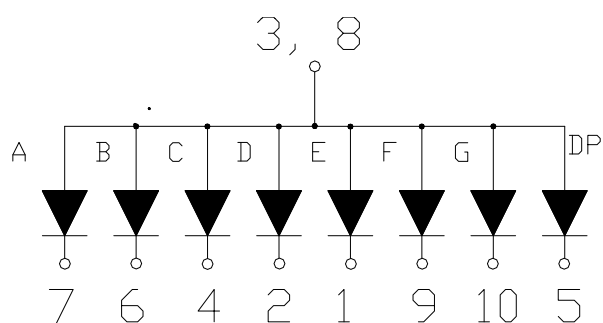
1. Dimension in millimeter [inch], tolerance is  $\pm 0.25$  [0.010] and angle is  $\pm 1^\circ$  unless otherwise noted.
2. Bending  $\leq$  Length\*1%.

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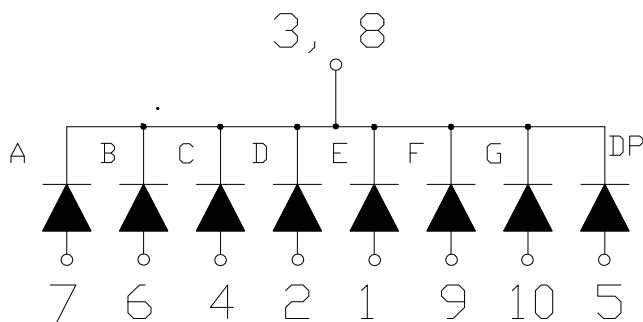
## ■ All Light On Segments Feature & Pin Position



## ■ Internal Circuit Diagrams -



CSDS-S56124 is Common Anode



CSDS-S56125 is Common Cathode

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## ■ Absolute Maximum Rating -

(Ta=25°C)

| Parameter                                   | Symbol | Rating     |                       | Unit  |
|---------------------------------------------|--------|------------|-----------------------|-------|
|                                             |        | 2          | M / T / A / V / L / U |       |
| Power Dissipation Per Dice                  | PAD    | 114        | 70                    | mW    |
| Derating Liner from 25°C per Dice           | -      | 0.4        | 0.33                  | mA/°C |
| Continuous Forward Current Per Dice         | IAF    | 30         | 25                    | mA    |
| Peak Current Per Dice(duty cycle 1/10,1KHz) | IPF    | 100        | 90                    | mA    |
| Reverse Voltage Per Dice                    | VR     | 5          | 5                     | V     |
| Electrostatic discharge(HBM)                | ESD    | 1000       | /                     | V     |
| Operating Temp.                             | Topr   | -40 ~ +105 |                       | °C    |
| Storage Temp.                               | Tstg   | -40 ~ +105 |                       | °C    |
| Hand Soldering Temp.                        | Tsol   | 350        |                       | °C    |

## ■ Electro-optical Characteristics -

(Ta=25°C)

| Parameter                                      | Symbol | Chip        | Min. | Typ.    | Max. | Unit | Condition |
|------------------------------------------------|--------|-------------|------|---------|------|------|-----------|
| Luminous Intensity Per Segment                 | Iv     | 2           | -    | 200     | -    | mcd  | If=10mA   |
|                                                |        | M           | -    | 3       | -    |      |           |
|                                                |        | T           | -    | 17      | -    |      |           |
|                                                |        | A           | -    | 18      | -    |      |           |
|                                                |        | V           | -    | 13      | -    |      |           |
|                                                |        | L           | -    | 9       | -    |      |           |
|                                                |        | U           | -    | 5       | -    |      |           |
| Forward Voltage Per Segment                    | VF     | 2           | -    | 3.2     | 3.8  | V    | If=20mA   |
|                                                |        | M/T/A/V/L/U | -    | 2       | 2.8  |      |           |
| Peak Emission Wavelength / Dominant Wavelength | λP/λd  | 2           | -    | *I525   | -    | nm   | If=20mA   |
|                                                |        | M           | -    | 572/570 | -    |      |           |
|                                                |        | T           | -    | 592/590 | -    |      |           |
|                                                |        | A           | -    | 612/605 | -    |      |           |
|                                                |        | V           | -    | 632/625 | -    |      |           |
|                                                |        | L           | -    | 644/630 | -    |      |           |
|                                                |        | U           | -    | 660/645 | -    |      |           |
| Reverse Current                                | IR     |             | -    | -       | 100  | μA   | VR=5V     |
| Luminous Intensity Matching Ratio              | IV-m   |             | -    | -       | 2:1  | -    | If=10mA   |

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## ■ Electrical / Optical Characteristics Curves -

(Ta = 25°C Unless Otherwise Noted)

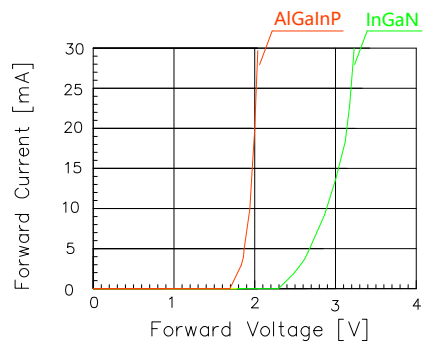


Fig 1. Forward Current vs. Forward Voltage

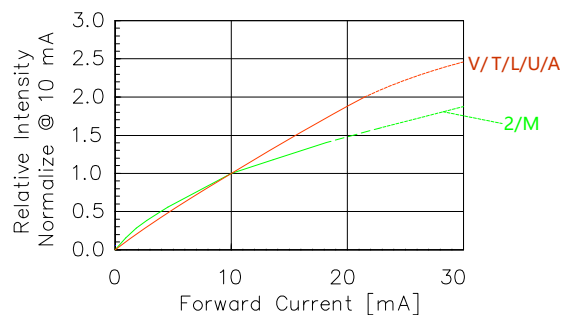


Fig 2. Relative Intensity vs. Forward Current

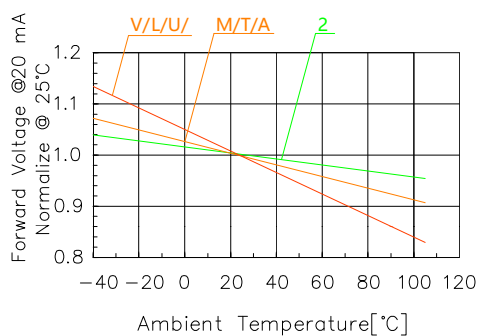


Fig 3. Forward Voltage vs. Temperature

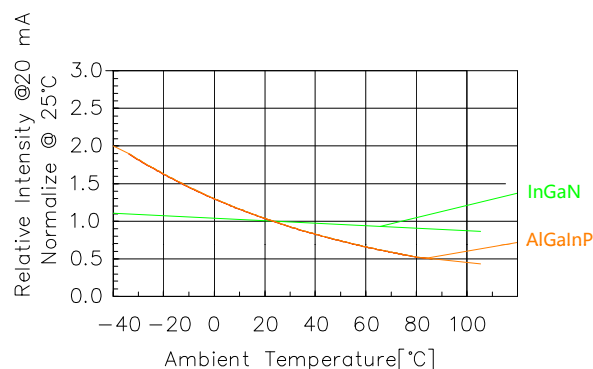


Fig 4. Relative Intensity vs. Temperature

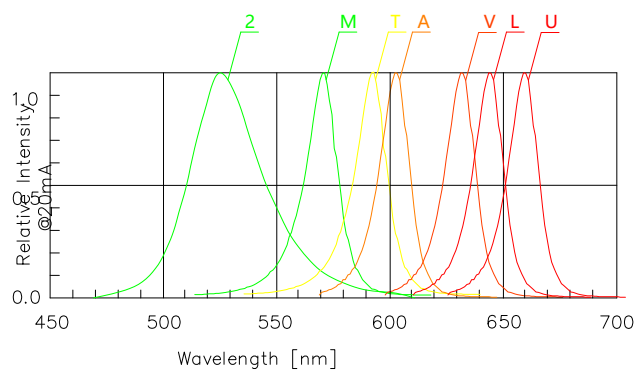


Fig 5. Relative Intensity vs. Wavelength

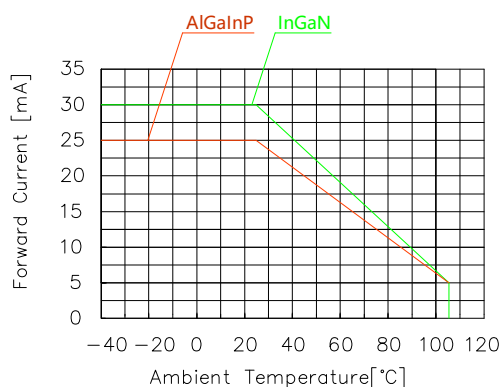
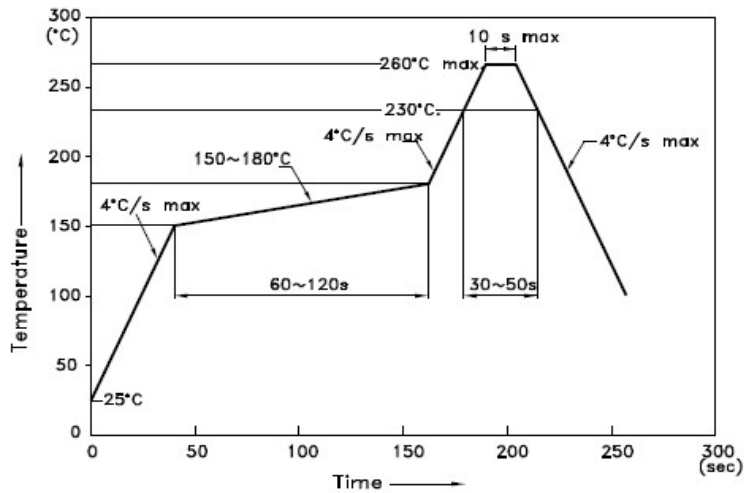


Fig 6. Forward current vs. Temperature

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## SMT REFLOW SOLDERING INSTRUCTIONS

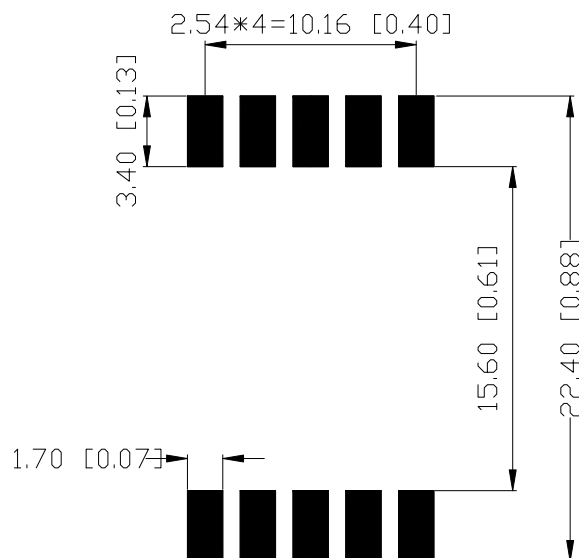
### ■ IR Reflow Temperature / Time :



#### NOTES:

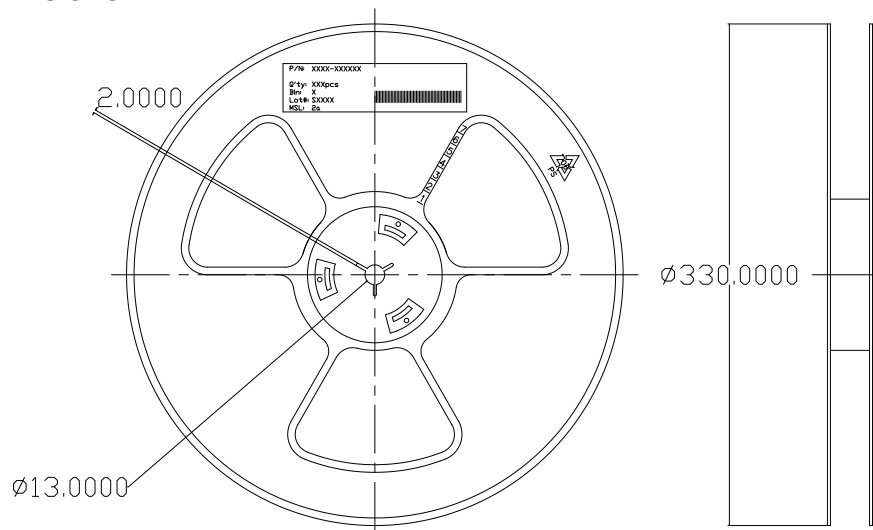
1. We recommend the reflow temperature 245°C(+/-5°C). The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

### ■ Soldering Pad Size

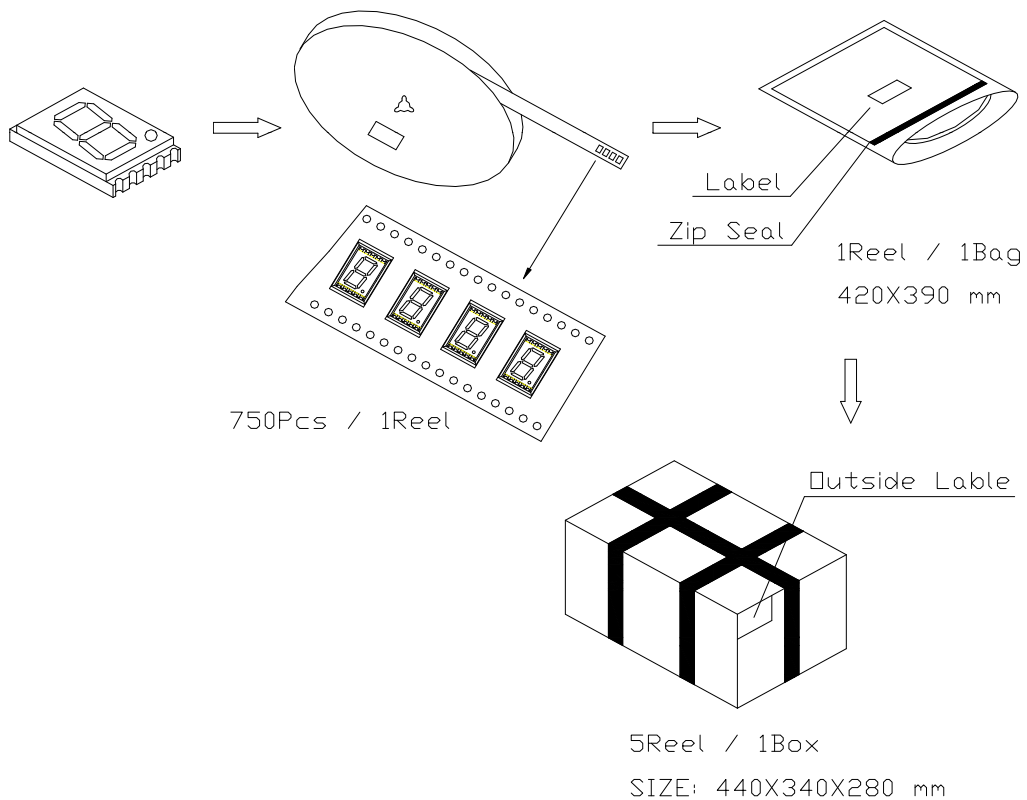


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## REEL DIMENSIONS



## PACKING & LABEL SPECIFICATIONS



Note: The specifications are subject to change without notice. Please contact us for updated information.