

# PRODUCT SPECIFICATION

**Model No.: CSOT-52300W CSOT-52301W**

| Descriptions:   |
|---|
| <ul style="list-style-type: none"> <li>■ 0.52 Inch Triple Digit Display</li> <li>■ CSOT-52300 is Common Anode</li> <li>■ CSOT-52301 is Common Cathode</li> <li>■ Emitting Color: White</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        |             |            |             |
|                   |             |            |             |

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**Model No.: CSOT-52300W CSOT-52301W**

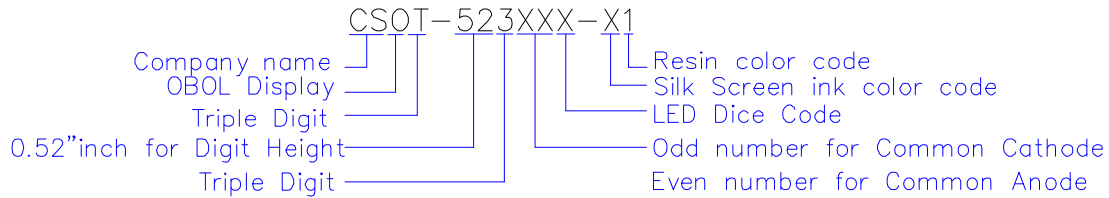
**Features -**

1. 0.52 inch (13.20mm) digit height.
2. Case mold type.
3. RoHS compliant.
4. Low power consumption.
5. Easy mounting on P.C. board or socket.

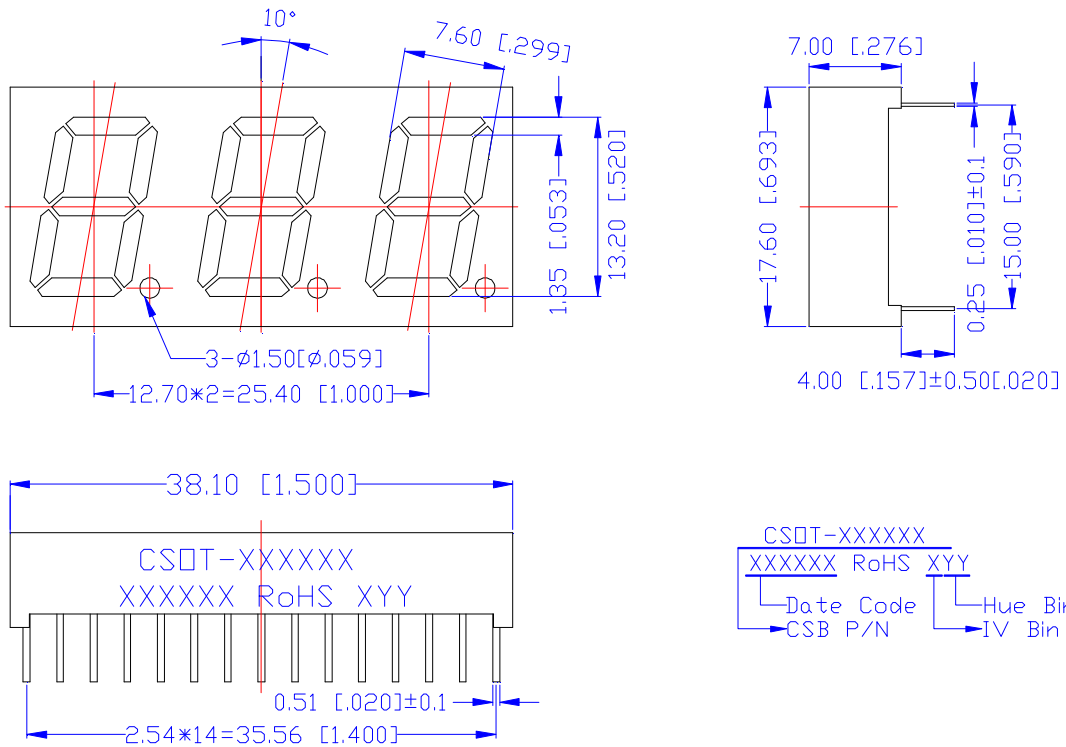
**Device Selection Guide -**

| Model No.   | Chip     |                |
|-------------|----------|----------------|
|             | Material | Emitting Color |
| CSOT-5230XW | InGaN    | White          |

**LED Numeric/Alphanumeric Display**



**Mechanical Dimensions -**

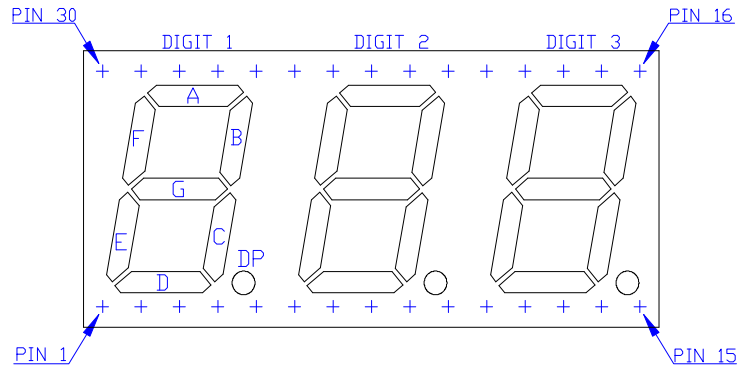


**Notes:**

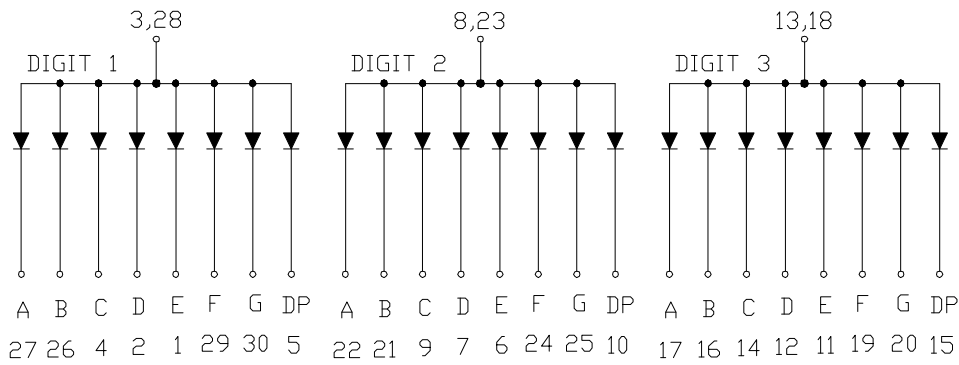
1. All pins are 0.51\*0.25
2. Dimension in millimeter [inch], tolerance is ±0.25 [0.010] and angle is ±1° unless otherwise noted.
3. Bending ≤ Length\*1%.

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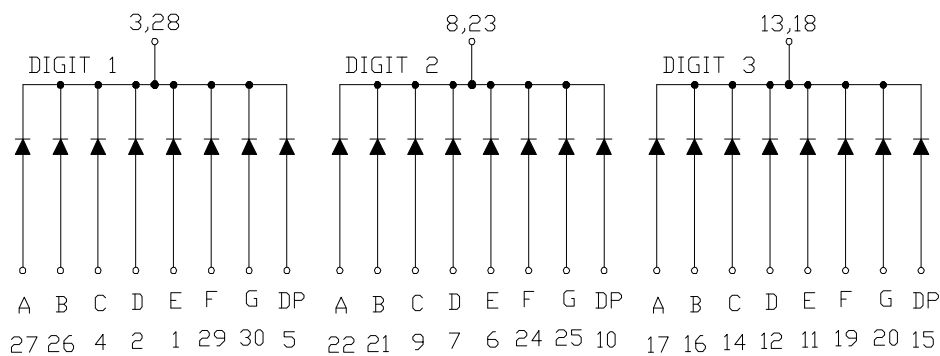
**■ All Light On Segments Feature & Pin Position**



**■ Internal Circuit Diagrams -**



**CSOT-52300 is Common Anode**



**CSOT-52301 is Common Cathode**

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■ Absolute Maximum Rating -

(Ta=25°C)

| Parameter                                   | Symbol | Rating    | Unit  |
|---|--------|-----------|-------|
| Power Dissipation Per Dice                  | PAD    | 114       | mW    |
| Derating Liner from 25°C per Dice           | -      | 0.4       | mA/°C |
| Continuous Forward Current Per Dice         | IAF    | 30        | mA    |
| Peak Current Per Dice(duty cycle 1/10,1KHz) | IPF    | 100       | mA    |
| Reverse Voltage Per Dice                    | VR     | 5         | V     |
| Electrostatic discharge(HBM)                | ESD    | 1000      | V     |
| Operating Temp.                             | Topr   | -35 ~ +85 | °C    |
| Storage Temp.                               | Tstg   | -35 ~ +85 | °C    |
| Hand Soldering Temp.                        | Tsol   | 350       | °C    |

■ Electro-optical Characteristics -

(Ta=25°C)

| Parameter                                      | Symbol           | Min. | Typ. | Max. | Unit | Condition            |
|--|------------------|------|------|------|------|----------------------|
| Forward Voltage Per Segment                    | V <sub>F</sub>   | -    | 3.2  | 3.8  | V    | I <sub>F</sub> =20mA |
| Luminous Intensity Per Segment                 | I <sub>v</sub>   | -    | 120  | -    | mcd  | I <sub>F</sub> =10mA |
| Chromaticity Coordinates<br>(Tolerance: ±0.01) | X                | -    | 0.27 | -    | -    | I <sub>F</sub> =10mA |
|  | Y                | -    | 0.25 | -    |      |                      |
| Reverse Current                                | I <sub>R</sub>   | -    | -    | 50   | μA   | VR=5V                |
| Luminous Intensity Matching Ratio              | I <sub>v-m</sub> | -    | -    | 2:1  | -    | I <sub>F</sub> =10mA |

Notes:The device can not operated under continuous reverse voltage.

■ Typical Electrical / Optical Characteristics Curves -

(Ta = 25°C Unless Otherwise Noted)

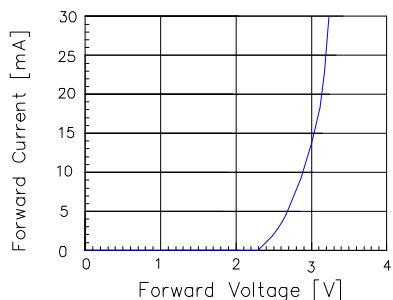


Fig 1. Forward Current vs. Forward Voltage

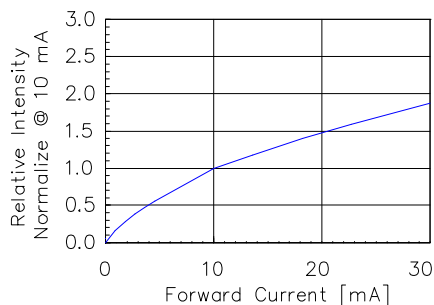


Fig 2. Relative Intensity vs. Forward Current

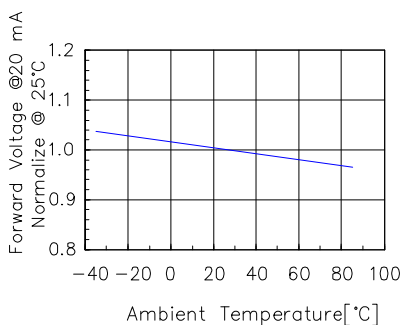


Fig 3. Forward Voltage vs. Temperature

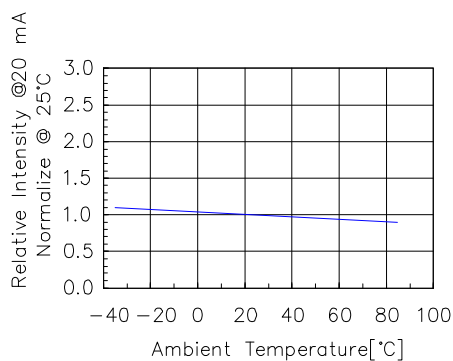


Fig 4. Relative Intensity vs. Temperature

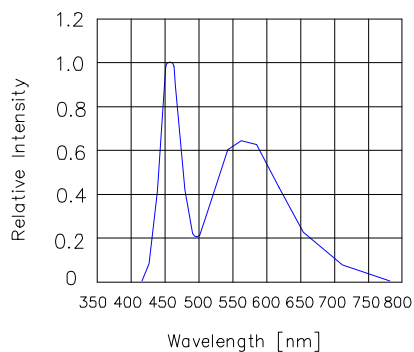


Fig 5. Relative Intensity vs. Wavelength

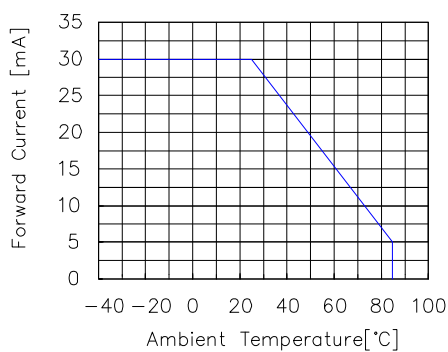


Fig 6. Forward current vs. Temperature

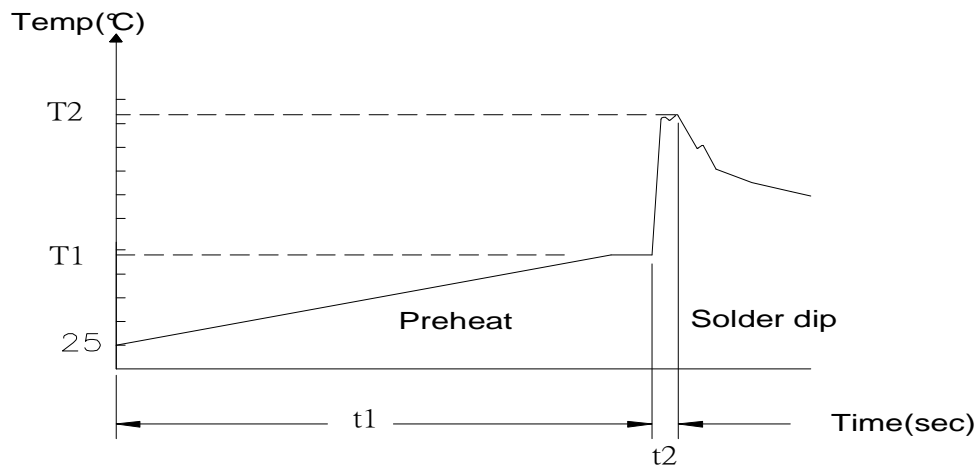
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**■ Precautions For Use -**

**1.Wave Soldering Profile**

Distance:1.6mm min(From seating plane)

| Item       | Condition      |             | Note  |
|------------|----------------|-------------|---|
| Preheat    | Temperature T1 | 80 – 120°C  | PWB temperature<br>(Soldering side surface) |
|            | Time t1        | 60 – 180sec |   |
| Solder Dip | Temperature T2 | 230 – 260°C | Bath temperature                            |
|            | Time t2        | 2 – 4sec    | Solder tank passage time                    |



**2.Hand Soldering (Iron Condition)**

Soldering Iron:30W Max

Temperature 350°C Max

Soldering Time:3 Seconds Max(One Time)

Distance:1.6mm min(From seating plane)