

# PRODUCT SPECIFICATION

**Model No.: CSDS-80102VM CSDS-80103VM**

| Descriptions:   |
|---|
| <ul style="list-style-type: none"> <li>■ 0.8 Inch Single Digit Display</li> <li>■ CSDS-80102 is Common Anode</li> <li>■ CSDS-80103 is Common Cathode</li> <li>■ Emitting Color: Orange ; Yellow Green</li> <li>■ Standard: -11: Gray face, white segment.<br/>-21: Black face, white segment..</li> </ul> |



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

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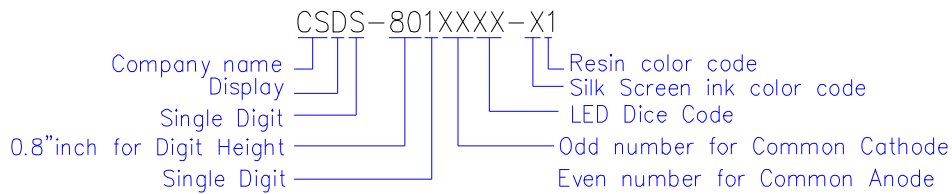
**Features -**

1. 0.80 inch (20.40mm) digit height.
2. Case mold type.
3. RoHS compliant.
4. Low power consumption.
5. Easy mounting on P.C. board or socket.

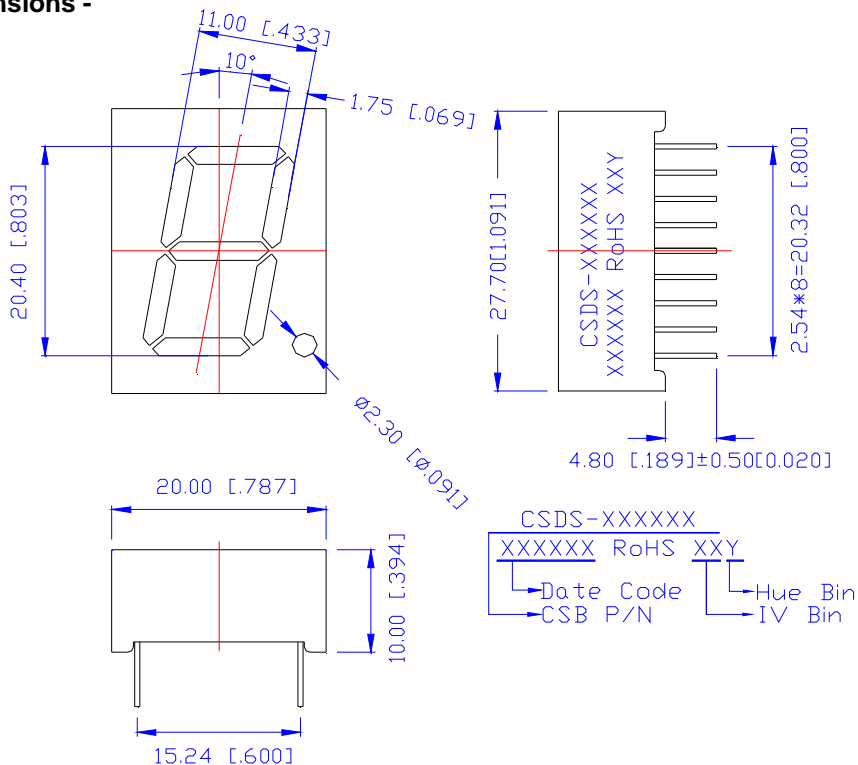
**Device Selection Guide -**

| Model No.    | Chip     |                |
|--------------|----------|----------------|
|              | Material | Emitting Color |
| CSDS-8010XVM | AlGaInP  | Orange         |
|              |          | Yellow Green   |

**LED Numeric/Alphanumeric Display**



**Mechanical Dimensions -**

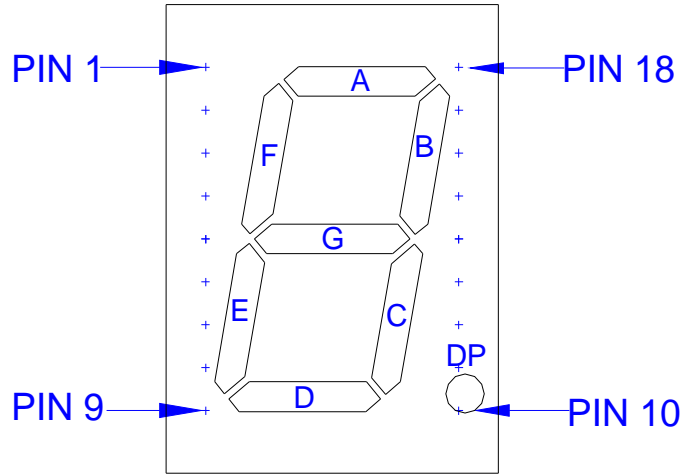


**Notes:**

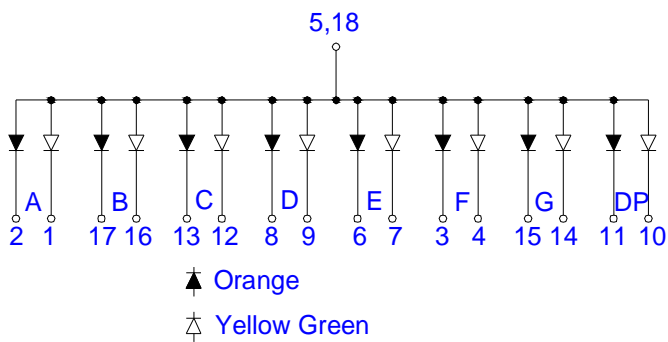
1. All pins are  $\phi 0.51 [0.020] \pm 0.1 [0.004]$
2. Dimension in millimeter [inch], tolerance is  $\pm 0.25 [0.010]$  and angle is  $\pm 1^\circ$  unless otherwise noted.
3. Bending  $\leq$  Length\*1%.

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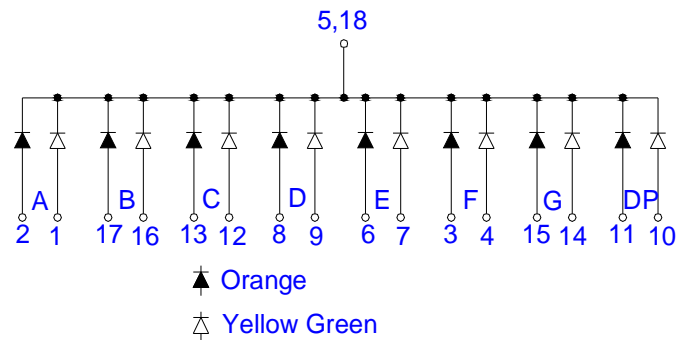
■ All Light On Segments Feature & Pin Position



■ Internal Circuit Diagrams -



CSDS-80102 is Common Anode



CSDS-80103 is Common Cathode

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■ Absolute Maximum Rating -

(Ta=25°C)

| Parameter                                   | Symbol                 | Rating    | Unit  |
|---|------------------------|-----------|-------|
| Power Dissipation Per Dice                  | <b>P<sub>AD</sub></b>  | 70        | mW    |
| Derating Liner from 25°C per Dice           | -                      | 0.33      | mA/°C |
| Continuous Forward Current Per Dice         | <b>I<sub>AF</sub></b>  | 25        | mA    |
| Peak Current Per Dice(duty cycle 1/10,1KHz) | <b>I<sub>PF</sub></b>  | 90        | mA    |
| Reverse Voltage Per Dice                    | <b>VR</b>              | 5         | V     |
| Operating Temp.                             | <b>T<sub>opr</sub></b> | -35 ~ +85 | °C    |
| Storage Temp.                               | <b>T<sub>stg</sub></b> | -35 ~ +85 | °C    |
| Hand Soldering Temp.                        | <b>T<sub>sol</sub></b> | 350       | °C    |

■ Electro-optical Characteristics -

(Ta=25°C)

| Parameter                                      | Symbol                             | Chip       | Min. | Typ.    | Max. | Unit | Condition |
|--|------------------------------------|------------|------|---------|------|------|-----------|
| Luminous Intensity Per Segment                 | <b>I<sub>v</sub></b>               | <b>M</b>   | -    | 22      | -    | mcd  | IF=10mA   |
|  |                                    | <b>V</b>   | -    | 65      | -    |      |           |
| Forward Voltage Per Segment                    | <b>V<sub>F</sub></b>               | <b>M/V</b> | -    | 2.0     | 2.8  | V    | IF=20mA   |
| Peak Emission Wavelength / Dominant Wavelength | <b>λ<sub>P</sub>/λ<sub>d</sub></b> | <b>M</b>   | -    | 572/570 | -    | nm   | IF=10mA   |
|  |                                    | <b>V</b>   | -    | 632/625 | -    |      |           |
| Reverse Current                                | <b>I<sub>R</sub></b>               |            | -    | -       | 100  | μA   | VR=5V     |
| Luminous Intensity Matching Ratio              | <b>I<sub>V-m</sub></b>             |            | -    | -       | 2:1  | -    | IF=10mA   |

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■ Typical Electrical / Optical Characteristics Curves -

(Ta = 25°C Unless Otherwise Noted)

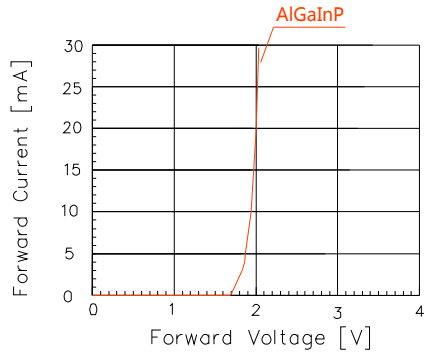


Fig 1. Forward Current vs. Forward Voltage

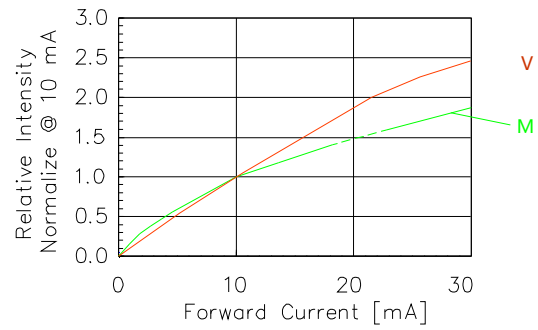


Fig 2. Relative Intensity vs. Forward Current

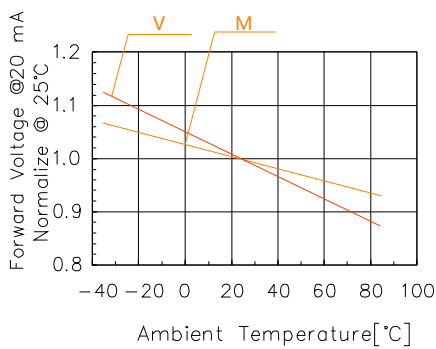


Fig 3. Forward Voltage vs. Temperature

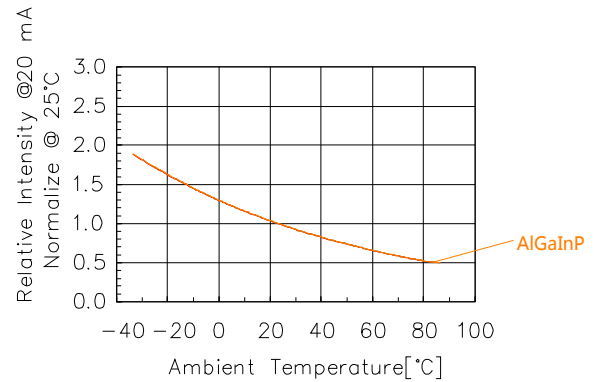


Fig 4. Relative Intensity vs. Temperature

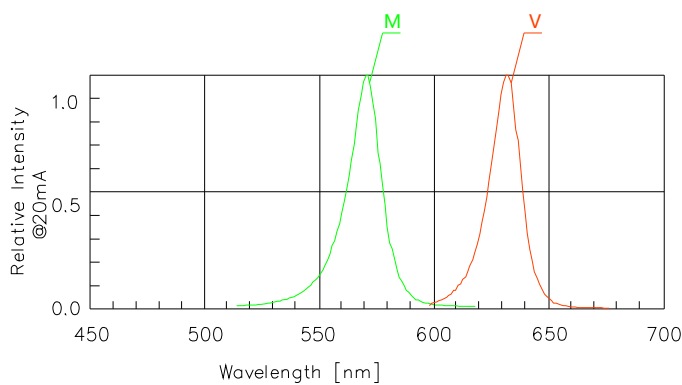


Fig 5. Relative Intensity vs. Wavelength

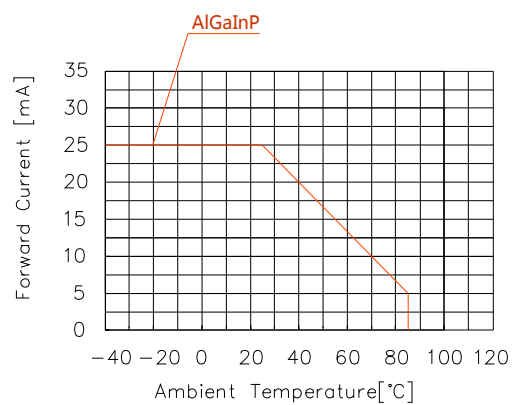


Fig 6. Forward current vs. Temperature

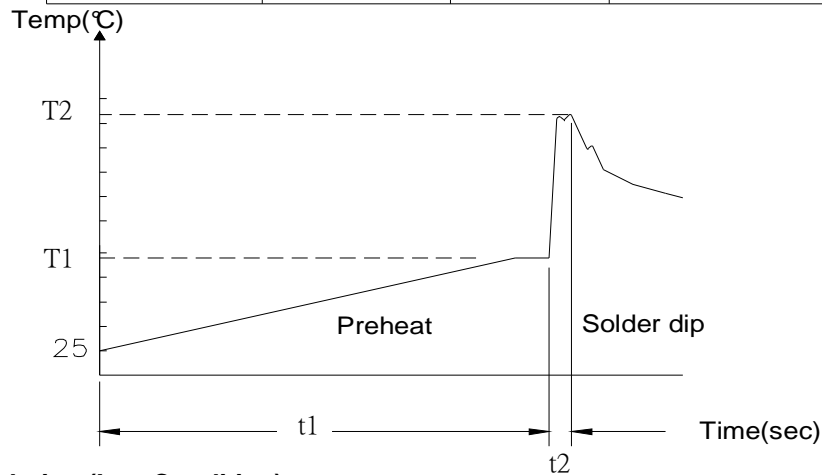
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■ Precautions For Use -

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)