

# PRODUCT SPECIFICATION

**Model No.: CSDM-88102UM**

Descriptions:
<ul style="list-style-type: none"> <li>■ 1.5 Inch Dot-Matrix Display</li> <li>■ 8*8 Array with X-Y Select</li> <li>■ CSDM-88102UM is Common Column Cathode</li> <li>■ Emitting Color: Deep Red; Yellow Green</li> <li>■ Standard: -11: Gray face, white Dot. -21: Black face, white Dot.</li> </ul>



CUSTOMER APPROVED SIGNATURES	APPROVED BY	CHECKED BY	PREPARED BY

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**Model No.: CSDM-88102UM**

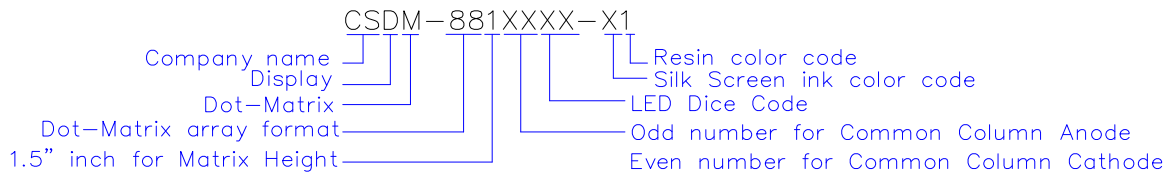
**■ Features -**

1. 1.5 inch (38.8mm) matrix height.
2. Case mold type.
3. RoHS compliant.
4. Low power consumption.
5. Easy mounting on P.C. board or socket.

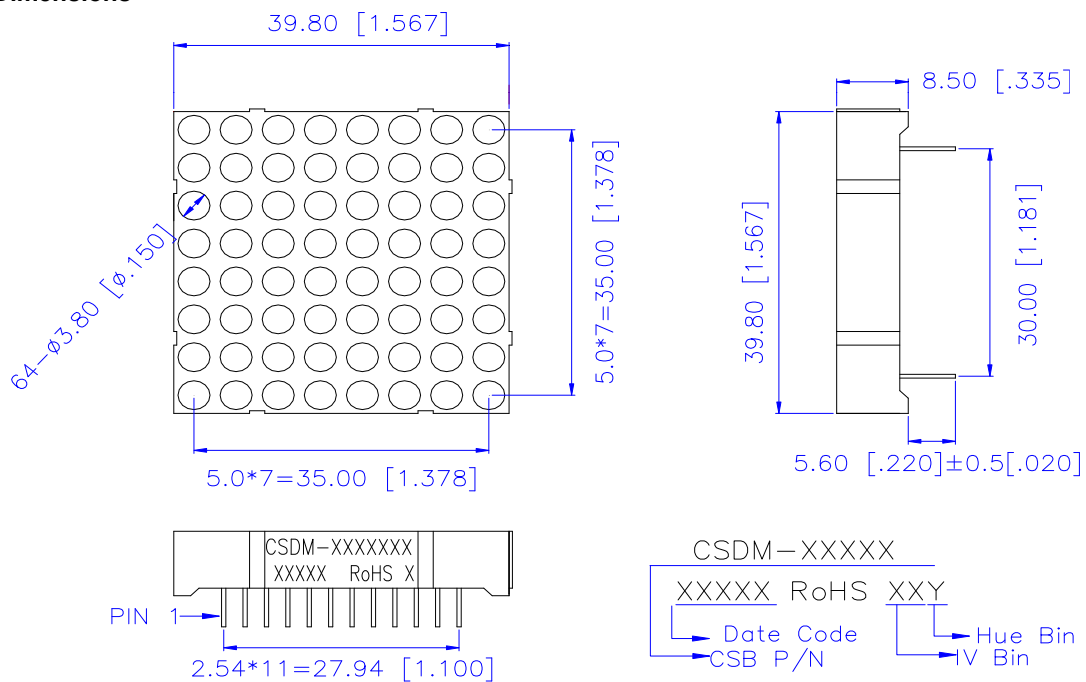
**■ Device Selection Guide -**

Model No.	Chip	
	Material	Emitting Color
CSDM-88102UM	AlGaInP	Deep Red
		Yellow Green

**■ LED Numeric/Alphanumeric Display**



**■ Mechanical Dimensions -**

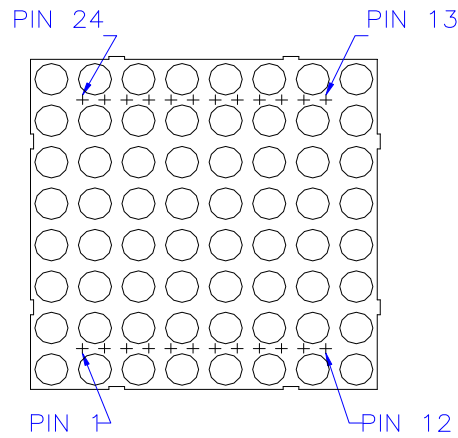


**Notes:**

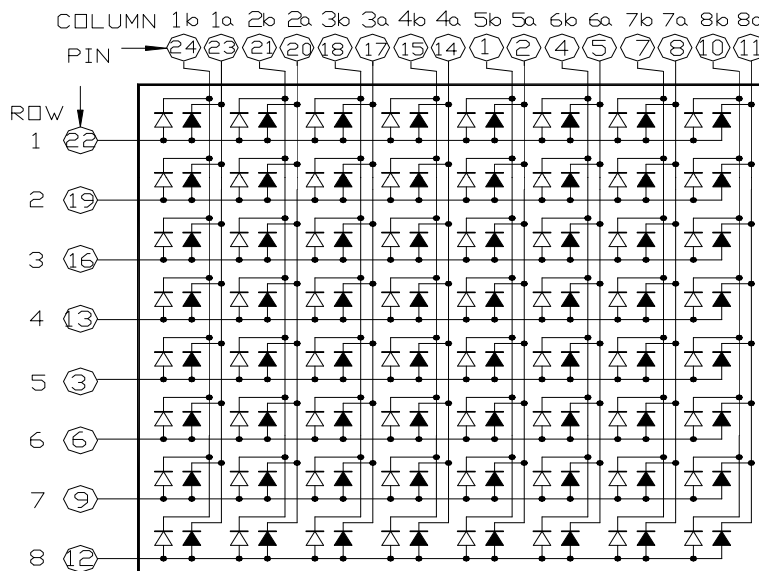
1. All pins are  $\Phi 0.5 [0.020] \pm 0.1 [0.004]$
2. Dimension in millimeter [inch], tolerance is  $\pm 0.25 [0.010]$  and angle is  $\pm 1^\circ$  unless otherwise noted.
3. Bending  $\leq$  Length\*1%.

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



**■ Internal Circuit Diagrams -**



Note: "a" ← Deep Red color chip  
 "b" ← Yellow Green color chip

CSDM-88102UM is Common Column 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>V<sub>R</sub></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>U</b>	-	27	-		
Forward Voltage Per Segment	<b>V<sub>F</sub></b>	<b>M/U</b>	-	2	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=20mA
		<b>U</b>	-	660/645	-		
Reverse Current	<b>I<sub>R</sub></b>		-	-	100	μA	V <sub>R</sub> =5V
Luminous Intensity Matching Ratio	<b>I<sub>V-m</sub></b>		-	-	2:1	-	*1

Notes: \*1 Condition is I<sub>p</sub>=80mA 1/16Duty

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■ Electrical / Optical Characteristics Curves -

(Ta = 25°C Unless Otherwise Noted)

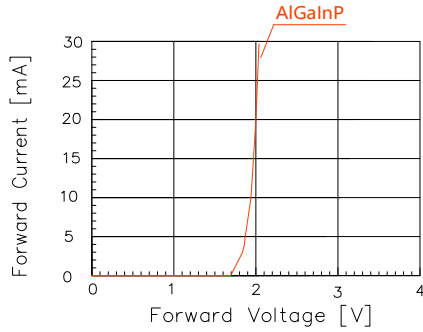


Fig 1. Forward Current vs. Forward Voltage

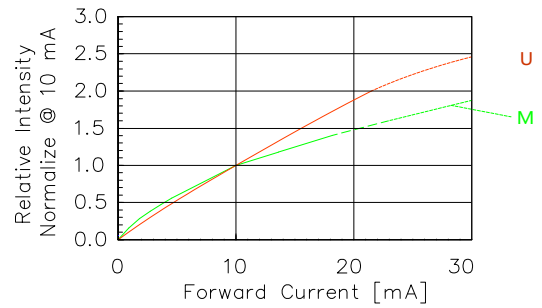


Fig 2. Relative Intensity vs. Forward Current

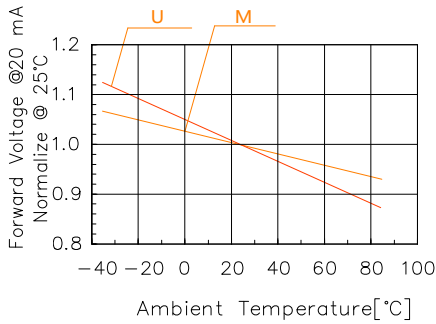


Fig 3. Forward Voltage vs. Temperature

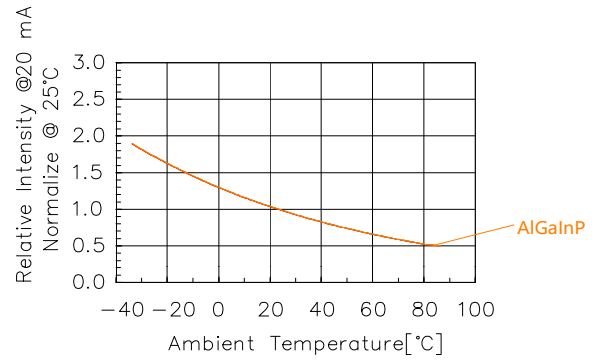


Fig 4. Relative Intensity vs. Temperature

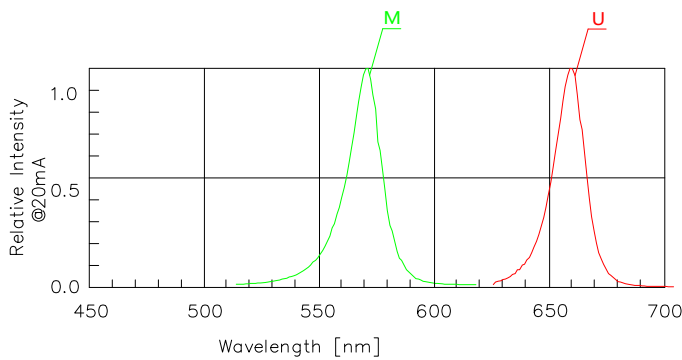


Fig 5. Relative Intensity vs. Wavelength

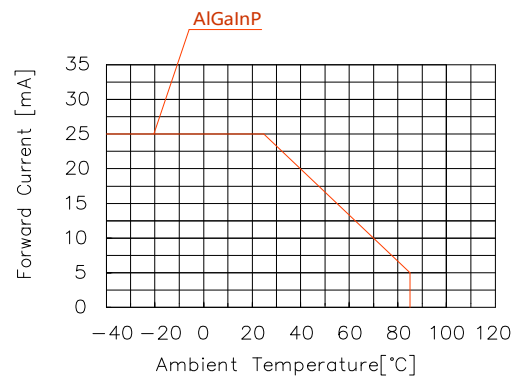


Fig 6. Forward current vs. Temperature

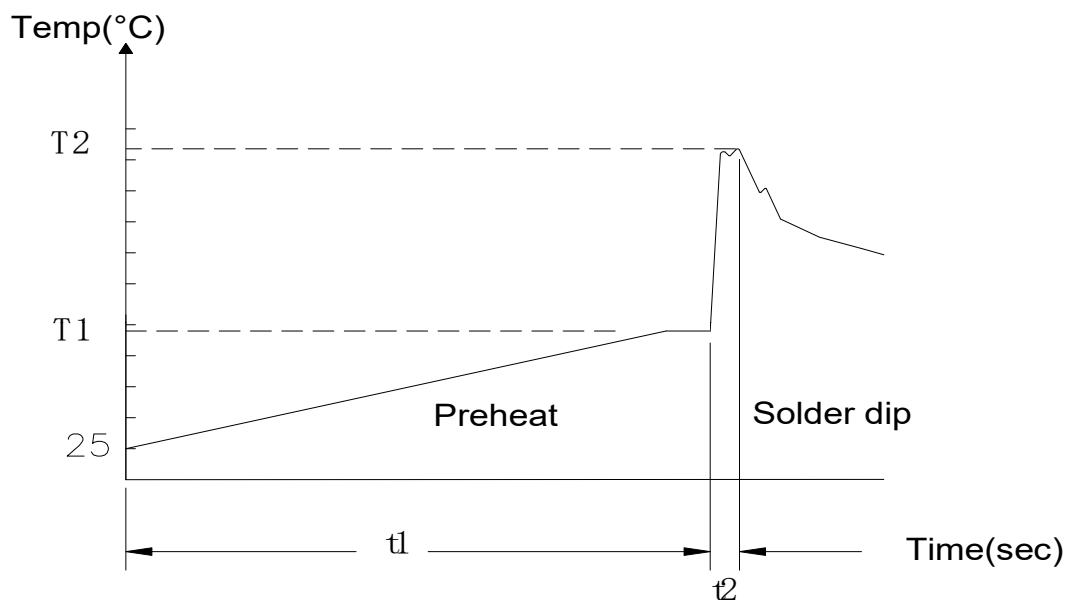
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**■ Precautions For Use -**

**1.Wave Soldering Profile**

Distance:1.6mm min(From seating plane)

Item	Condition		Note
Preheat	Temperature T1	80 – 120°C	PWB temperature (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)