

PRODUCT SPECIFICATION

Model No.: CSDM-88204X CSDM-88205X

Descriptions:
<ul style="list-style-type: none"> ■ 2.3 Inch Dot-Matrix Display ■ 8*8 Array with X-Y Select ■ CSDM-88204 is Common Column Cathode ■ CSDM-88205 is Common Column Anode ■ Emitting Color: Pure Green; Yellow Green; Yellow; Amber; Orange; Red; Deep Red ■ Standard: -11: Gray face, white Dot. -21: Black face, white Dot.



CUSTOMER APPROVED SIGNATURES	APPROVED BY	CHECKED BY	PREPARED BY

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

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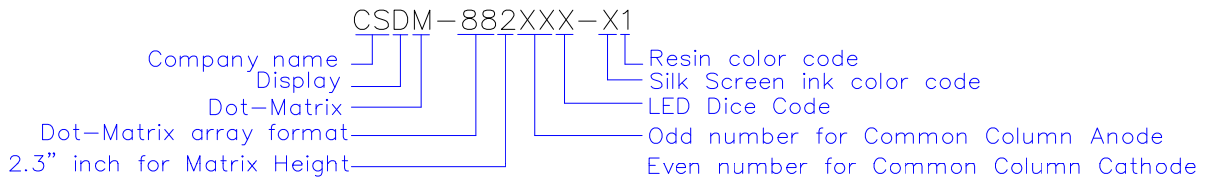
■ Features -

1. 2.3 inch (58.34mm) matrix height.
2. Case mold type.
3. RoHS compliant.
4. Low power consumption.
5. Easy mounting on P.C. board or socket.

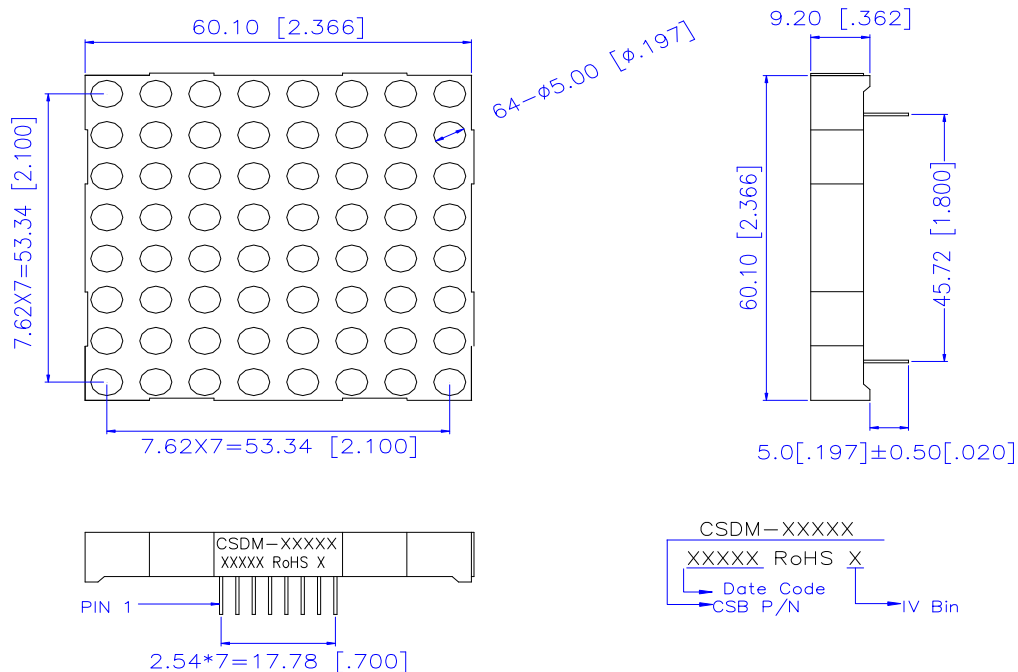
■ Device Selection Guide -

Model No.	Chip	
	Material	Emitting Color
CSDM-8820x2	InGaN AlGaN	Pure Green
CSDM-8820xM		Yellow Green
CSDM-8820xT		Yellow
CSDM-8820xA		Amber
CSDM-8820xV		Orange
CSDM-8820xL		Red
CSDM-8820xU		Deep Red

■ LED Numeric/Alphanumeric Display



■ Mechanical Dimensions -

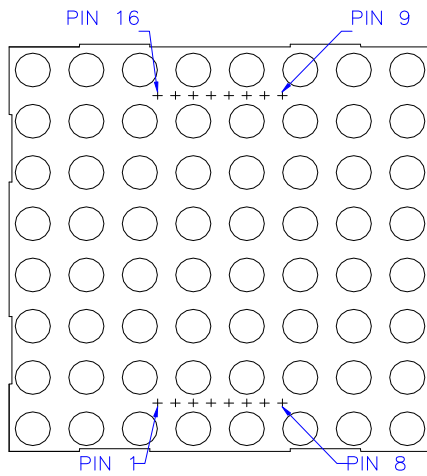


Notes:

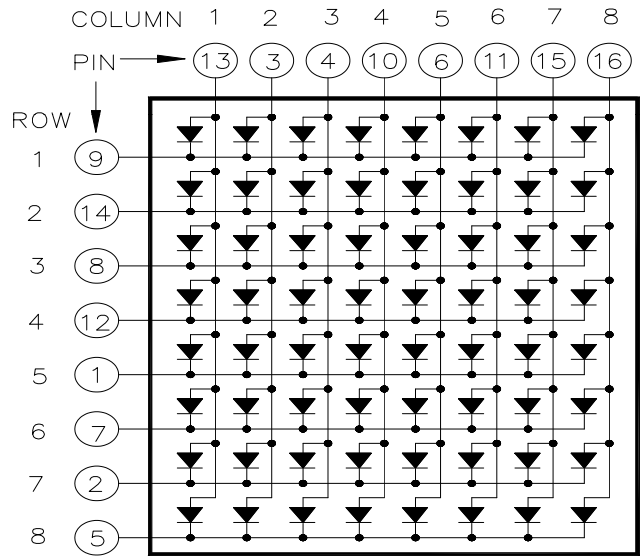
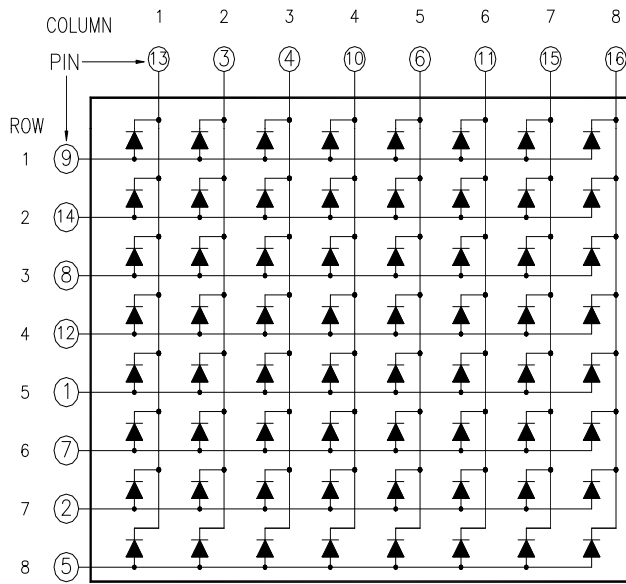
1. All pins are $\Phi 0.50[.020]\pm 0.1 [.004]$
2. Dimension in millimeter [inch], tolerance is $\pm 0.25 [.010]$ and angle is $\pm 1^\circ$ unless otherwise noted.
3. Bending \leq Length*1%.

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■ All Light On Segments Feature & Pin Position



■ Internal Circuit Diagrams -



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■ Absolute Maximum Rating -

(Ta=25°C)

Parameter	Symbol	Rating		Unit
		M/T/A/V/L/U	2	
Power Dissipation Per Dice	P _{AD}	70	114	mW
Derating Liner from 25°C per Dice	-	0.33	0.4	mA/°C
Continuous Forward Current Per Dice	I _{AF}	25	30	mA
Peak Current Per Dice(duty cycle 1/10,1KHz)	I _{PF}	90	100	mA
Reverse Voltage Per Dice	VR	5	5	V
Electrostatic discharge(HBM)	ESD	/	1000	V
Operating Temp.	T _{opr}	-35 ~ +85		°C
Storage Temp.	T _{stg}	-35 ~ +85		°C
Hand Soldering Temp.	T _{sol}	350		°C

■ Electro-optical Characteristics -

(Ta=25°C)

Parameter	Symbol	Chip	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity Per Segment	I _v	2	-	489	-	mcd	IF=10mA
		M	-	28	-		
		T	-	100	-		
		A	-	106	-		
		V	-	62	-		
		L	-	58	-		
		U	-	27	-		
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	λ _P /λ _d	2	-	*525	-	nm	IF=20mA
		M	-	572/570	-		
		T	-	592/590	-		
		A	-	612/605	-		
		V	-	632/625	-		
		L	-	644/630	-		
		U	-	660/645	-		
Reverse Current	I _R		-	-	100	μA	VR=5V
Luminous Intensity Matching Ratio	IV-m		-	-	2:1	-	*1

Notes: *1 Condition is I_p=80mA 1/16Duty

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■ Electrical / Optical Characteristics Curves -

(Ta = 25°C Unless Otherwise Noted)

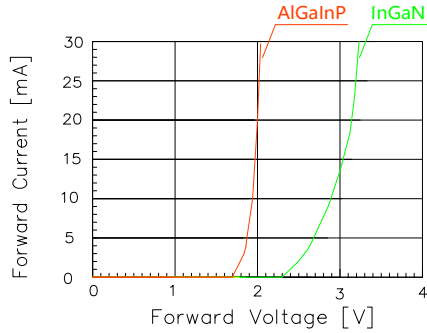


Fig 1. Forward Current vs. Forward Voltage

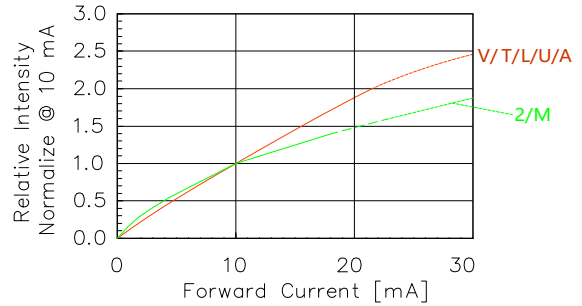


Fig 2. Relative Intensity vs. Forward Current

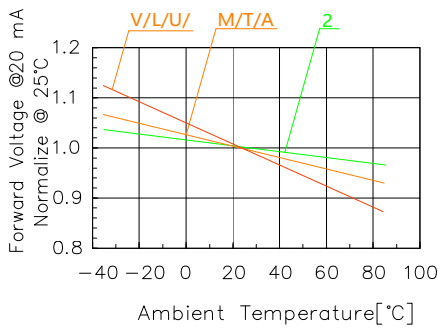


Fig 3. Forward Voltage vs. Temperature

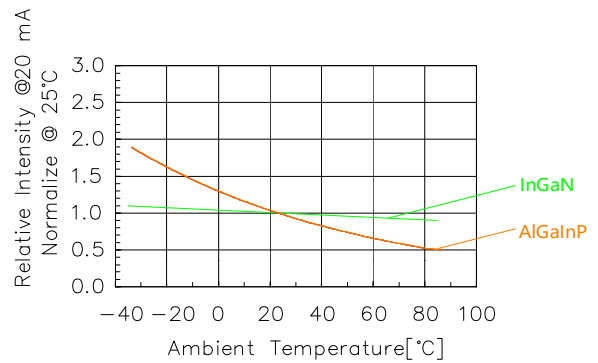


Fig 4. Relative Intensity vs. Temperature

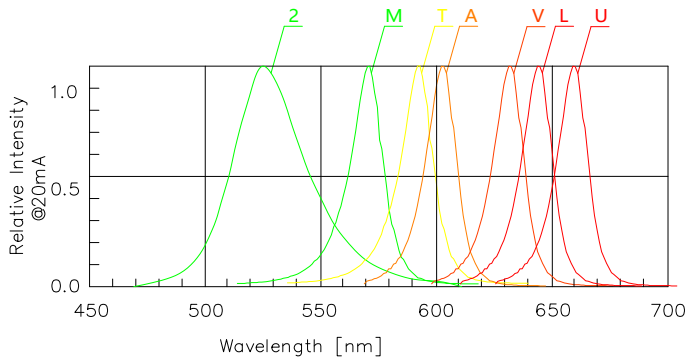


Fig 5. Relative Intensity vs. Wavelength

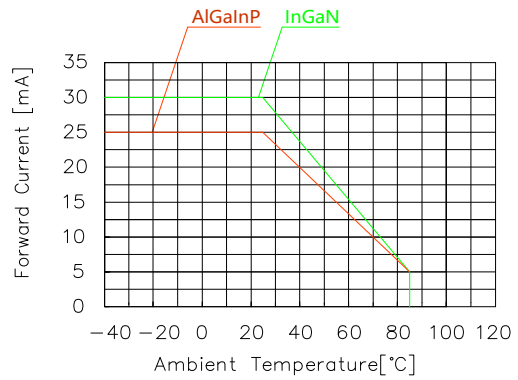


Fig 6. Forward current vs. Temperature

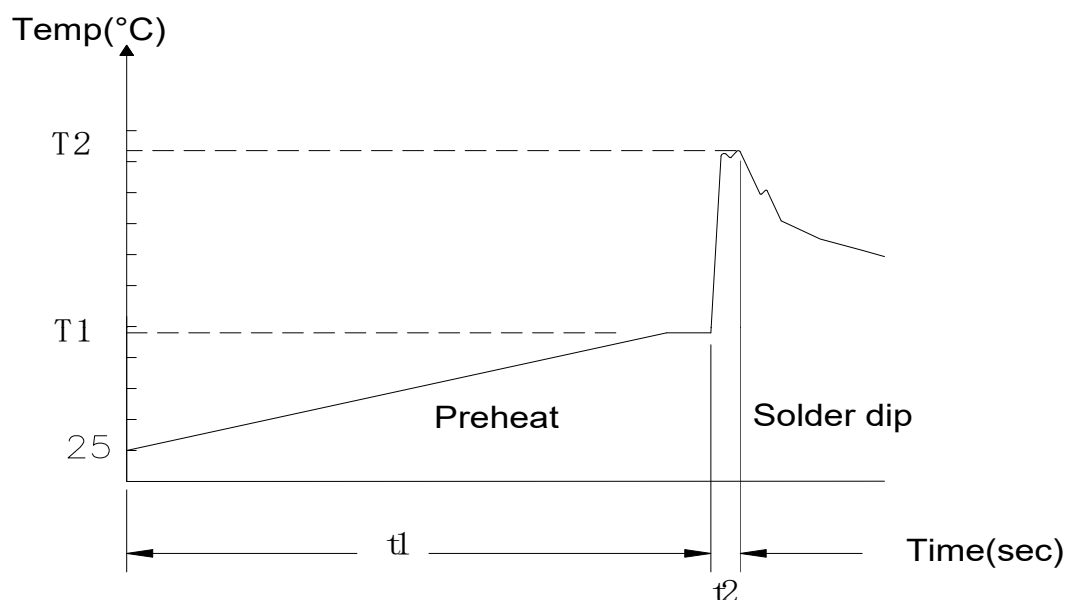
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■ Precautions For Use -

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)