



PRODUCT SPECIFICATION

Model No : CSM-88211M9/88221M9

Descriptions:

- 2.3 Inch 8X8 Dot-Matrix Display
- Dot Pitch 7.62mm
- CSM-88211: Column Anode, Row Cathode
- CSM-88221: Column Cathode, Row Anode
- Emitting Color: Super Bright Green



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

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|------------------|----------------|
| Spec. No. | PS-ND-08090304 |
| Rev. | A |

Model No : CSM-88211M9/88221M9

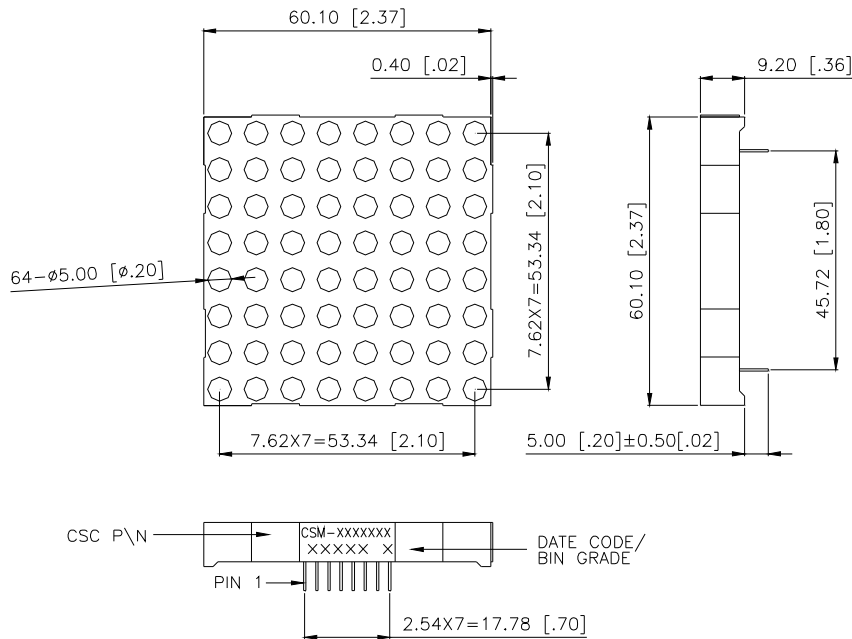
Features -

1. 2.3 inch (58.34mm) Matrix height.
2. 8x8 array with X-Y select.
3. RoHS compliant.
4. Low power consumption.
5. Easy mounting on P.C. board or socket.

Device Selection Guide -

| Part No. | Chip | | Description | |
|--------------------|----------------|---------------------------|----------------|----------------|
| | Material | Emitted Color | Column | Row |
| CSM-88211M9 | AlGaInP | Super Bright Green | Anode | Cathode |
| CSM-88221M9 | AlGaInP | Super Bright Green | Cathode | Anode |

Package Dimensions -



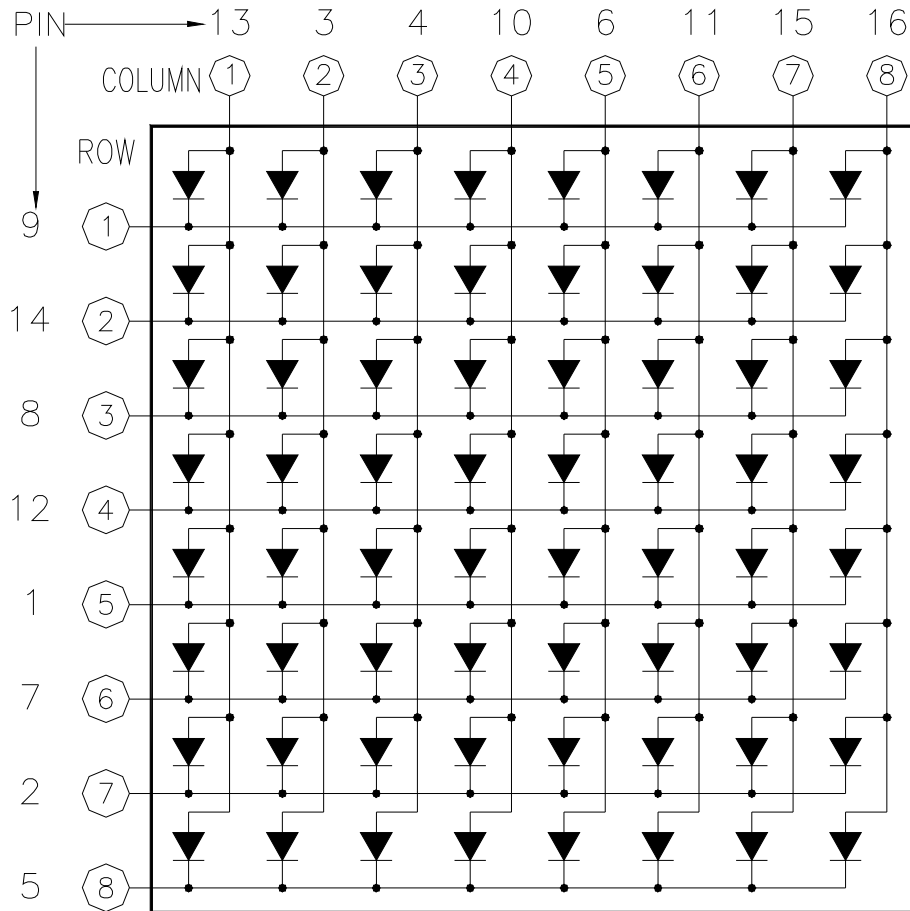
NOTE:

1. All pins are $\phi 0.5$ (.02).
2. Dimensions in millimeters (inch), tolerance is ± 0.25 (.01) unless otherwise noted.



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Internal Circuit Diagrams -



CSM-88211 Column Anode, Row Cathode

CSM-88221 Column Cathode, Row Anode



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■ Absolute Maximum Rating -

(Ta=25°C)

| Parameter | Symbol | Rating | Unit |
|---|------------------|-----------|-------|
| Power Dissipation Per Dice | P _{AD} | 70 | mW |
| Continuous Forward Current Per Dice | I _{AF} | 25 | mA |
| Peak Current Per Dice(duty cycle 1/10, 1kHz) | I _{PF} | 90 | mA |
| Derating Linear From 25°C Per Dice | - | 0.33 | mA/°C |
| Reverse Voltage Per Dice | V _R | 5 | V |
| Operating Temp. | T _{opr} | -35 ~ +85 | °C |
| Storage Temp. | T _{stg} | -35 ~ +85 | °C |
| Solder temperature 1/16 inch below seating plane for 3 seconds at 260°C | | | |

■ Electro-optical Characteristics -

(Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|-----------------------------------|------------------|------|------|------|------|----------------------------------|
| Forward Voltage Per Dot | V _F | - | 2.1 | 2.8 | V | I _F =20mA |
| Luminous Intensity Per Dot | I _v | - | 18 | - | mcd | I _F =10mA |
| Peak Emission Wavelength | λ _p | - | 570 | - | nm | I _F =20mA |
| Dominant Wavelength | λ _d | - | 572 | - | nm | I _F =20mA |
| Spectrum Radiation Bandwidth | Δλ | - | 20 | - | nm | I _F =20mA |
| Reverse Current | I _R | - | - | 100 | μA | V _R =5V |
| Luminous Intensity Matching Ratio | I _{V-m} | - | - | 2:1 | - | I _p =80mA 1/16Duty |



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Typical Electrical / Optical Characteristics Curves -

(Ta = 25°C Unless Otherwise Noted)

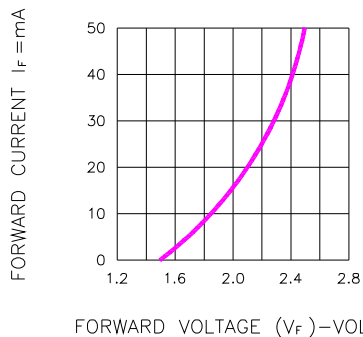


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

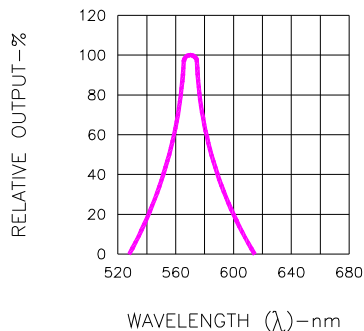


Fig.2 SPECTRAL RESPONSE

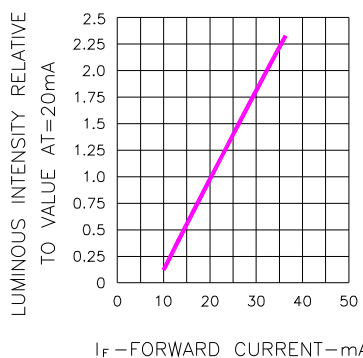


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

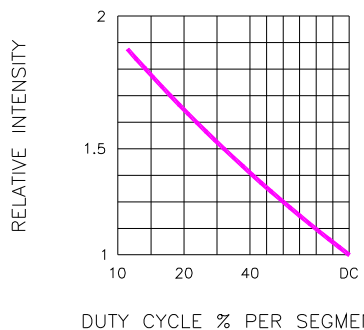


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

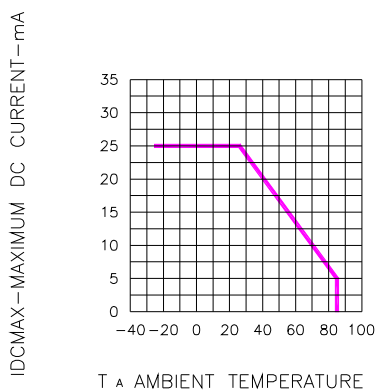


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE

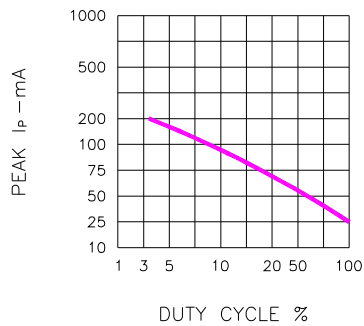


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE f=1 KHz)

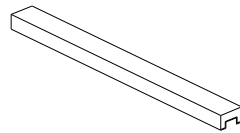


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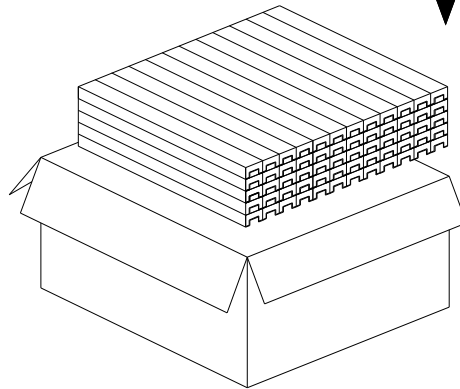
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■ Package Dimensions

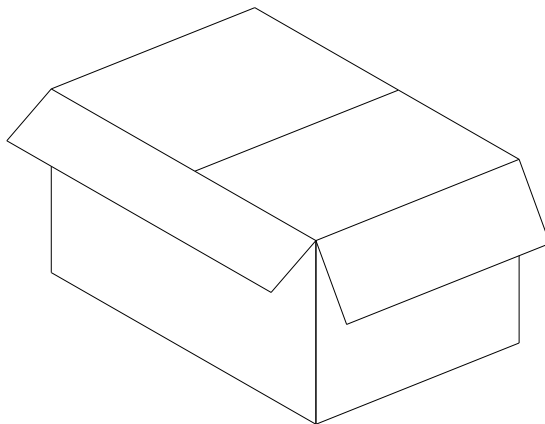
Dot-Matrix Display
Dice Code
CSM-88211\88221XX



12 Pcs Per Tube



16 Tubes Per Inner Box
Total Q'TY: 192 Pcs



2 Inner Boxes Per Carton.

Total Q'TY: 384 Pcs

Carton Size:

L540*W485*H305.5 mm

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