



PRODUCT SPECIFICATION

Model No : CSM-88108SG

Descriptions:

- 1.85 Inch Dot-Matrix Display
- 8*8 Array with X-Y Select.
- CSM-88108: Column Cathode, Row Anode
- Emitting Color: Super Bright Red
- Emitting Color: Green



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

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Model No : CSM-88108SG

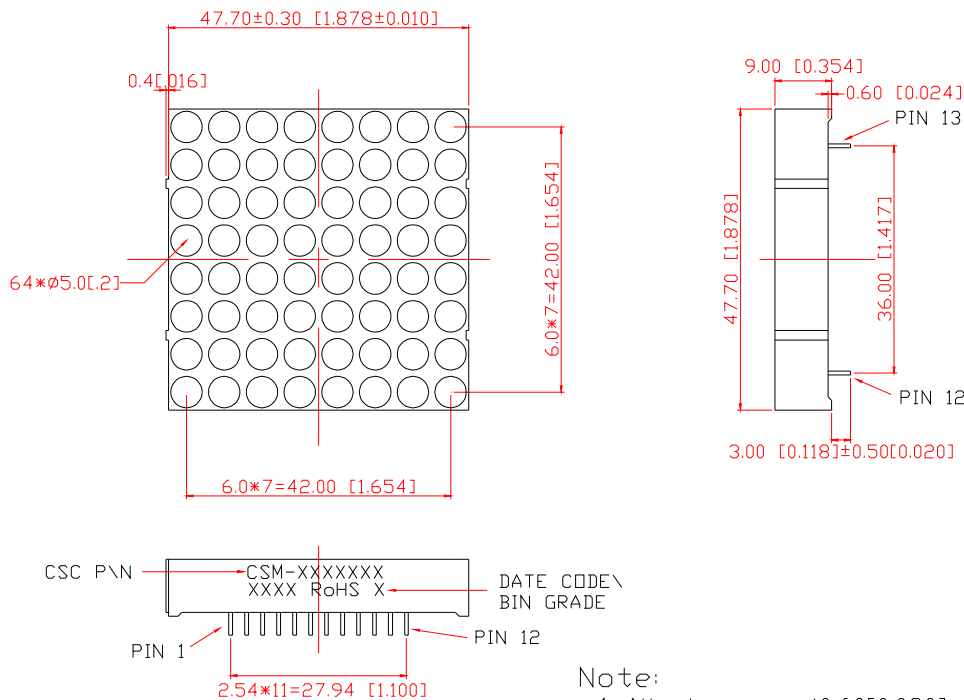
Features -

1. 1.85 inch (47.0mm) 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 -

| Part No. | Chip | | Column | Row |
|-------------|----------|------------------|---------|-------|
| | Material | Emitted Color | | |
| CSM-88108SG | AlGaAs | Super Bright Red | Cathode | Anode |
| | GaP | Yellow Green | | |

Package Dimensions -



Note:

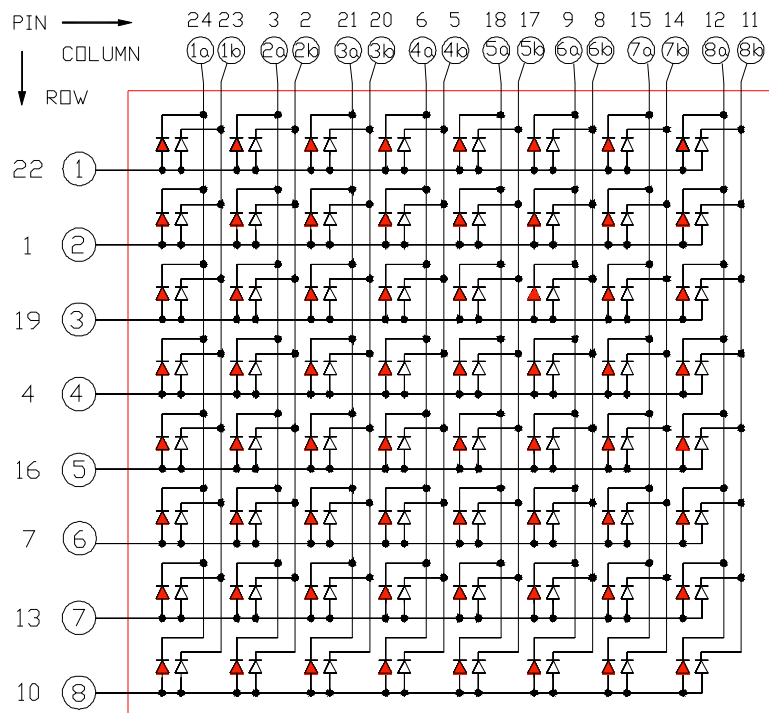
- 1 All pins are $\phi 0.60 [0.020]$ mm
- 2 Dimension in millimeters (inch), tolerance is $\pm 0.25 [0.010]$ unless otherwise noted.



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Internal Circuit Diagrams -

CSM-88108



| CSM-88108 | | | | | |
|-----------|-------------------|---------|-------------------|---------|-------------------|
| PIN NO. | FUNCTION | PIN NO. | FUNCTION | PIN NO. | FUNCTION |
| 1 | Anode Row 2 | 9 | Cathode Column 6a | 17 | Cathode Column 5b |
| 2 | Cathode Column 2b | 10 | Anode Row 8 | 18 | Cathode Column 5a |
| 3 | Cathode Column 2a | 11 | Cathode Column 8b | 19 | Anode Row 3 |
| 4 | Cathode Column 4 | 12 | Cathode Column 8a | 20 | Cathode Column 3b |
| 5 | Cathode Column 4b | 13 | Anode Row 7 | 21 | Cathode Column 3a |
| 6 | Cathode Column 4a | 14 | Cathode Column 7b | 22 | Anode Row 1 |
| 7 | Anode Row 6 | 15 | Cathode Column 7a | 23 | Cathode Column 1b |
| 8 | Cathode Column 6b | 16 | Anode Row 5 | 24 | Cathode Column 1a |

NOTE: "a" for Super Bright Red color chip
"b" for Green color chip



Model No : CSM-88108SG

■ Absolute Maximum Rating -

| Super Bright Red | | (Ta=25°C) | |
|---|------------------|-----------|-------|
| Parameter | Symbol | Rating | Unit |
| Power Dissipation Per Dice | P _{AD} | 75 | mW |
| Continuous Forward Current Per Dice | I _{AF} | 30 | mA |
| Peak Current Per Dice(duty cycle 1/10, 1kHz) | I _{PF} | 120 | mA |
| Derating Linear From 25°C Per Dice | - | 0.42 | 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 | | | |

| Yellow Green | | (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 | | | |



Model No : CSM-88108SG

■ Absolute Maximum Rating -

| Super Bright Red | | (Ta=25°C) | | | | |
|-----------------------------------|------------------|-----------|------|------|------|----------------------------------|
| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
| Forward Voltage Per Dot | V _F | - | 1.8 | 2.5 | V | I _F =20mA |
| Luminous Intensity Per Dot | I _v | - | 9 | - | mcd | I _F =10mA |
| Peak Emission Wavelength | λ _p | - | 660 | - | nm | I _F =20mA |
| Dominant Wavelength | λ _d | - | 644 | - | 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 |

| Yellow Green | | (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 | - | 7 | - | mcd | I _F =10mA |
| Peak Emission Wavelength | λ _p | - | 568 | - | nm | I _F =20mA |
| Dominant Wavelength | λ _d | - | 572 | - | nm | I _F =20mA |
| Spectrum Radiation Bandwidth | Δλ | - | 30 | - | 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 -Super Bright Red
(Ta = 25°C Unless Otherwise Noted)**

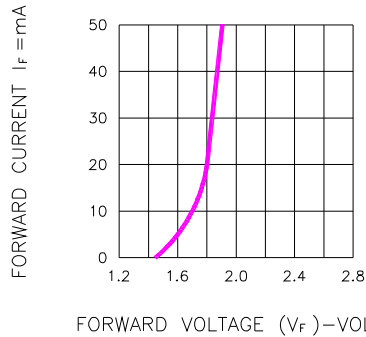


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

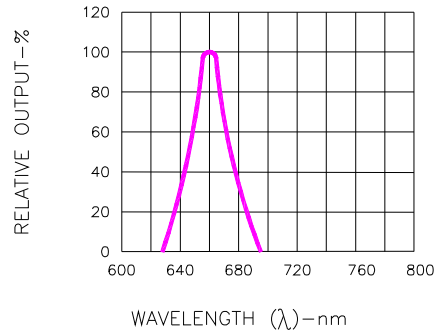


Fig.2 SPECTRAL RESPONSE

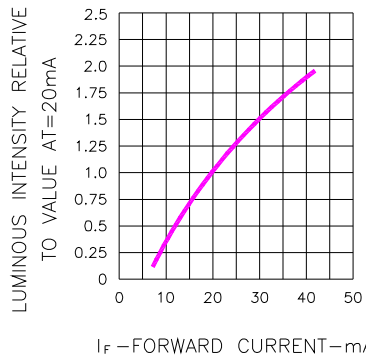


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

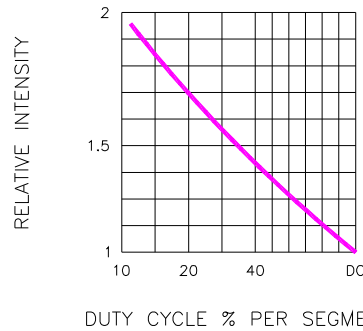


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

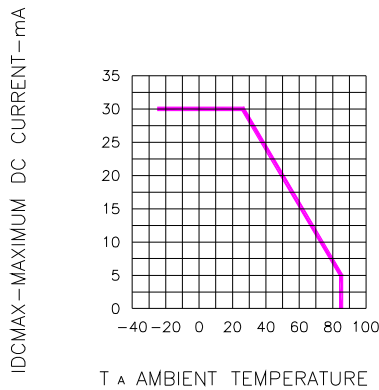


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE

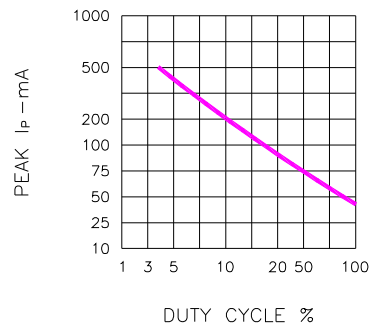


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE f=1 KHz)



Model No : CSM-88108SG

Yellow Green

(Ta = 25°C Unless Otherwise Noted)

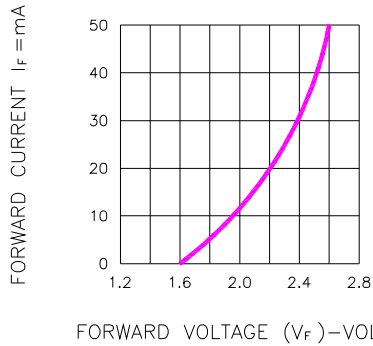


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

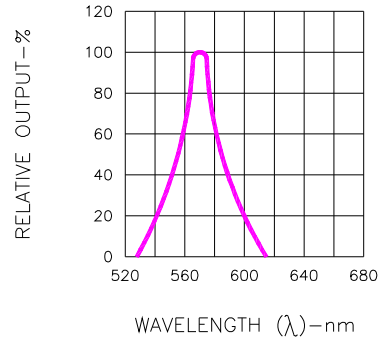


Fig.2 SPECTRAL RESPONSE

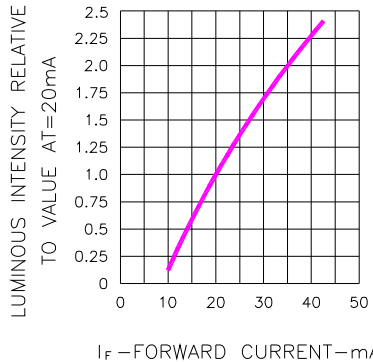


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

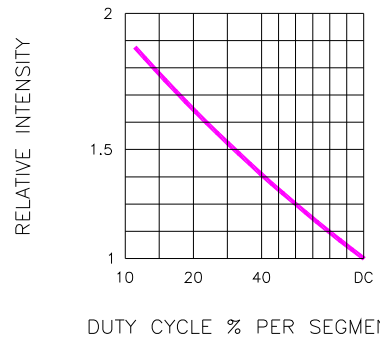


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

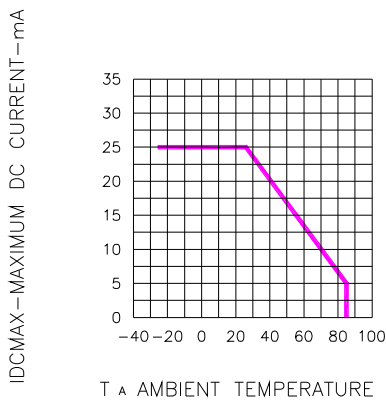


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE

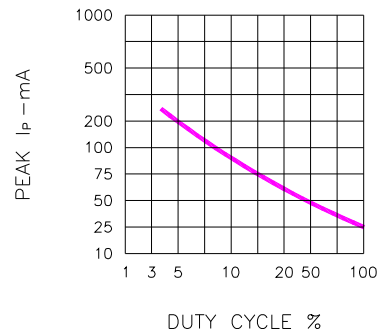
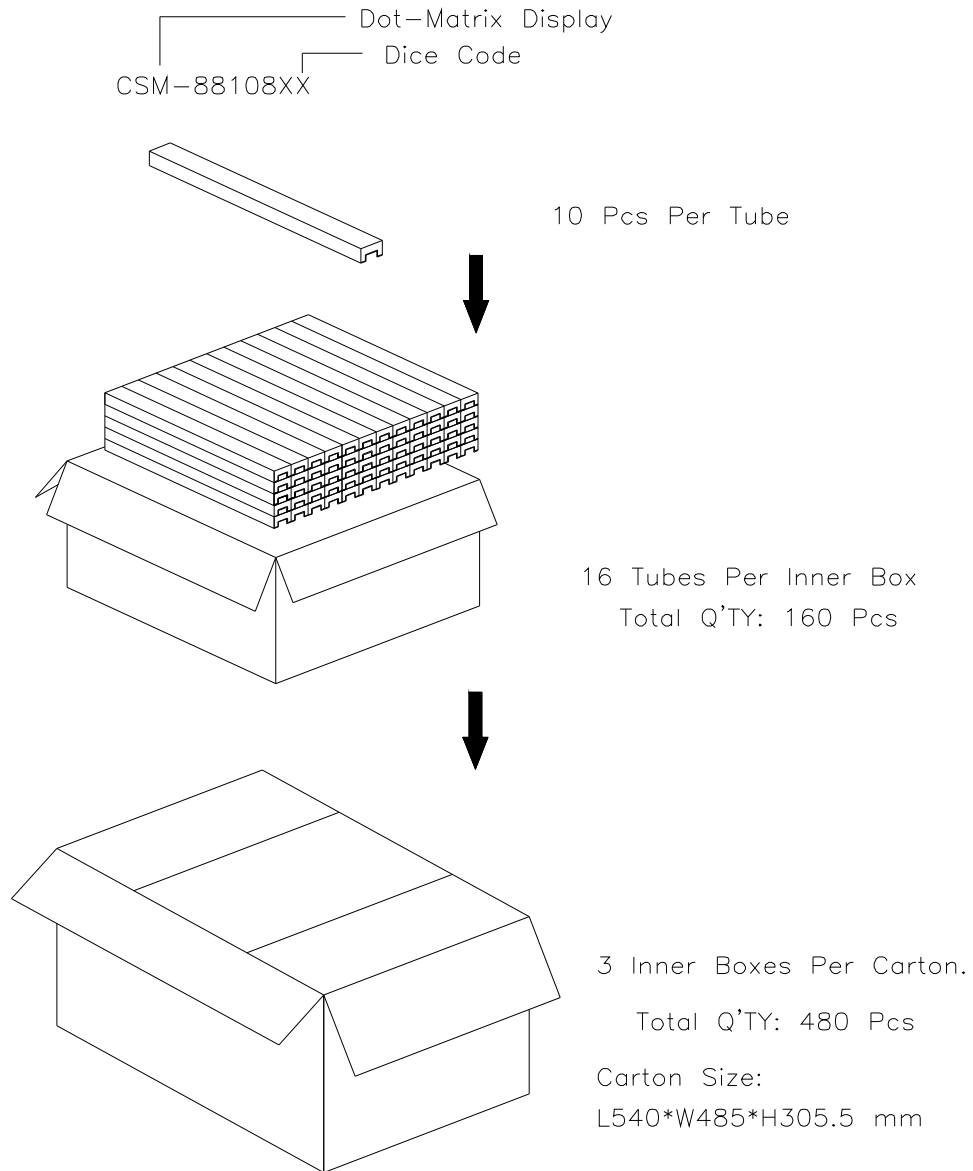


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE f=1 KHz)



Model No: CSM-88108SG

■ Package Dimensions



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