



PRODUCT SPECIFICATION

Model No: CSM-57171SG/57181SG

Descriptions:

- 1.2 Inch 5X7 Dot-Matrix Display
- Dot Pitch 4.57mm
- CSM-57171: Column Anode, Row Cathode
- CSM-57181: Column Cathode, Row Anode
- Emitting Color: Super Bright Red & Yellow Green



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

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| Spec. No. | PS-ND-08090602 |
| Rev. | A |

Model No: CSM-57171/57181SG

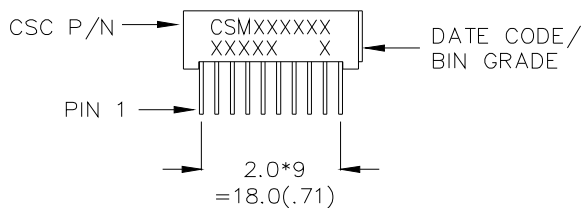
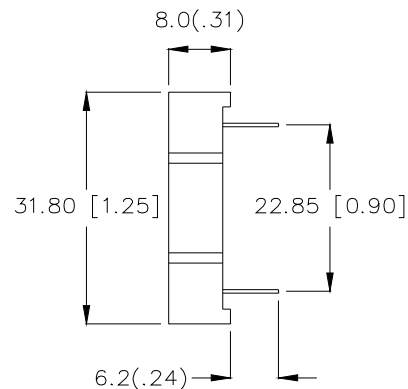
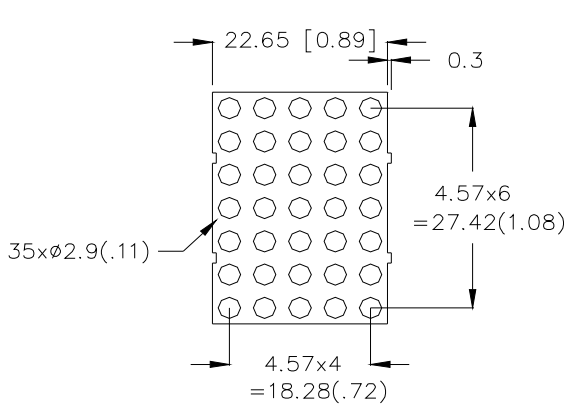
Features -

1. 1.2 inch (30.3mm) 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-57171SG | AlGaAs | Super Bright Red | Anode | Cathode |
| | GaP | Yellow Green | | |
| CSM-57181SG | AlGaAs | Super Bright Red | Cathode | Anode |
| | GaP | Yellow Green | | |

Package Dimensions -



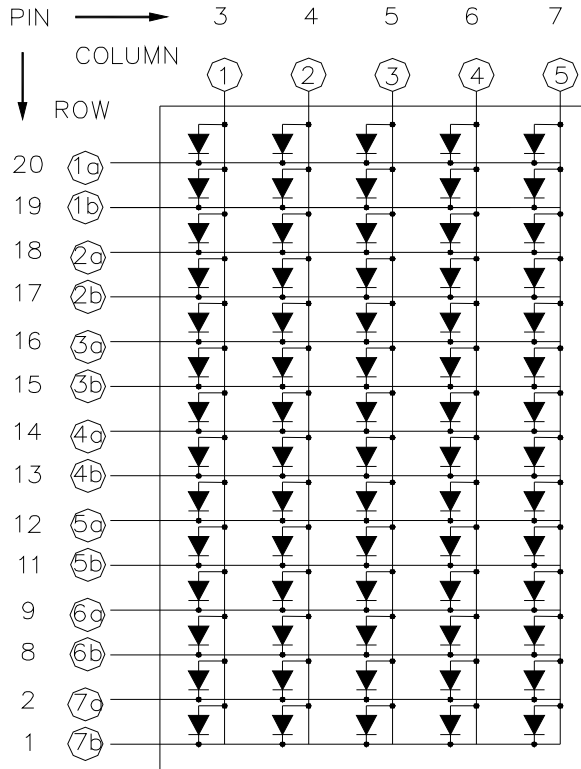
NOTE:

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



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Internal Circuit Diagrams -



NOTE: "a" Orang color chip
 "b" Yellow Green color chip
 CSM-57171 Column Anode, Row Cathode.
 (CSM-57181 Column Cathode, Row Anode.)

Absolute Maximum Rating -

| Super Bright Red | | (Ta=25°C) | |
|---|--------|-----------|-------|
| Parameter | Symbol | Rating | Unit |
| Power Dissipation Per Dice | PAD | 75 | mW |
| Continuous Forward Current Per Dice | IAF | 30 | mA |
| Peak Current Per Dice(duty cycle 1/10, 1kHz) | IPF | 120 | mA |
| Derating Linear From 25°C Per Dice | - | 0.42 | mA/°C |
| Reverse Voltage Per Dice | VR | 5 | V |
| Operating Temp. | Topr | -35 ~ +85 | °C |
| Storage Temp. | Tstg | -35 ~ +85 | °C |
| Solder temperature 1/16 inch below seating plane for 3 seconds at 260°C | | | |



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| 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 | | | |

■ Electro-optical Characteristics -

| Super Bright Red | | (Ta=25°C) | | | | |
|-----------------------------------|------------------|-----------|------|------|------|----------------------------------|
| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
| Forward Voltage Per Segment | V _F | - | 1.8 | 2.5 | V | I _F =20mA |
| Luminous Intensity Per Segment | I _v | - | 5 | - | 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 |

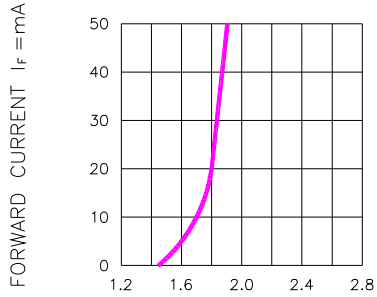
| Yellow Green | | (Ta=25°C) | | | | |
|-----------------------------------|------------------|-----------|------|------|------|----------------------------------|
| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
| Forward Voltage Per Segment | V _F | - | 2.1 | 2.8 | V | I _F =20mA |
| Luminous Intensity Per Segment | I _v | - | 4 | - | 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 |



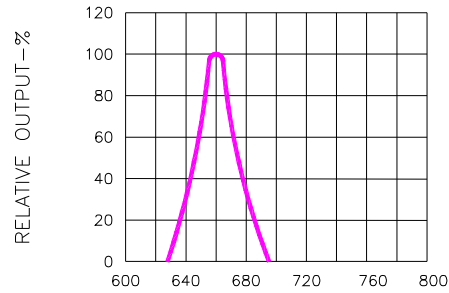
Model No: CSM-57171/57181SG

Typical Electrical / Optical Characteristics Curves -Super Bright Red

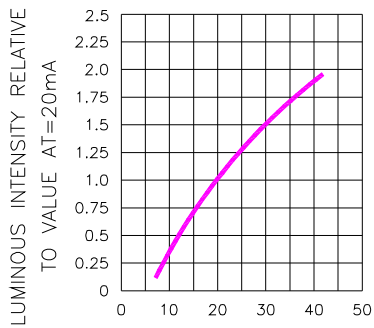
(Ta = 25°C Unless Otherwise Noted)



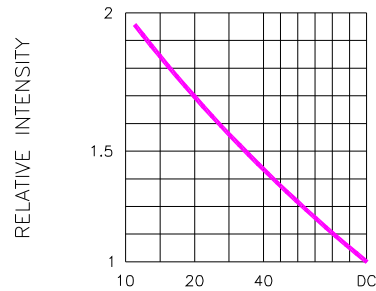
FORWARD VOLTAGE (V_F)—VOLTS
Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE



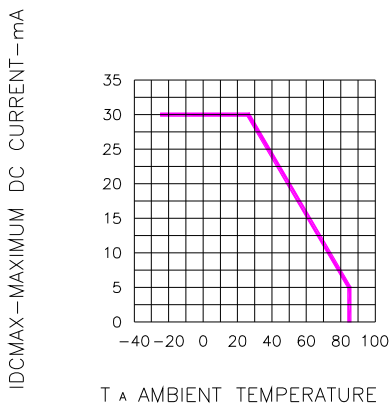
WAVELENGTH (λ)—nm
Fig.2 SPECTRAL RESPONSE



I_f —FORWARD CURRENT—mA
Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



DUTY CYCLE % PER SEGMENT
(AVERAGE I_f = 10mA)
Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE



T_a —AMBIENT TEMPERATURE °C
Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE

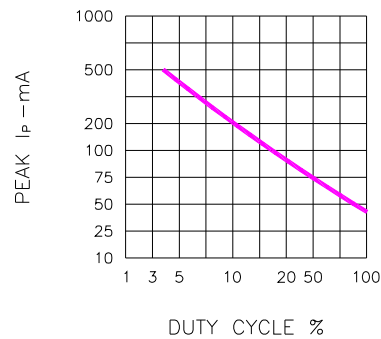


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE %
(REFRESH RATE f = 1 KHz)



Model No: CSM-57171/57181SG

■ Yellow Green

($T_a = 25^\circ\text{C}$ Unless Otherwise Noted)

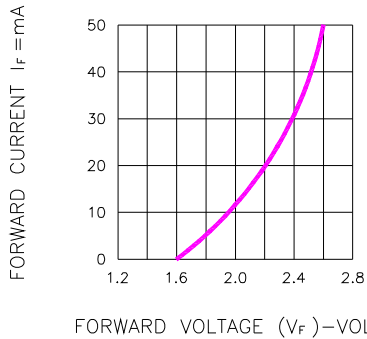


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

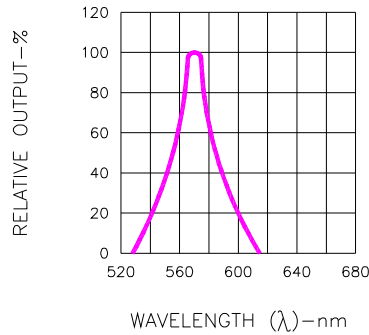


Fig.2 SPECTRAL RESPONSE

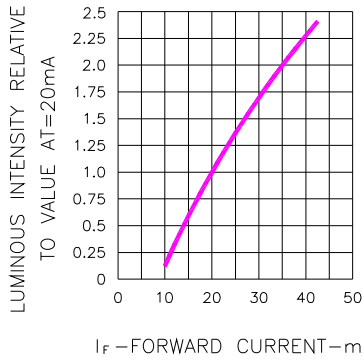


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

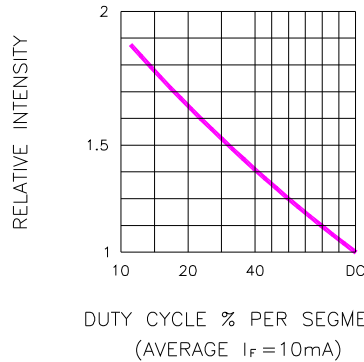


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

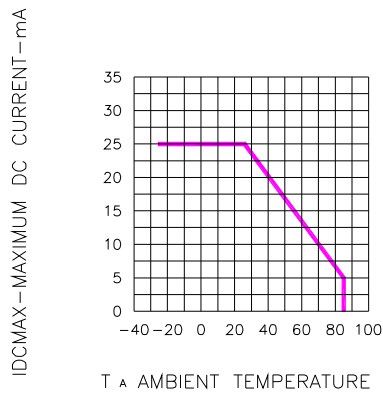


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE

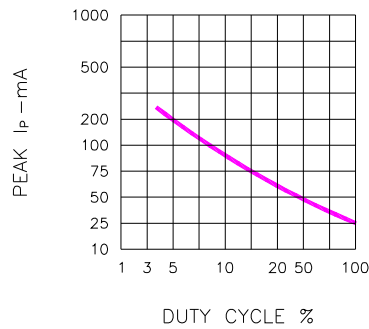


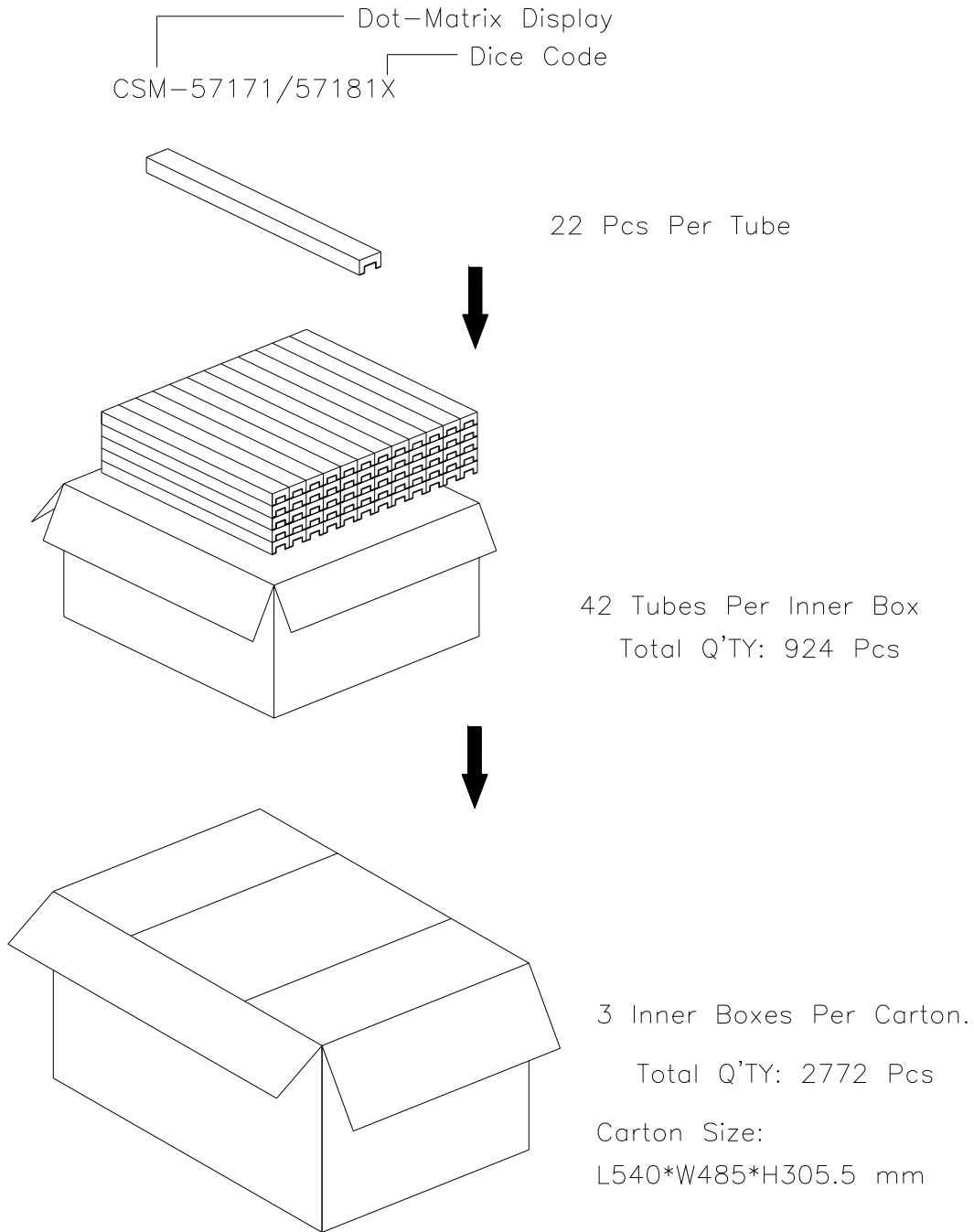
Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE $f = 1\text{ kHz}$)



| | |
|-----------|----------------|
| Spec. No. | PS-ND-08090408 |
| Rev. | A |

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■ Package Dimensions



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