CHINA
SEMICONDUCTOR
CORPORATION

Spec. No.	PS-ND-08090403
Rev.	A

PRODUCT SPECIFICATION

Model No：CSM-88181SG

Descriptions:
• 1.5 Inch 8X8 Dot-Matrix Display
• Dot Pitch 5.0mm
• CSM-88181: Column Cathode, Row Anode
• Emitting Color: Super Bright Red & Yellow Green

CUSTOMER APPROVED SIGNATURES	APPROVED BY	CHECKED BY	PREPARED BY

CHINA SEMICONDUCTOR CORPORATION
Address:2FL. NO.909,Chung-Cheng Road,
Chung-Ho City Taipei Hsien,Taiwan.

Tel:886-2-2223-9696
Fax:886-2-2223-9377

OPTO PLUS TECHNOLOGIES CO.,LTD
Address:696 Shun jiang Rd.,Ji Shan St.Shaoxing,
ZheJiang,China

Tel:86-0575-88623888
Fax:86-0575-88623112

http://www.csctw.com.tw

Model No：CSM-88181SG

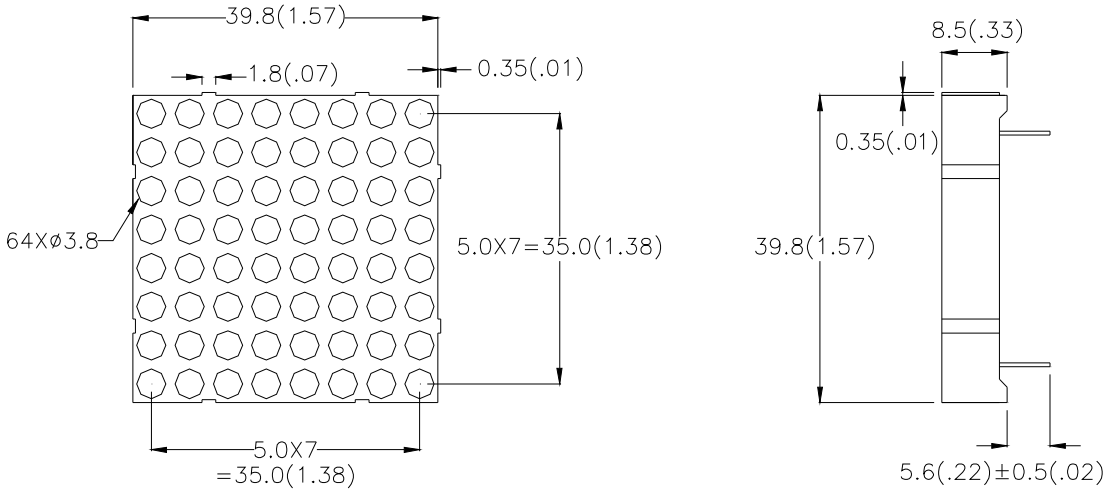
■ Features -

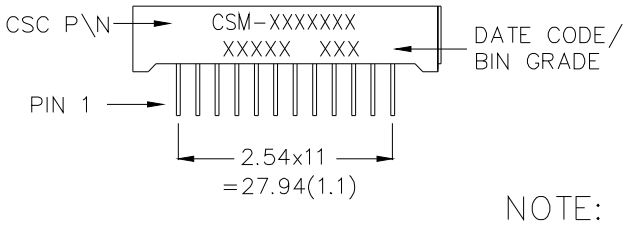
1. 1.5 inch (38.8mm) Matrix height.
2. Case mold type.
3. RoHS compliant.
4. Low power consumption.
5. Easy mounting on P.C. board or socket.

■ Device Selection Guide -

Part No.	Chip		Column	Row
	Material	Emitted Color		
CSM-88181SG	AlGaAs	Super Bright Red	Cathode	Anode
	GaP	Yellow Green		

■ Package Dimensions -





NOTE:

1. All pins are ø0.5(.02).
2. Dimensions in millimeters (inch), and tolerance is ±0.25 (.01) unless otherwise noted.
   otherwise noted.

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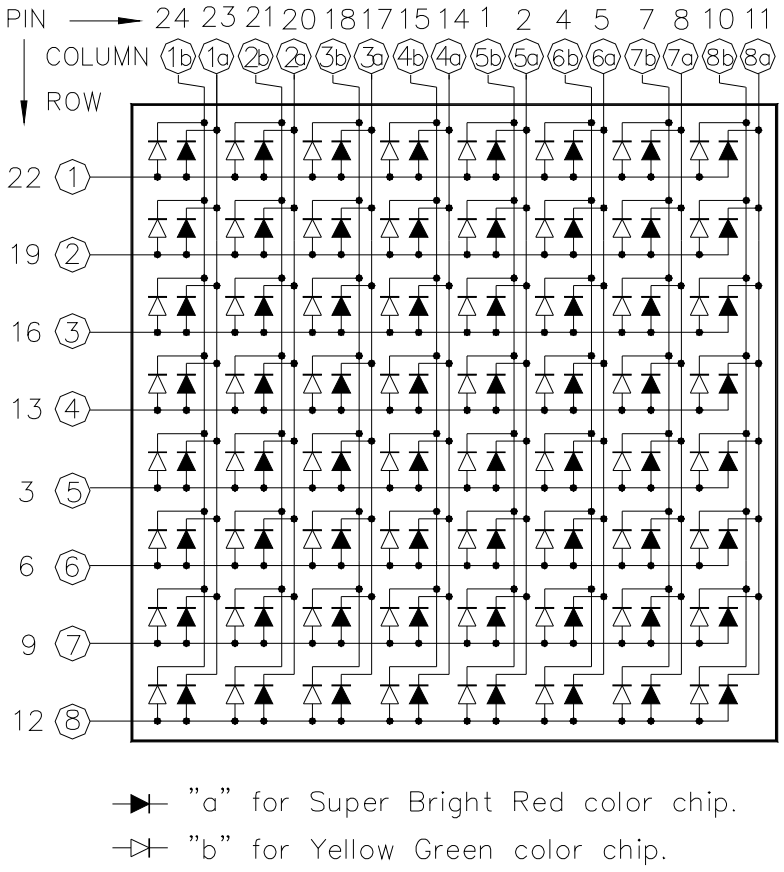
■ Internal Circuit Diagrams -



■ Absolute Maximum Rating -

Super Bright Red (Ta=25℃)

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℃ Per Dice	-	0.42	mA/℃
Reverse Voltage Per Dice	V_R	5	V
Operating Temp.	Topr	-35 ~ +85	℃
Storage Temp.	Tstg	-35 ~ +85	℃
Solder temperature 1/16 inch below seating plane for 3 seconds at 260℃			

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Yellow Green (Ta=25℃)

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℃ Per Dice	-	0.33	mA/℃
Reverse Voltage Per Dice	V_R	5	V
Operating Temp.	Topr	-35 ~ +85	℃
Storage Temp.	Tstg	-35 ~ +85	℃
Solder temperature 1/16 inch below seating plane for 3 seconds at 260℃			

■ Electro-optical Characteristics -

Super Bright Red (Ta=25℃)

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	Iv	-	8	-	mcd	I_F=10mA
Peak Emission Wavelength	λp	-	660	-	nm	I_F=20mA
Dominant Wavelength	λd	-	644	-	nm	I_F=20mA
Spectrum Radiation Bandwidth	$\Delta \lambda$	-	20	-	nm	I_F=20mA
Reverse Current	IR	-	-	100	μA	V_R=5V
Luminous Intensity Matching Ratio	IV-m	-	-	2:1	-	Ip=80mA 1/16Duty

Yellow Green (Ta=25℃)

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	Iv	-	6.5	-	ucd	I_F=10mA
Peak Emission Wavelength	λp	-	568	-	nm	I_F=20mA
Dominant Wavelength	λd	-	572	-	nm	I_F=20mA
Spectrum Radiation Bandwidth	$\Delta \lambda$	-	30	-	nm	I_F=20mA
Reverse Current	IR	-	-	100	μA	V_R=5V
Luminous Intensity Matching Ratio	IV-m	-	-	2:1		Ip=80mA 1/16Duty

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■ Typical Electrical / Optical Charateristics Curves -Super Bright Red

(Ta = 25℃ Unless Otherwise Noted)

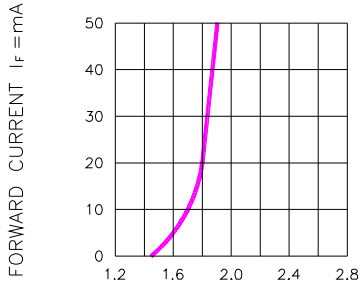

Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

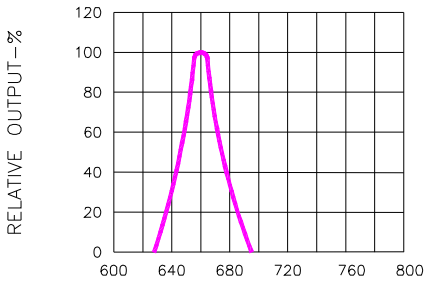

Fig.2 SPECTRAL RESPONSE

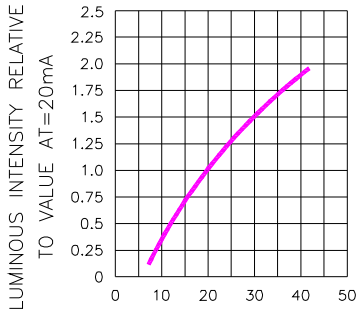

Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

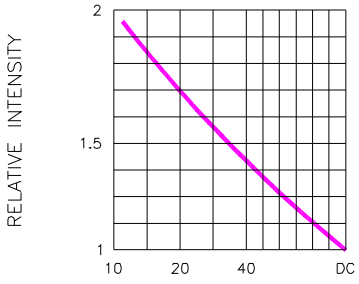

Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

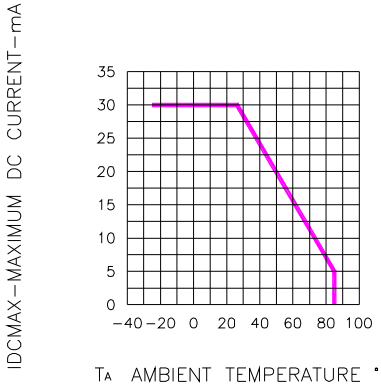

Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE

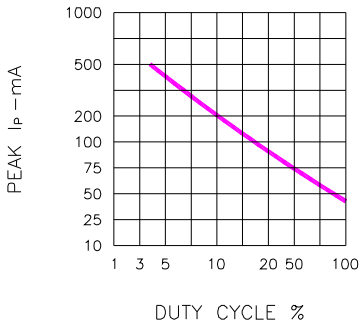

Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE f=1 KHz)

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■ Yellow Green

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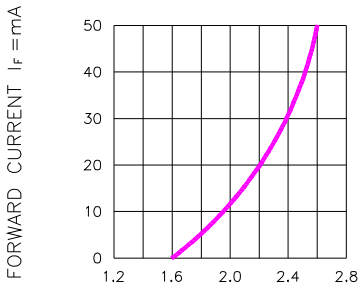
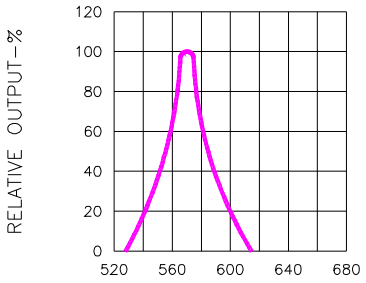


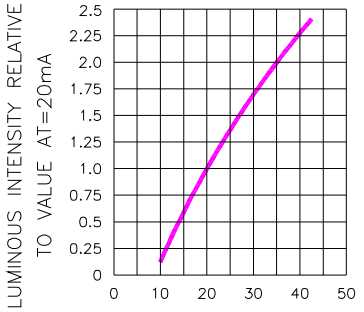
FORWARD VOLTAGE (V_F)—VOLTS

Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE



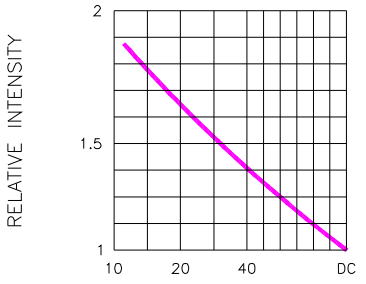
WAVELENGTH (λ)—nm

Fig.2 SPECTRAL RESPONSE



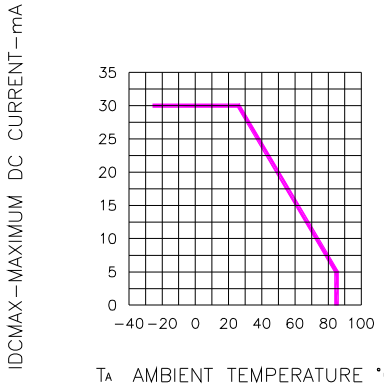
I_F—FORWARD CURRENT—mA

Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



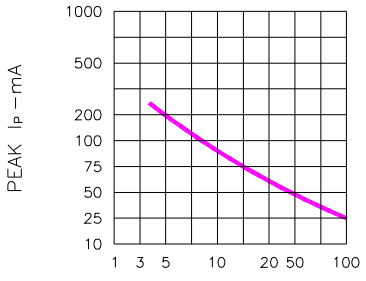
DUTY CYCLE % PER SEGMENT (AVERAGE I_F=10mA)

Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE



TA AMBIENT TEMPERATURE °C

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



DUTY CYCLE %

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

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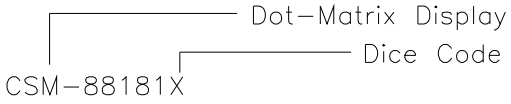
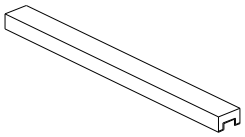
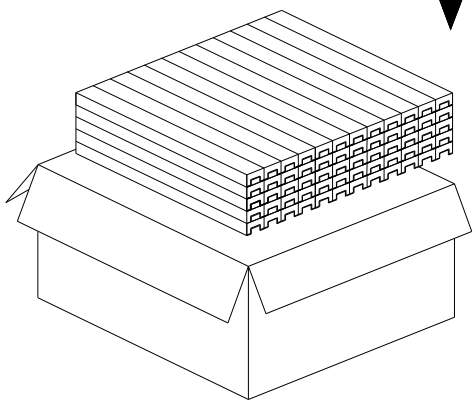
■ Package Dimensions

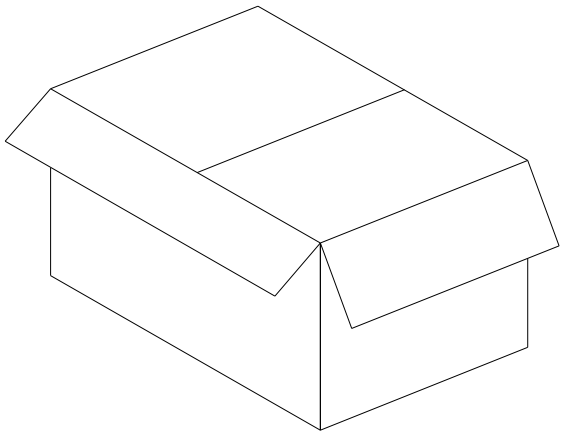




12 Pcs Per Tube



25 Tubes Per Inner Box
Total Q'TY: 300 Pcs



2 Inner Boxes Per Carton.

Total Q'TY: 600 Pcs

Carton Size:
L800*W291*H250 mm

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