CHINA
SEMICONDUCTOR
CORPORATION

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

PRODUCT SPECIFICATION

Model No：CSM-88211S/88221S

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 Red

CUSTOMER APPROVED SIGNATURES	APPROVED BY	CHECKED BY	PREPARED BY

CHINA SEMICONDUCTOR CORPORATION
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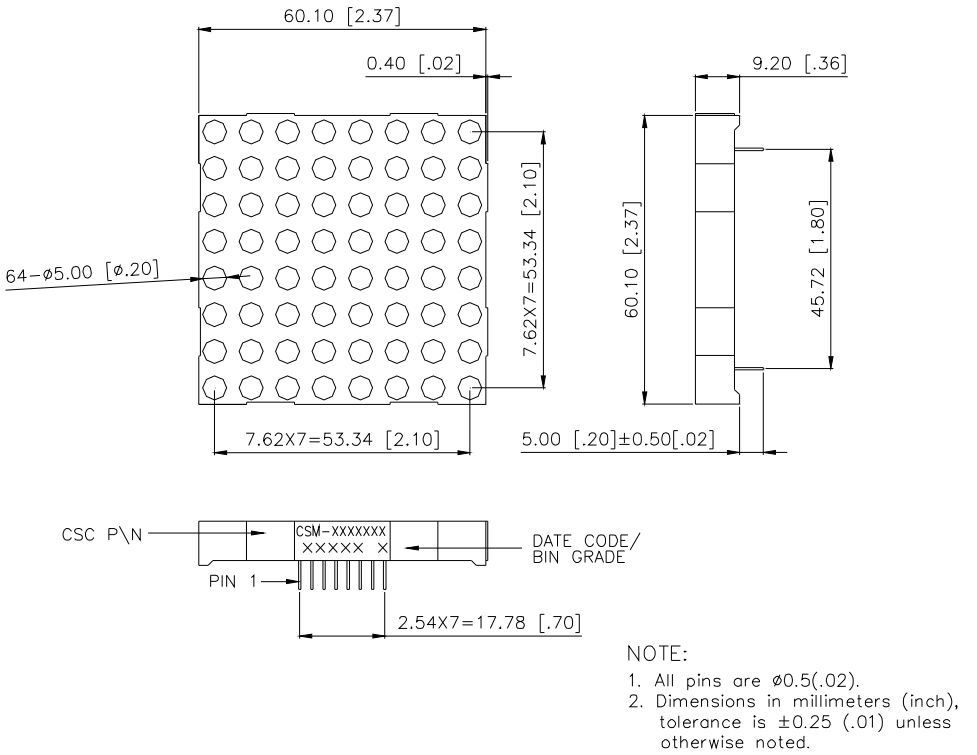
■ Features -

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-88211S	AlGaAs	Super Bright Red	Anode	Cathode
CSM-88221S	AlGaAs	Super Bright Red	Cathode	Anode

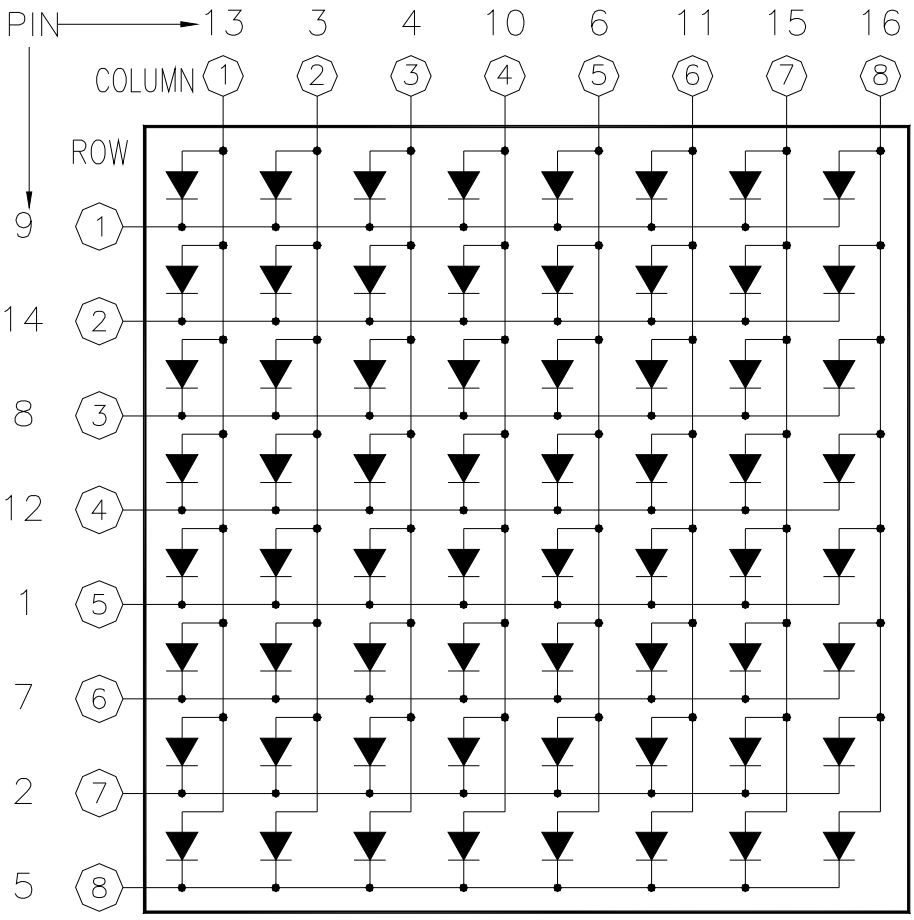
■ Package Dimensions -



NOTE:
1. All pins are ø0.5(.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℃)

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℃			

■ Electro-optical Characteristics -

(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	-	9	-	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

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■ Typical Electrical / Optical Charateristics Curves -

(Ta = 25℃ Unless Otherwise Noted)

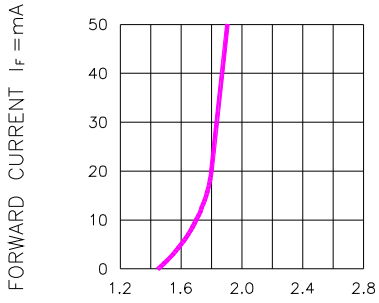


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

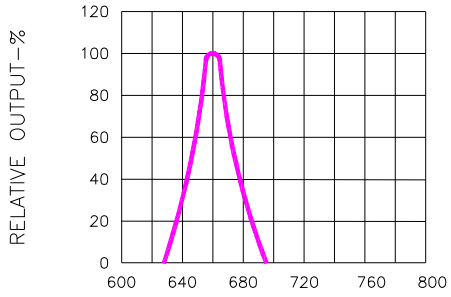


Fig.2 SPECTRAL RESPONSE

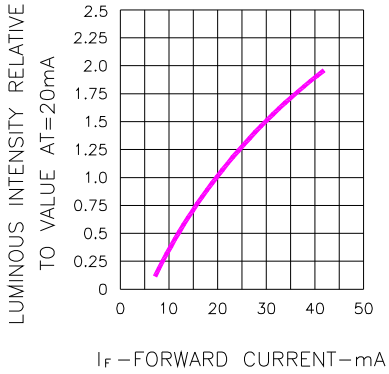


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

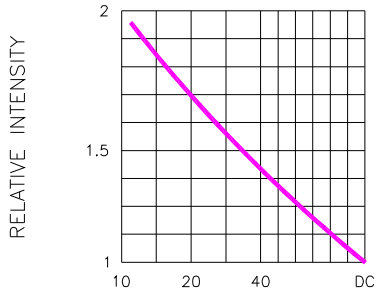


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

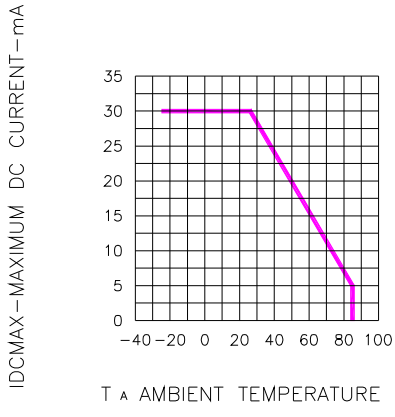


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE

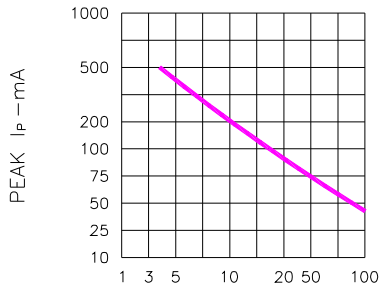
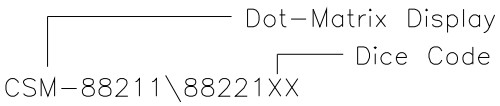
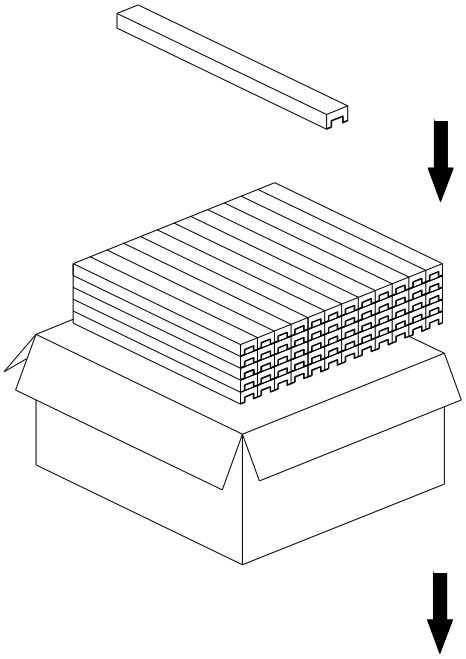


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE f=1 KHz)

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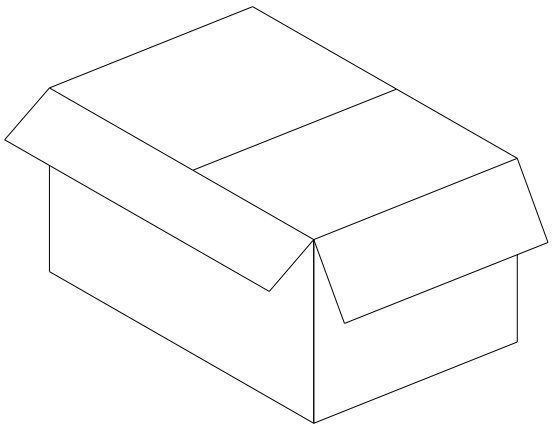
■ Package Dimensions





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