



# PRODUCT SPECIFICATION

**Model No : CSM-88211G/88221G**

Descriptions:
<ul style="list-style-type: none"> <li>• 2.3 Inch 8X8 Dot-Matrix Display</li> <li>• Dot Pitch 7.62mm</li> <li>• CSM-88211: Column Anode, Row Cathode</li> <li>• CSM-88221: Column Cathode, Row Anode</li> <li>• Emitting Color: Yellow Green</li> </ul>



CUSTOMER APPROVED SIGNATURES	APPROVED BY	CHECKED BY	PREPARED BY

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<b>Spec. No.</b>	PS-ND-08090304
<b>Rev.</b>	A

**Model No : CSM-88211G/88221G**

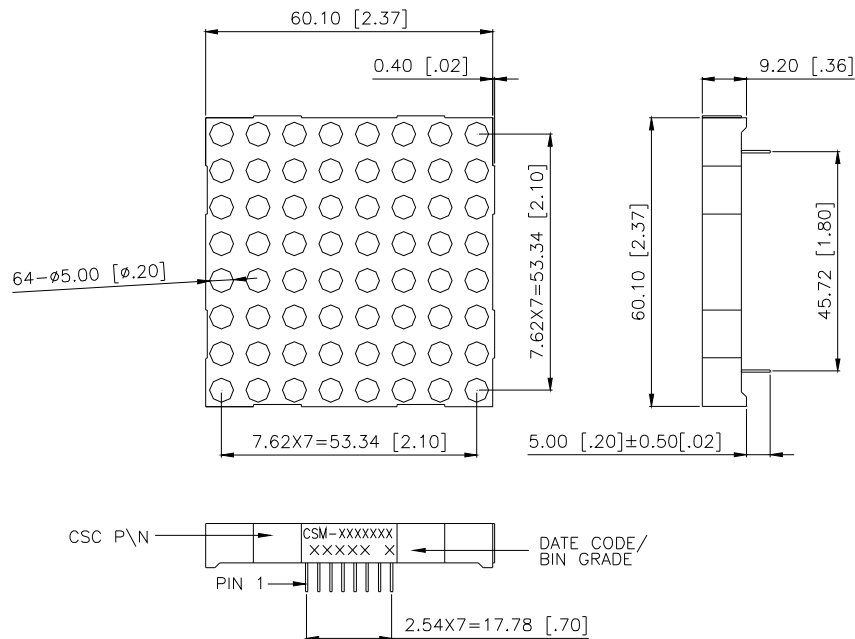
**■ Features -**

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
<b>CSM-88211G</b>	<b>GaP</b>	<b>Yellow Green</b>	<b>Anode</b>	<b>Cathode</b>
<b>CSM-88221G</b>	<b>GaP</b>	<b>Yellow Green</b>	<b>Cathode</b>	<b>Anode</b>

**■ Package Dimensions -**

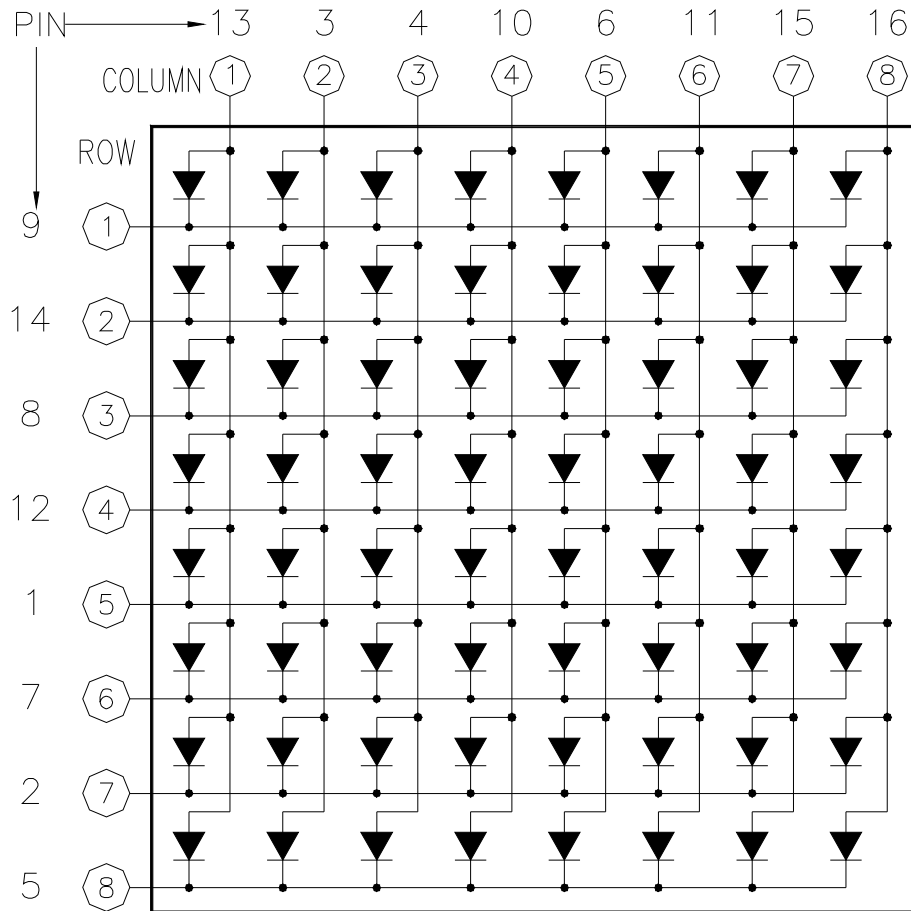


**NOTE:**  
 1. All pins are  $\phi 0.5$ (.02).  
 2. Dimensions in millimeters (inch), tolerance is  $\pm 0.25$  (.01) unless otherwise noted.



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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	<b>Pd</b>	70	mW
Continuous Forward Current Per Dice	<b>IAF</b>	25	mA
Peak Current Per Dice(duty cycle 1/10, 1kHz)	<b>IPF</b>	90	mA
Derating Linear From 25°C Per Dice	-	0.33	mA/°C
Reverse Voltage Per Dice	<b>VR</b>	5	V
Operating Temp.	<b>Topr</b>	-35 ~ +85	°C
Storage Temp.	<b>Tstg</b>	-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	<b>VF</b>	-	2.1	2.8	V	IF=20mA
Luminous Intensity Per Dot	<b>IV</b>	-	7	-	mcd	IF=10mA
Peak Emission Wavelength	$\lambda_p$	-	568	-	nm	IF=20mA
Dominant Wavelength	$\lambda_d$	-	572	-	nm	IF=20mA
Spectrum Radiation Bandwidth	$\Delta \lambda$	-	30	-	nm	IF=20mA
Reverse Current	IR	-	-	100	$\mu A$	VR=5V
Luminous Intensity Matching Ratio	<b>IV-m</b>	-	-	2:1	-	Ip=80mA 1/16Duty





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**Typical Electrical / Optical Characteristics Curves -**

**(Ta = 25°C Unless Otherwise Noted)**

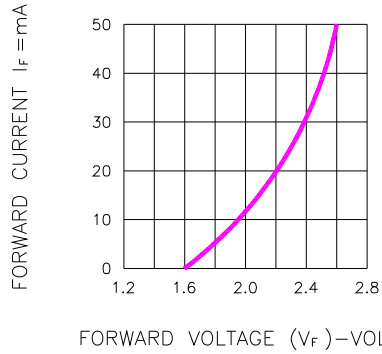


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

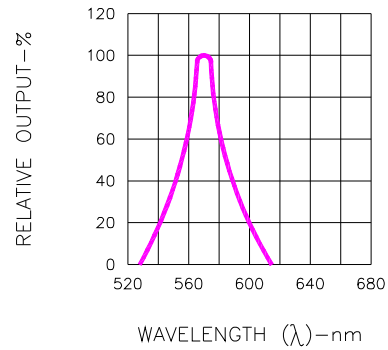


Fig.2 SPECTRAL RESPONSE

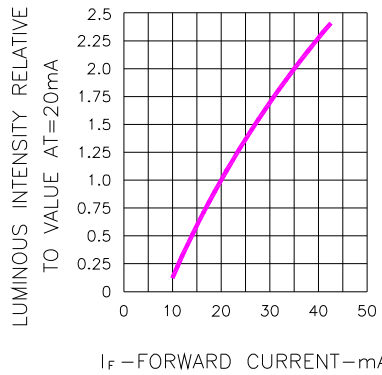


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

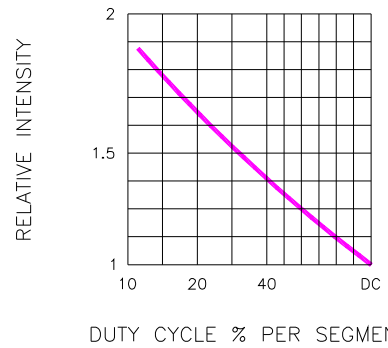


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

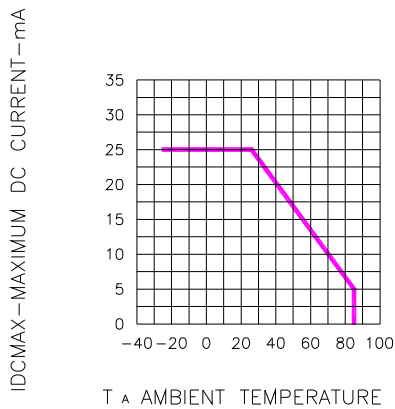


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE

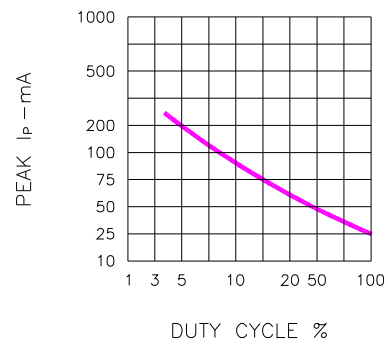


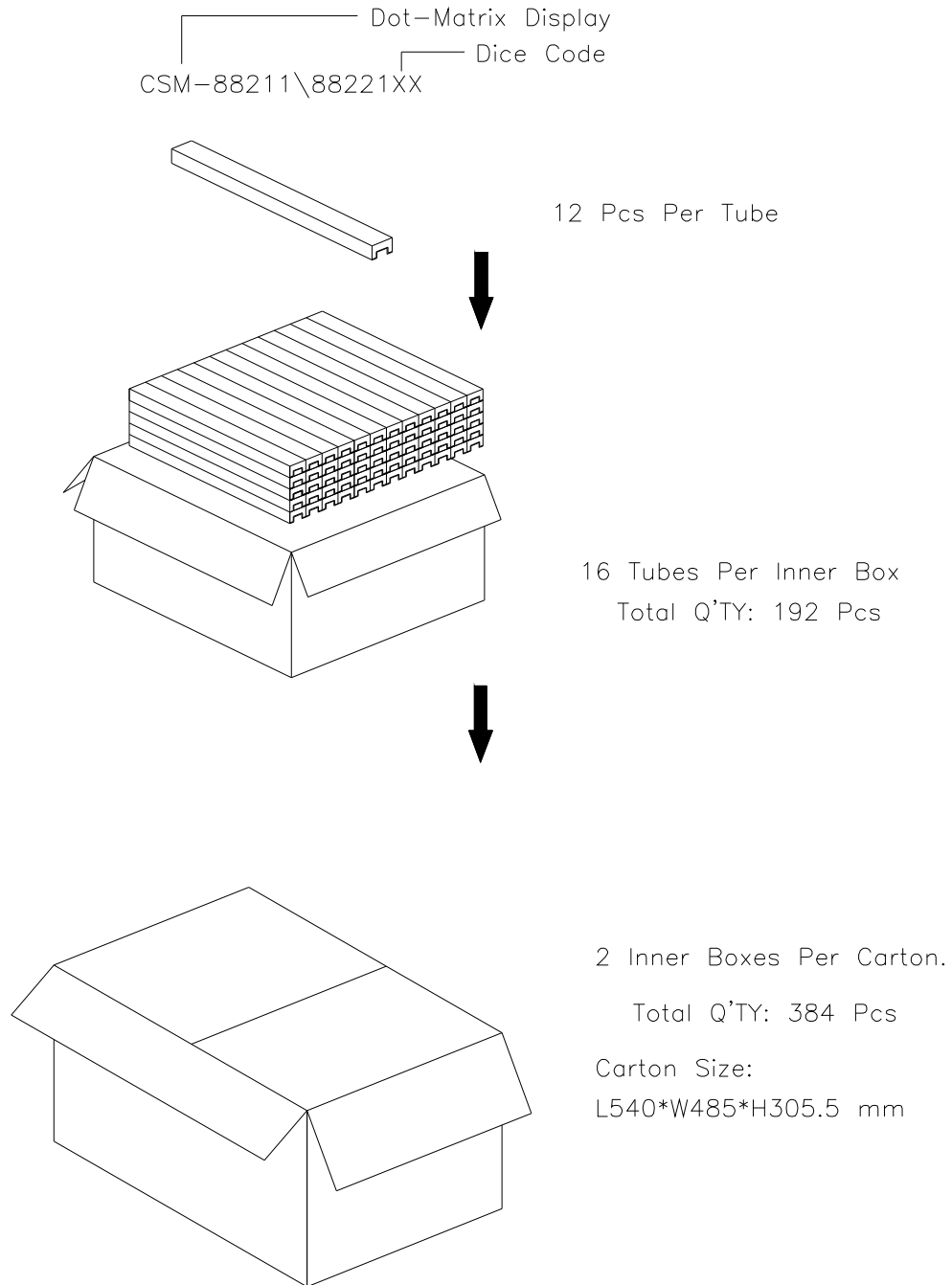
Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE f=1 KHz)



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### ■ Package Dimensions



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