



Spec. No.	PS-ND-08090401
Rev.	A

# PRODUCT SPECIFICATION

**Model No : CSM-88160EG**

## Descriptions:

- 1.2 Inch 8X8 Dot-Matrix Display
- Dot Pitch 4.0mm
- CSM-88160: Column Cathode, Row Anode
- Emitting Color: Orange & Yellow Green



CUSTOMER APPROVED SIGNATURES	APPROVED BY	CHECKED BY	PREPARED BY

**CHINA SEMICONDUCTOR CORPORATION**  
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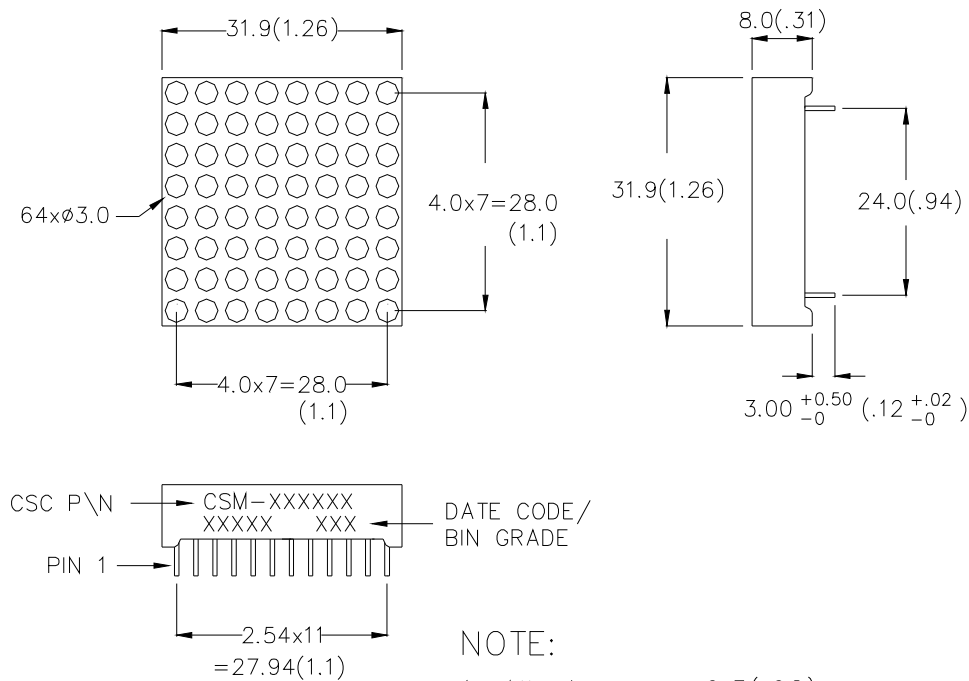
**Features -**

1. 1.2 inch (31.0mm) 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-88160EG	GaAsP	Orange	Cathode	Anode
	GaP	Yellow Green		

**Package Dimensions -**



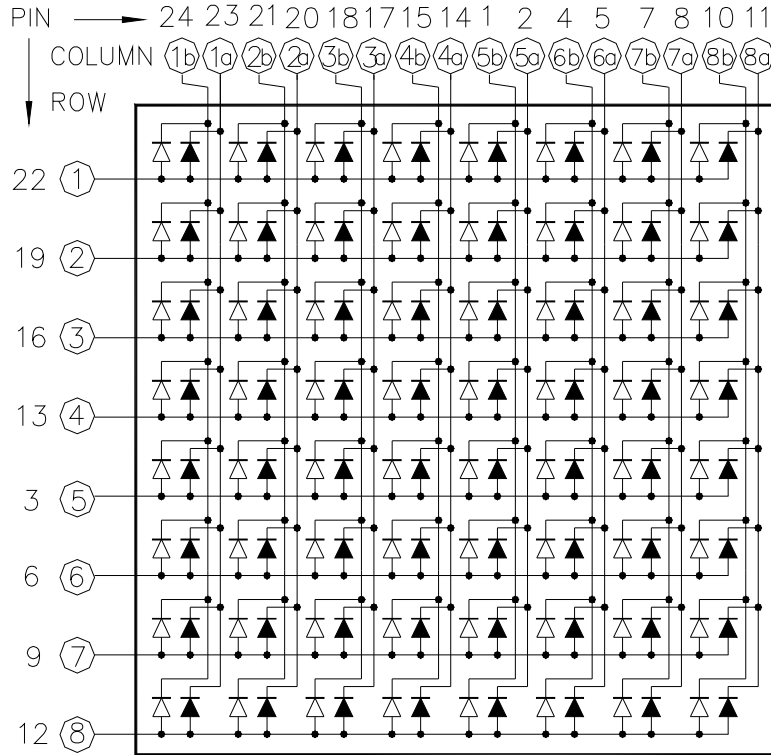
**NOTE:**

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



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Internal Circuit Diagrams -



-▶- "a" for Orange color chip.  
 -▷- "b" for Yellow Green color chip.

Absolute Maximum Rating -

Orange		(Ta=25°C)	
Parameter	Symbol	Rating	Unit
Power Dissipation Per Dice	PAD	70	mW
Continuous Forward Current Per Dice	IAF	25	mA
Peak Current Per Dice(duty cycle 1/10, 1kHz)	IPF	90	mA
Derating Linear From 25°C Per Dice	-	0.33	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	PAD	70	mW
Continuous Forward Current Per Dice	IAF	25	mA
Peak Current Per Dice(duty cycle 1/10, 1kHz)	IPF	90	mA
Derating Linear From 25°C Per Dice	-	0.33	mA/°C
Reverse Voltage Per Dice	VR	5	V
Operating Temp.	Topr	-35 ~ +85	°C
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Solder temperature 1/16 inch below seating plane for 3 seconds at 260°C			

■ Electro-optical Characteristics -

Orange		(Ta=25°C)				
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Forward Voltage Per Dot	VF	-	2.0	2.8	V	IF=20mA
Luminous Intensity Per Dot	Iv	-	4	-	mcd	IF=10mA
Peak Emission Wavelength	$\lambda_p$	-	632	-	nm	IF=20mA
Dominant Wavelength	$\lambda_d$	-	624	-	nm	IF=20mA
Spectrum Radiation Bandwidth	$\Delta \lambda$	-	35	-	nm	IF=20mA
Reverse Current	IR	-	-	100	$\mu A$	VR=5V
Luminous Intensity Matching Ratio	IV-m	-	-	2:1	-	Ip=80mA 1/16Duty

Yellow Green		(Ta=25°C)				
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Forward Voltage Per Dot	VF	-	2.1	2.8	V	IF=20mA
Luminous Intensity Per Dot	Iv	-	5	-	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	IV-m	-	-	2:1	-	Ip=80mA 1/16Duty



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**Typical Electrical / Optical Characteristics Curves -Orange**

(Ta = 25°C Unless Otherwise Noted)

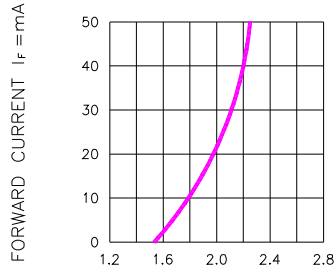


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

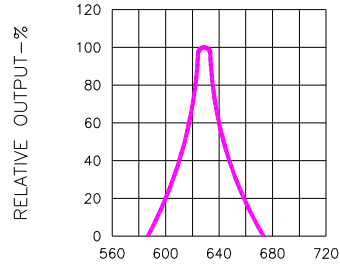


Fig.2 SPECTRAL RESPONSE

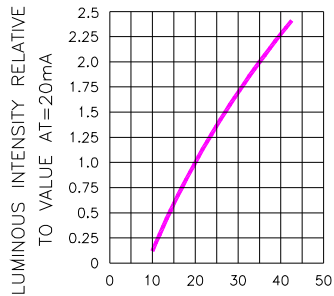


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

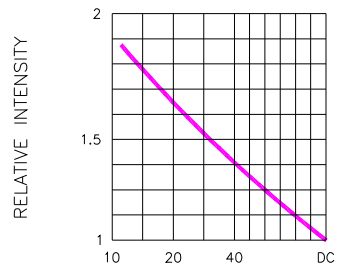


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

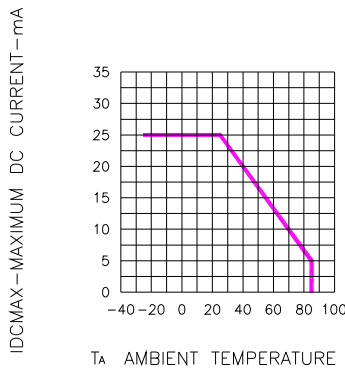


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE

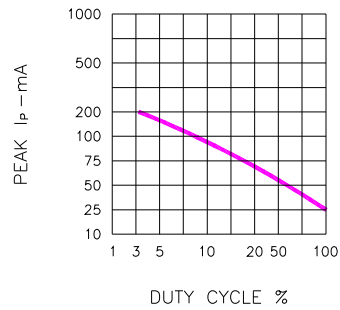


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE (REFRESH RATE f=1 KHz)



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■ Yellow Green

(Ta = 25°C Unless Otherwise Noted)

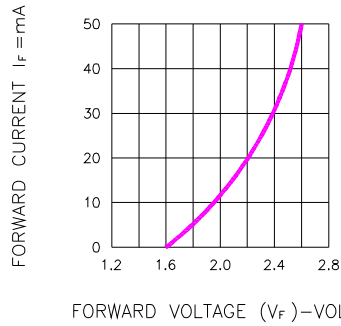


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

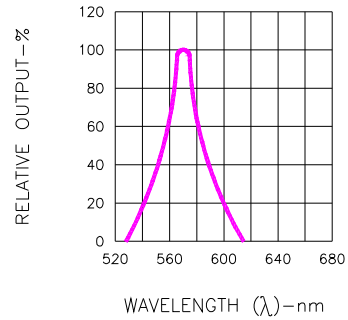


Fig.2 SPECTRAL RESPONSE

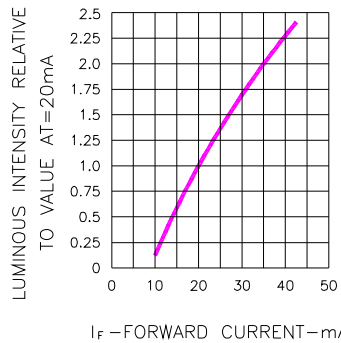


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

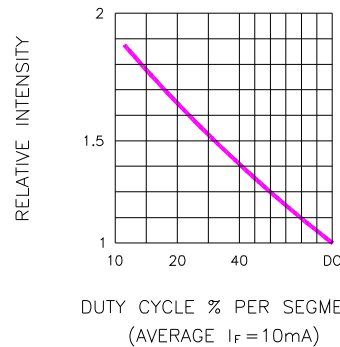


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

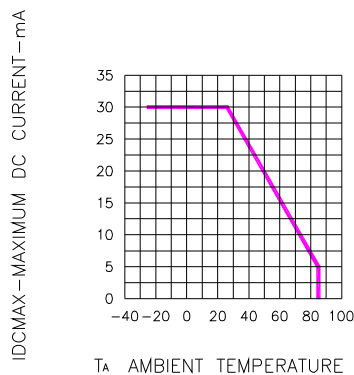


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE

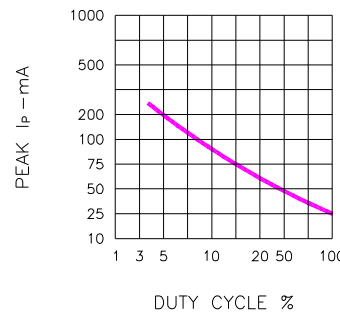


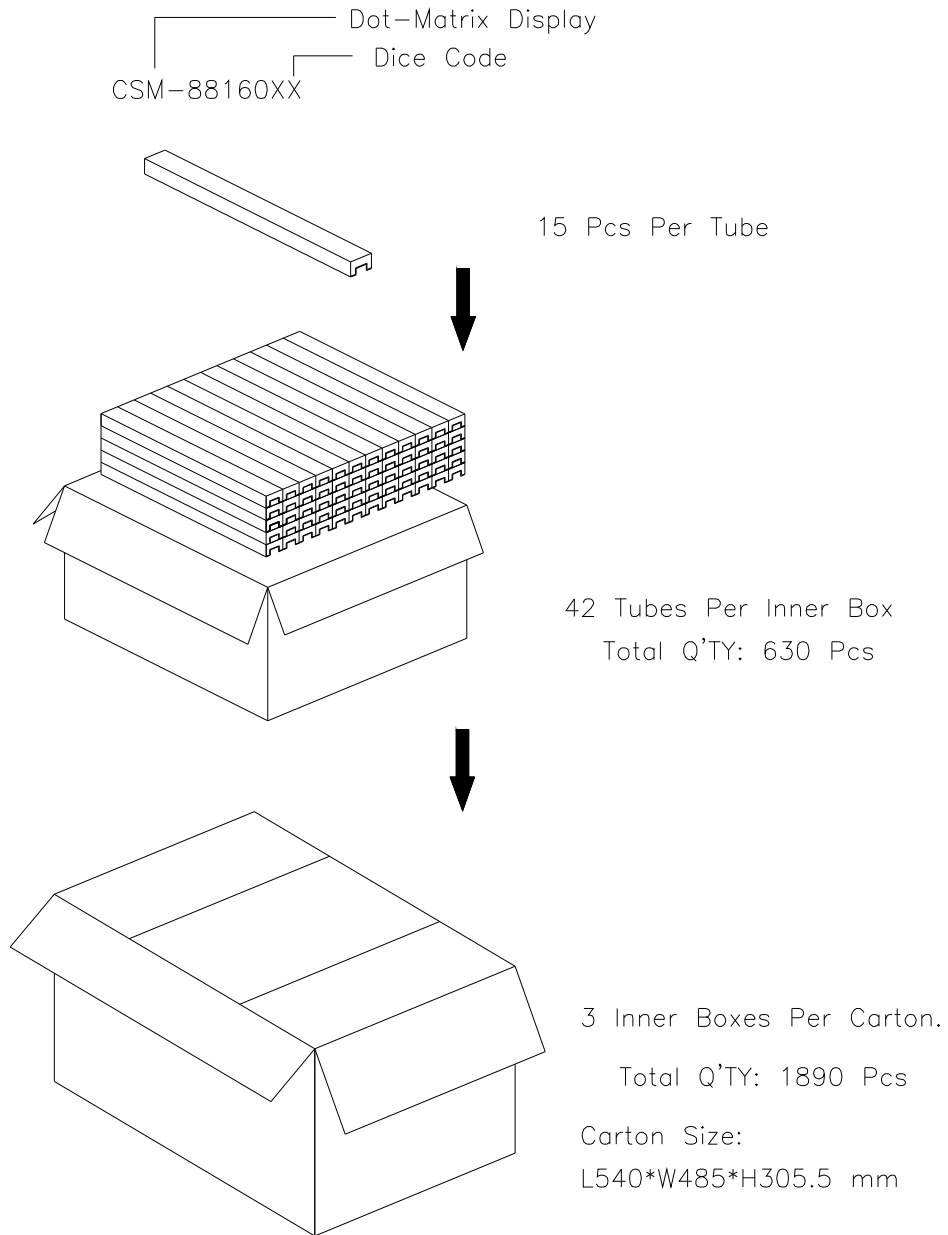
Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE f=1 KHz)



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■ Package Dimensions



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