



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

# PRODUCT SPECIFICATION

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

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: Orange</li> </ul>



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



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

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

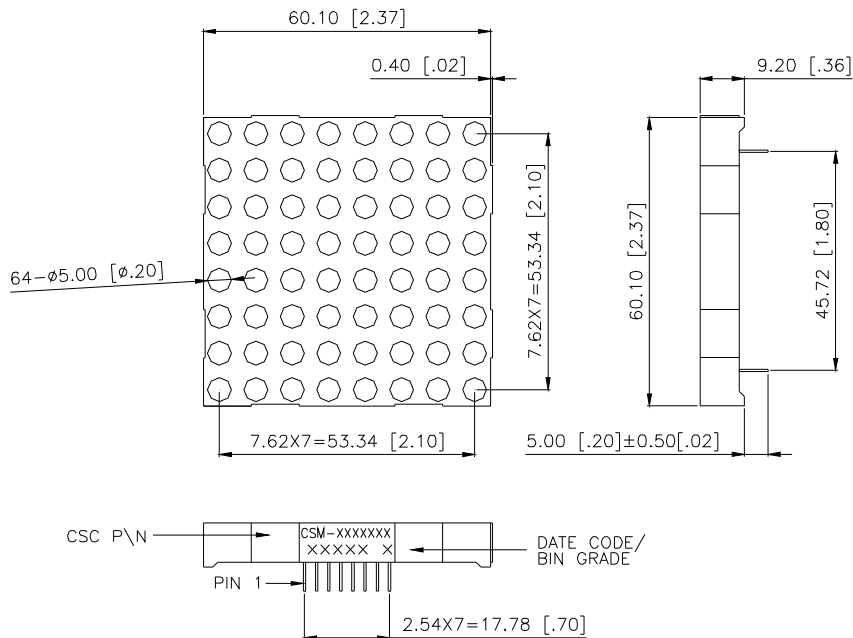
**■ Features -**

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-88211E</b>	<b>GaAsP</b>	<b>Orange</b>	<b>Anode</b>	<b>Cathode</b>
<b>CSM-88221E</b>	<b>GaAsP</b>	<b>Orange</b>	<b>Cathode</b>	<b>Anode</b>

**■ Package Dimensions -**



**NOTE:**

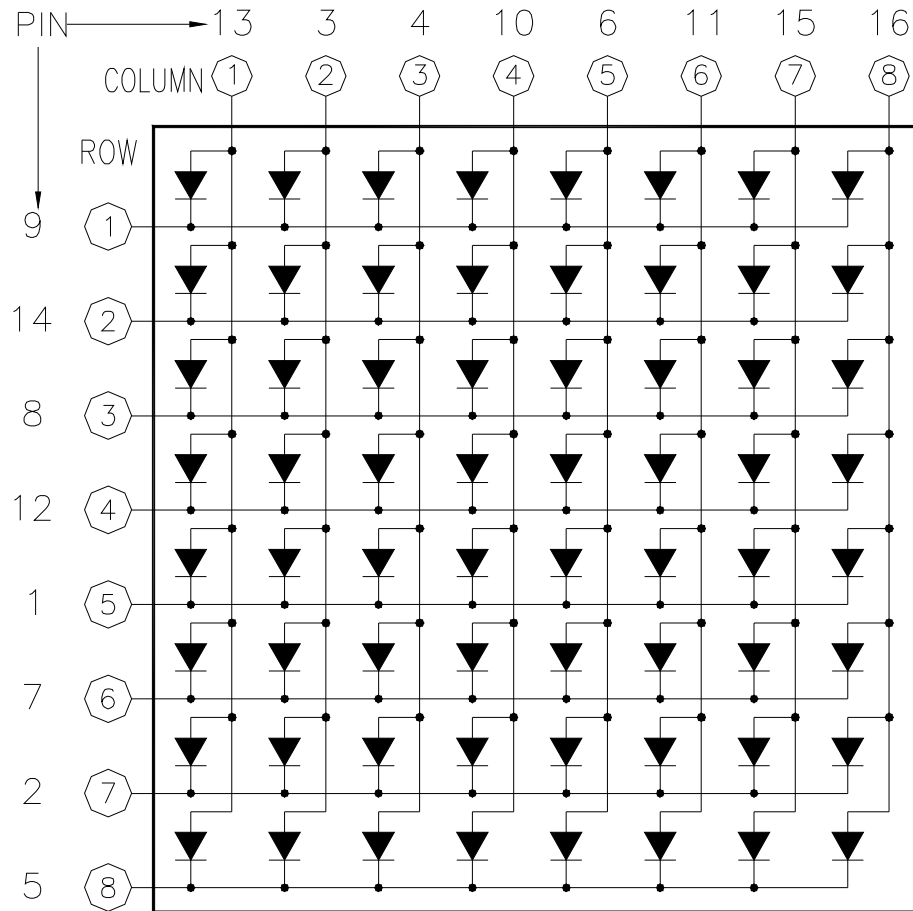
1. All pins are ø0.5(.02).
2. Dimensions in millimeters (inch), tolerance is ±0.25 (.01) unless otherwise noted.



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

Model No : CSM-88211E/88221E

Internal Circuit Diagrams -



CSM-88211 Column Anode, Row Cathode

CSM-88221 Column Cathode, Row Anode



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

Model No : CSM-88211E/88221E

■ Absolute Maximum Rating -

(Ta=25°C)

Parameter	Symbol	Rating	Unit
Power Dissipation Per Dice	P <sub>AD</sub>	70	mW
Continuous Forward Current Per Dice	I <sub>AF</sub>	25	mA
Peak Current Per Dice(duty cycle 1/10, 1kHz)	I <sub>PF</sub>	90	mA
Derating Linear From 25°C Per Dice	-	0.33	mA/°C
Reverse Voltage Per Dice	V <sub>R</sub>	5	V
Operating Temp.	T <sub>opr</sub>	-35 ~ +85	°C
Storage Temp.	T <sub>stg</sub>	-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	V <sub>F</sub>	-	2.0	2.8	V	I <sub>F</sub> =20mA
Luminous Intensity Per Dot	I <sub>v</sub>	-	6	-	mcd	I <sub>F</sub> =10mA
Peak Emission Wavelength	λ <sub>p</sub>	-	632	-	nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>	-	624	-	nm	I <sub>F</sub> =20mA
Spectrum Radiation Bandwidth	Δλ	-	35	-	nm	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>	-	-	100	μA	V <sub>R</sub> =5V
Luminous Intensity Matching Ratio	I <sub>V-m</sub>	-	-	2:1	-	I <sub>p</sub> =80mA 1/16Duty



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

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

**Typical Electrical / Optical Characteristics Curves -**

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

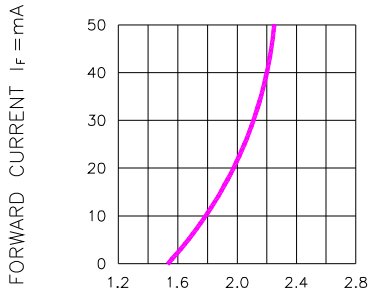


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

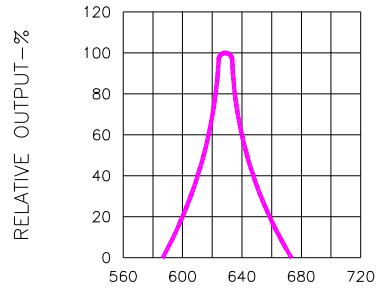


Fig.2 SPECTRAL RESPONSE

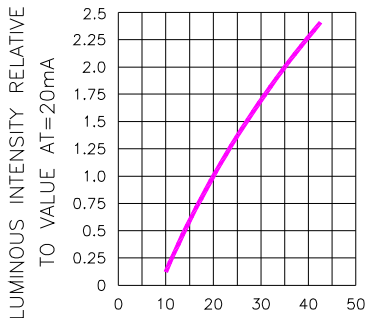


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

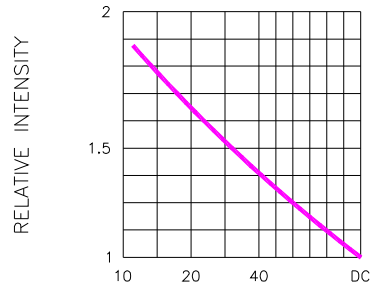


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

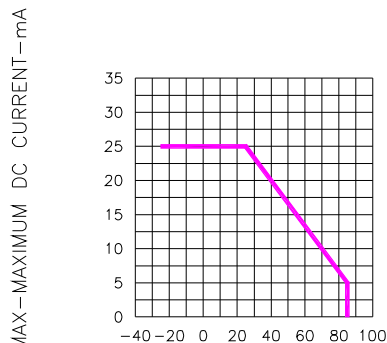


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE

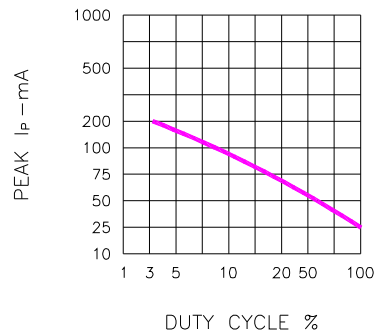


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE f=1 KHz)



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

Model No: CSM-88211E/88221E

■ Package Dimensions

