



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

# PRODUCT SPECIFICATION

**Model No: CSM-88138S/88148S**

## Descriptions:

- 1.85 Inch 8X8 Dot-Matrix Display
- Dot Pitch 6.0mm
- CSM-88138: Column Anode, Row Cathode
- CSM-88148: Column Cathode, Row Anode
- Emitting Color: Super Bright Red



CUSTOMER APPROVED	APPROVED BY	CHECKED BY	PREPARED BY
SIGNATURES			

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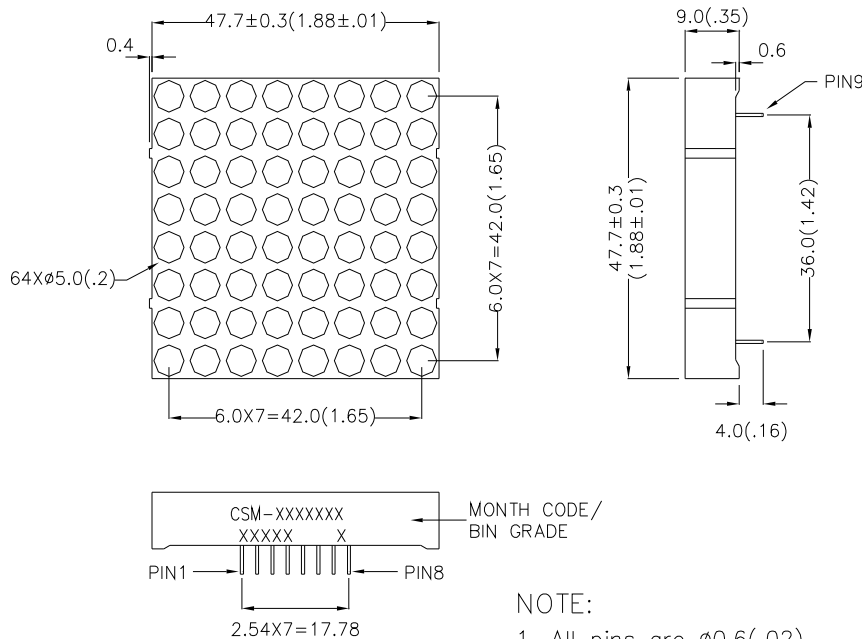
**Features -**

1. 1.85 inch (47.0mm) 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-88138S</b>	<b>AlGaAs</b>	<b>Super Bright Red</b>	<b>Anode</b>	<b>Cathode</b>
<b>CSM-88148S</b>	<b>AlGaAs</b>	<b>Super Bright Red</b>	<b>Cathode</b>	<b>Anode</b>

**Package Dimensions -**



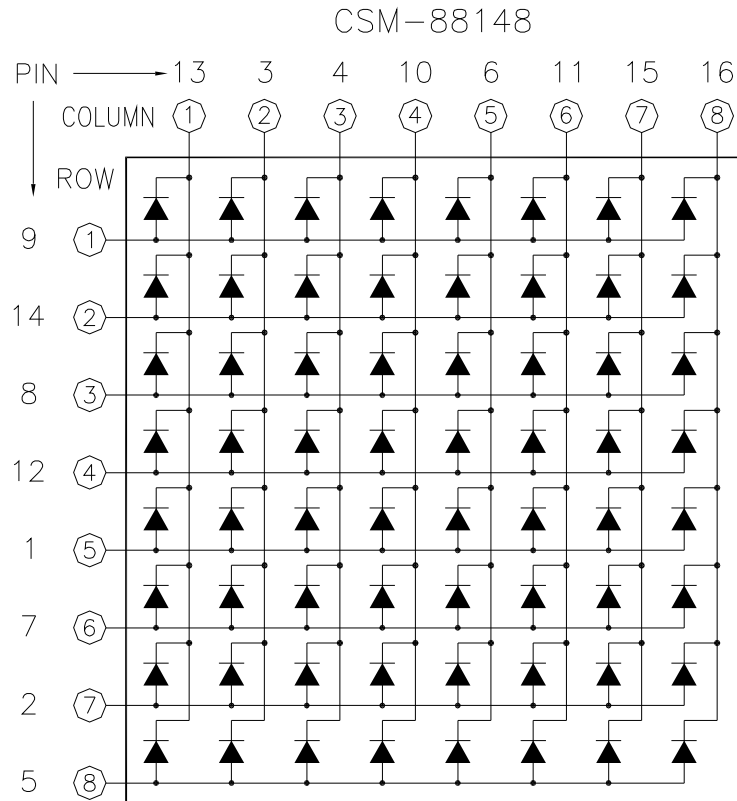
**NOTE:**

1. All pins are  $\phi 0.6$  (.02).
2. Dimensions in millimeters (inch), tolerance is  $\pm 0.25$  (.01) unless otherwise noted.



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Internal Circuit Diagrams -



CSM-88138				CSM-88148			
PIN NO.	FUNCTION	PIN NO.	FUNCTION	PIN NO.	FUNCTION	PIN NO.	FUNCTION
1	Cathode Row 5	9	Cathode Row 1	1	Anode Row 5	9	Anode Row 1
2	Cathode Row 7	10	Anode Column 4	2	Anode Row 7	10	Cathode Column 4
3	Anode Column 2	11	Anode Column 6	3	Cathode Column 2	11	Cathode Column 6
4	Anode Column 3	12	Cathode Row 4	4	Cathode Column 3	12	Anode Row 4
5	Cathode Row 8	13	Anode Column 1	5	Anode Row 8	13	Cathode Column 1
6	Anode Column 5	14	Cathode Row 2	6	Cathode Column 5	14	Anode Row 2
7	Cathode Row 6	15	Anode Column 7	7	Anode Row 6	15	Cathode Column 7
8	Cathode Row 3	16	Anode Column 8	8	Anode Row 3	16	Cathode Column 8



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■ Absolute Maximum Rating -

(Ta=25°C)

Parameter	Symbol	Rating	Unit
Power Dissipation Per Dice	PAD	75	mW
Continuous Forward Current Per Dice	IAF	30	mA
Peak Current Per Dice(duty cycle 1/10,1KHz)	IPF	120	mA
Derating Linear From 25°C Per Dice	-	0.42	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			

■ Electro-optical Characteristics -

(Ta=25°C)

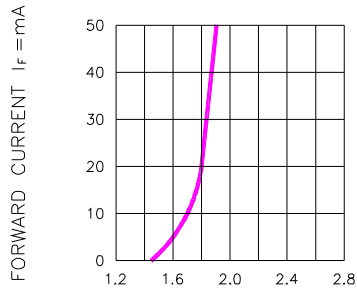
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Forward Voltage Per Dot	VF	-	1.8	2.5	V	IF=20mA
Luminous Intensity Per Dot	Iv	-	9	-	mcd	IF=10mA
Peak Emission Wavelength	$\lambda_p$	-	660	-	nm	IF=20mA
Dominant Wavelength	$\lambda_d$	-	644	-	nm	IF=20mA
Spectrum Radiation Bandwidth	$\Delta \lambda$	-	20	-	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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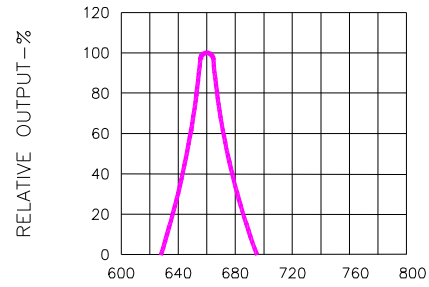
### Typical Electrical / Optical Characteristics Curves -

(Ta = 25°C Unless Otherwise Noted)



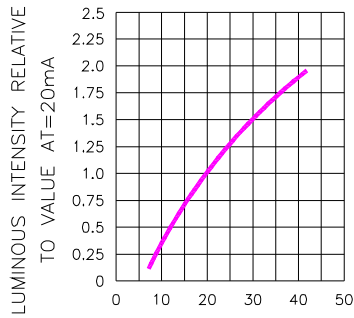
FORWARD VOLTAGE (V<sub>f</sub>)—VOLTS

Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE



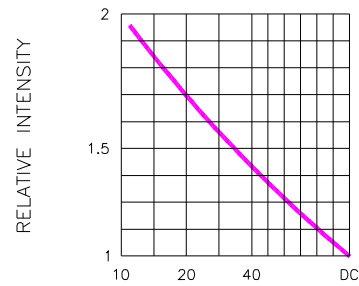
WAVELENGTH (λ)—nm

Fig.2 SPECTRAL RESPONSE



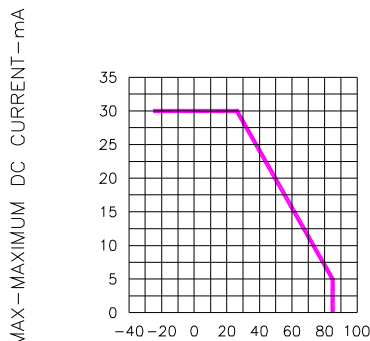
I<sub>f</sub>—FORWARD CURRENT—mA

Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



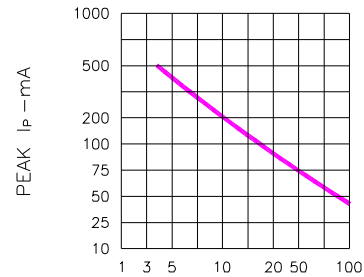
DUTY CYCLE % PER SEGMENT  
(AVERAGE I<sub>f</sub>=10mA)

Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE



T<sub>a</sub> AMBIENT TEMPERATURE °C

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



DUTY CYCLE %

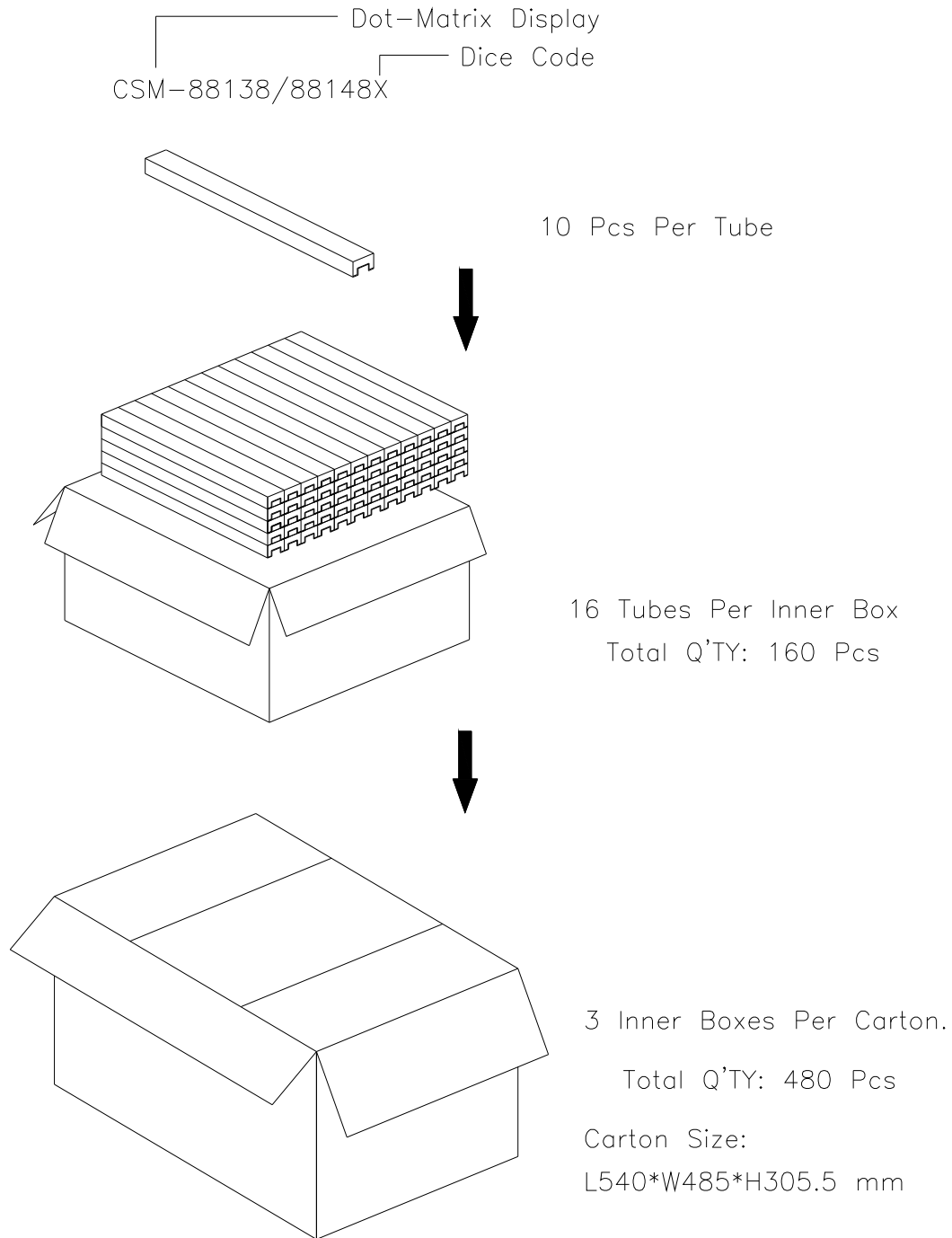
Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE %  
(REFRESH RATE f=1 KHz)



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■ Package Dimensions



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