



# PRODUCT SPECIFICATION

**Model No : CSM-88137S/88147S**

## Descriptions:

- 1.5 Inch 8X8 Dot-Matrix Display
- Dot Pitch 4.76mm
- CSM-88131: Column Anode, Row Cathode
- CSM-88147: Column Cathode, Row Anode
- Emitting Color: Super Bright Red



CUSTOMER APPROVED SIGNATURES	APPROVED BY	CHECKED BY	PREPARED BY

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**Model No : CSM-88137S/88147S**

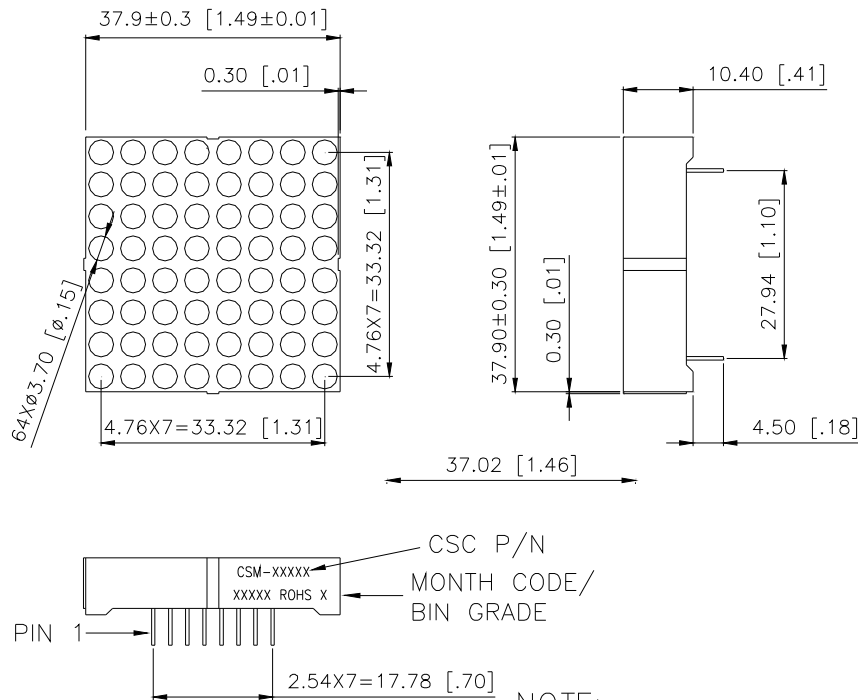
**Features -**

1. 1.5 inch (37.02mm) 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-88137S</b>	<b>AlGaAs</b>	<b>Super Bright Red</b>	<b>Anode</b>	<b>Cathode</b>
<b>CSM-88147S</b>	<b>AlGaAs</b>	<b>Super Bright Red</b>	<b>Cathode</b>	<b>Anode</b>

**Package Dimensions -**



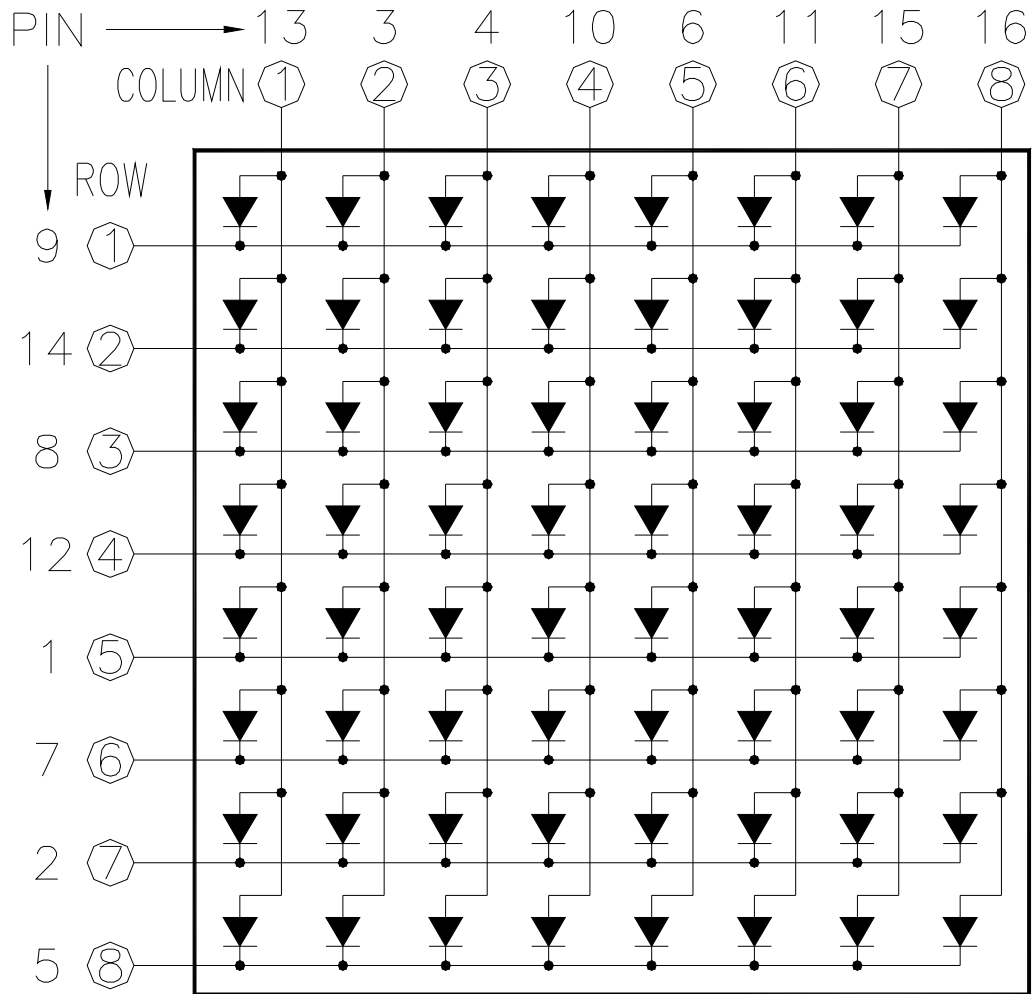
**NOTE:**

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-88137: Column Anode, Row Cathode  
(CSM-88147: Column Cathode, Row Anode)



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■ Absolute Maximum Rating -

(Ta=25°C)

Parameter	Symbol	Rating	Unit
Power Dissipation Per Dice	P <sub>AD</sub>	75	mW
Continuous Forward Current Per Dice	I <sub>AF</sub>	30	mA
Peak Current Per Dice(duty cycle 1/10,1KHz)	I <sub>PF</sub>	120	mA
Derating Linear From 25°C Per Dice	-	0.42	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)

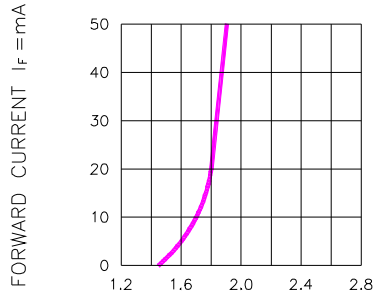
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Forward Voltage Per Dot	V <sub>F</sub>	-	1.8	2.5	V	I <sub>F</sub> =20mA
Luminous Intensity Per Dot	I <sub>v</sub>	-	8	-	mcd	I <sub>F</sub> =10mA
Peak Emission Wavelength	λ <sub>p</sub>	-	660	-	nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>	-	644	-	nm	I <sub>F</sub> =20mA
Spectrum Radiation Bandwidth	Δλ	-	20	-	nm	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>	-	-	100	μA	V <sub>R</sub> =5V
Luminous Intensity Matching Ratio	IV-m	-	-	2:1	-	I <sub>p</sub> =80mA 1/16Duty



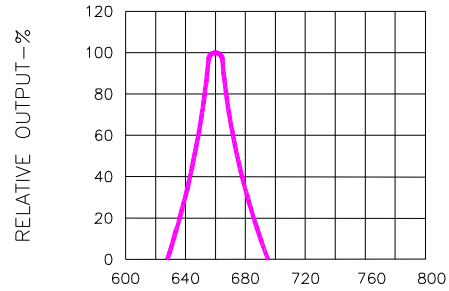
Model No : CSM-88137S/88147S

■ Typical Electrical / Optical Characteristics Curves -

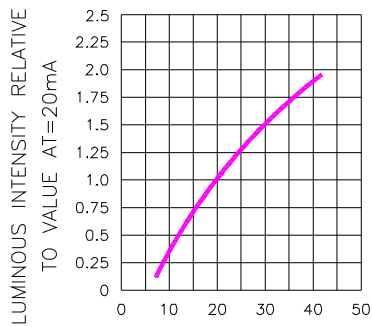
(Ta = 25°C Unless Otherwise Noted)



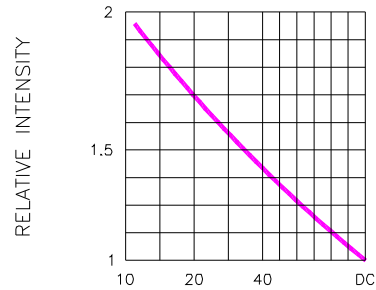
FORWARD VOLTAGE (V<sub>F</sub>)—VOLTS  
Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE



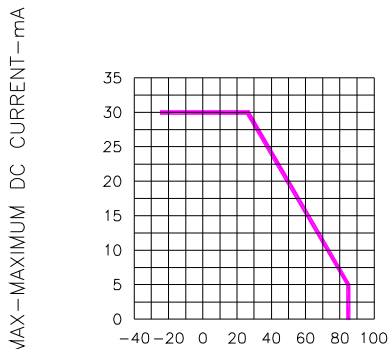
WAVELENGTH (λ)—nm  
Fig.2 SPECTRAL RESPONSE



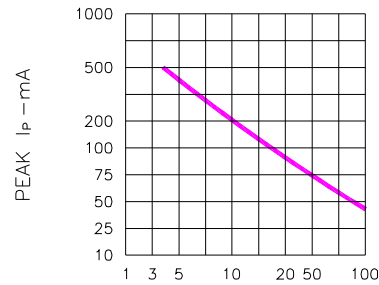
I<sub>F</sub>—FORWARD CURRENT—mA  
Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



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



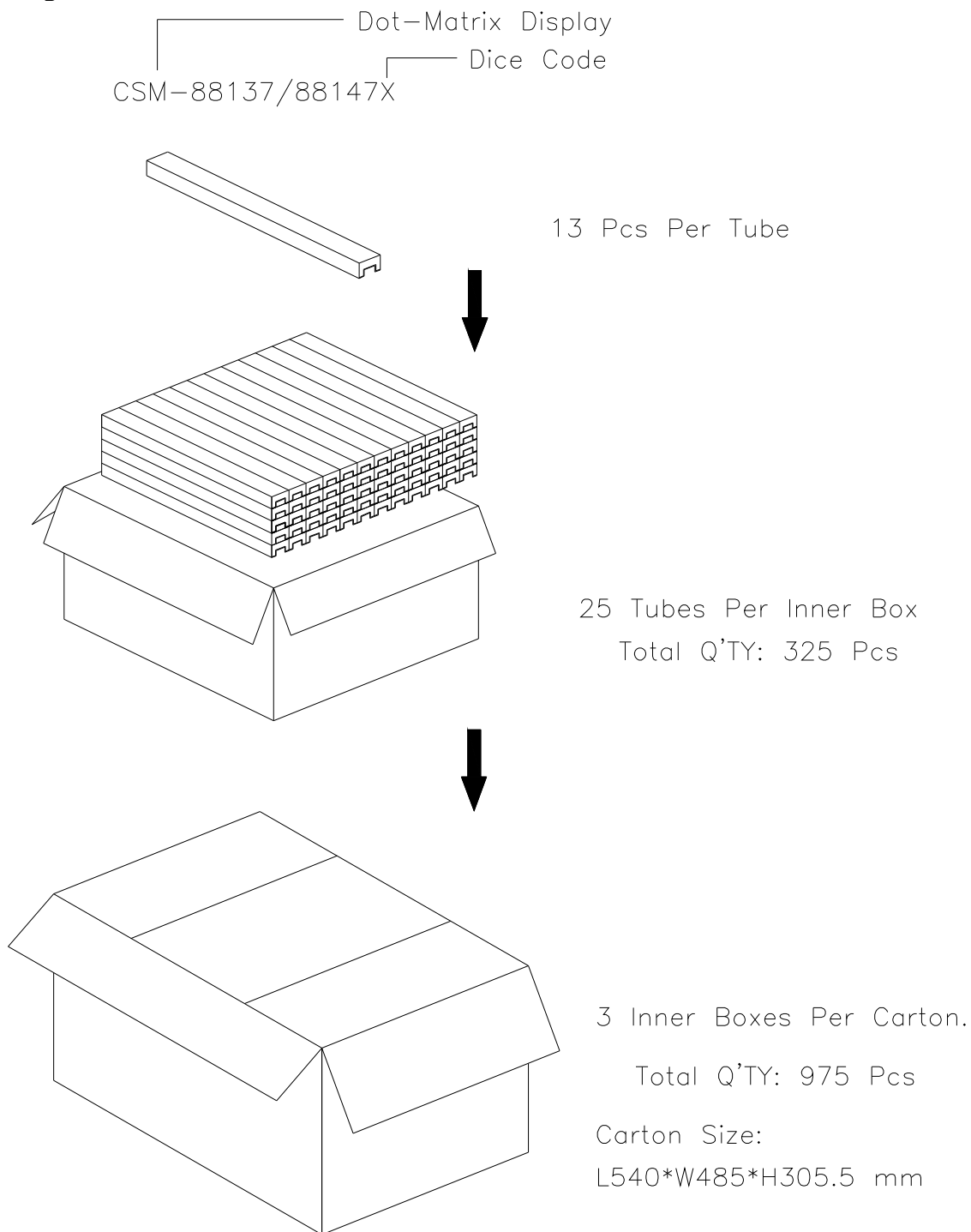
DUTY CYCLE %  
Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE %  
(REFRESH RATE f=1 KHz)



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

Model No: CSM-88137A9/CSM-88147A9

■ Package Dimensions



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