



PRODUCT SPECIFICATION

Model No : CSM-88108VM9

Descriptions:

- 1.85 Inch Dot-Matrix Display
- 8*8 Array with X-Y Select.
- CSM-88108: Column Cathode, Row Anode
- Emitting Color: Super Bright Orange
- Emitting Color: Super Bright Green



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



Model No : CSM-88108VM9

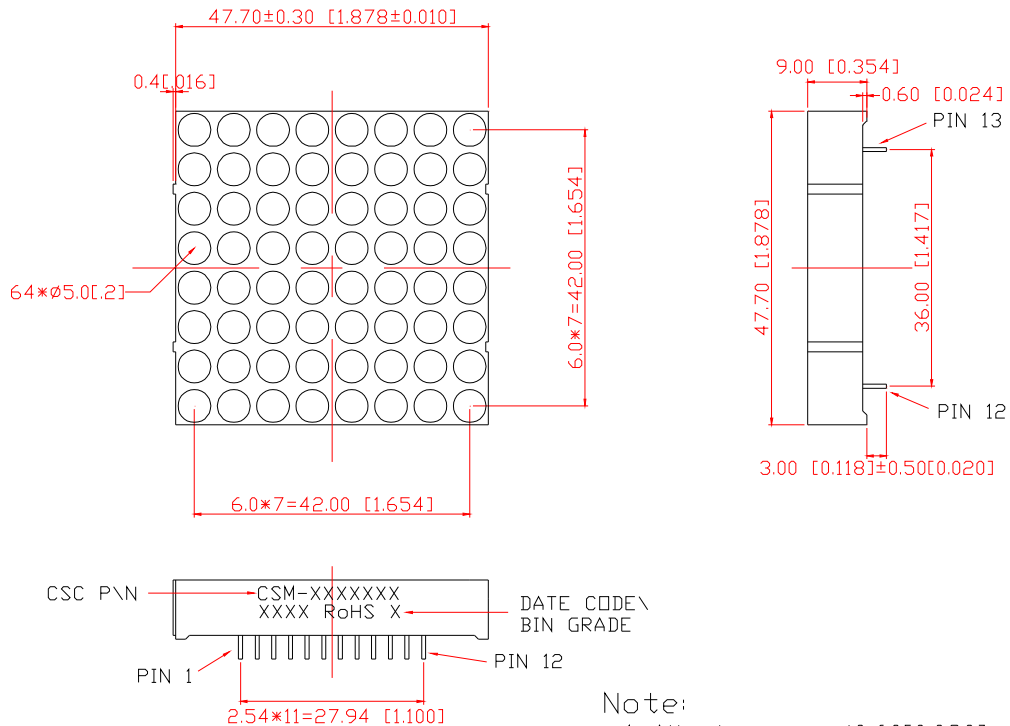
Features -

1. 1.85 inch (47.0mm) 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-88108VM9	AlGaInP	Super Bright Orange	Cathode	Anode
	AlGaInP	Super Bright Green		

Package Dimensions -



Note:

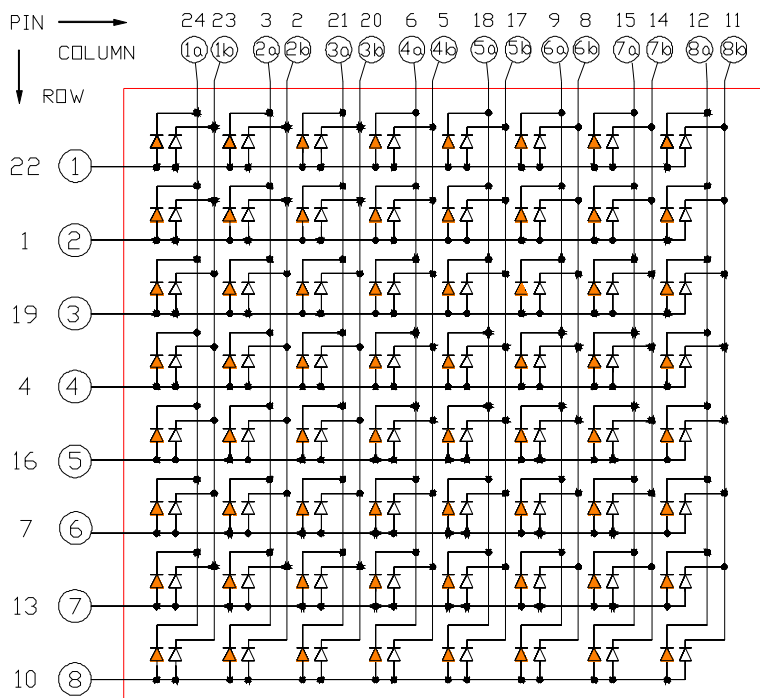
- 1 All pins are $\phi 0.60$ [0.020] mm
- 2 Dimension in millimeters (inch), tolerance is ± 0.25 [0.010] unless otherwise noted.



Model No : CSM-88108VM9

Internal Circuit Diagrams -

CSM-88108



CSM-88108					
PIN NO.	FUNCTION	PIN NO.	FUNCTION	PIN NO.	FUNCTION
1	Anode Row 2	9	Cathode Column 6a	17	Cathode Column 5b
2	Cathode Column 2b	10	Anode Row 8	18	Cathode Column 5a
3	Cathode Column 2a	11	Cathode Column 8b	19	Anode Row 3
4	Cathode Column 4	12	Cathode Column 8a	20	Cathode Column 3b
5	Cathode Column 4b	13	Anode Row 7	21	Cathode Column 3a
6	Cathode Column 4a	14	Cathode Column 7b	22	Anode Row 1
7	Anode Row 6	15	Cathode Column 7a	23	Cathode Column 1b
8	Cathode Column 6b	16	Anode Row 5	24	Cathode Column 1a

NOTE: "a" for Super Bright Orange color chip
"b" for Super Bright Green color chip



Model No : CSM-88108VM9

■ Absolute Maximum Rating -

Super Bright 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			

Super Bright 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
Storage Temp.	Tstg	-35 ~ +85	°C
Solder temperature 1/16 inch below seating plane for 3 seconds at 260°C			



Model No : CSM-88108VM9

■ Electro-optical Characteristics -

Super Bright Orange							(Ta=25°C)
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition	
Forward Voltage Per Dot	V _F	-	2.0	2.8	V	I _F =20mA	
Luminous Intensity Per Dot	I _v	-	40	-	mcd	I _F =10mA	
Peak Emission Wavelength	λ _p	-	632	-	nm	I _F =20mA	
Dominant Wavelength	λ _d	-	624	-	nm	I _F =20mA	
Spectrum Radiation Bandwidth	Δλ	-	20	-	nm	I _F =20mA	
Reverse Current	I _R	-	-	100	μA	V _R =5V	
Luminous Intensity Matching Ratio	I _{V-m}	-	-	2:1	-	I _p =80mA 1/16Duty	

Super Bright Green							(Ta=25°C)
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition	
Forward Voltage Per Dot	V _F	-	2.1	2.8	V	I _F =20mA	
Luminous Intensity Per Dot	I _v	-	18	-	mcd	I _F =10mA	
Peak Emission Wavelength	λ _p	-	572	-	nm	I _F =20mA	
Dominant Wavelength	λ _d	-	570	-	nm	I _F =20mA	
Spectrum Radiation Bandwidth	Δλ	-	20	-	nm	I _F =20mA	
Reverse Current	I _R	-	-	100	μA	V _R =5V	
Luminous Intensity Matching Ratio	I _{V-m}	-	-	2:1	-	I _p =80mA 1/16Duty	



Model No : CSM-88108VM9

■ Typical Electrical / Optical Characteristics Curves -Super Bright Orange
(Ta = 25°C Unless Otherwise Noted)

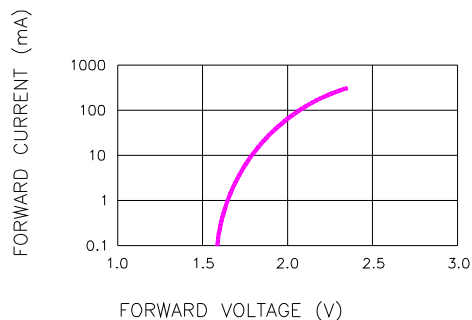


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

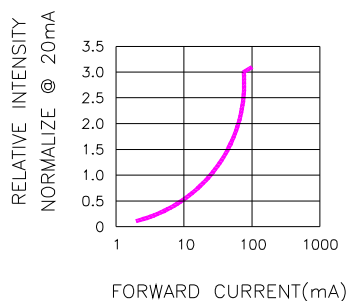


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

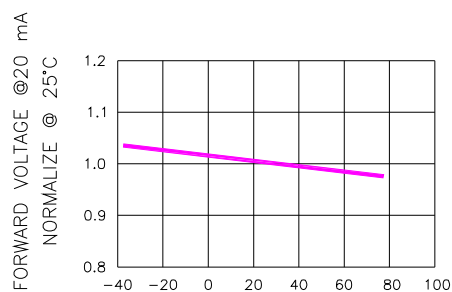


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

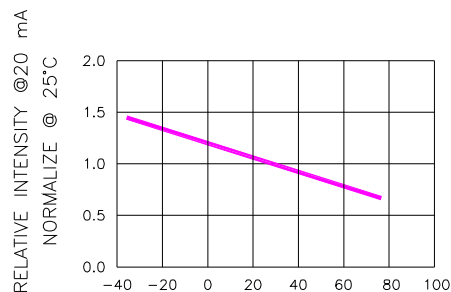


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

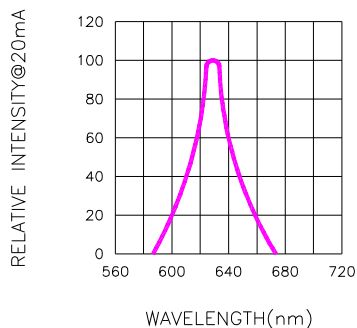


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH



Model No : CSM-88108VM9

■ Typical Electrical / Optical Characteristics Curves -Super Bright Green
($T_a = 25^\circ\text{C}$ Unless Otherwise Noted)

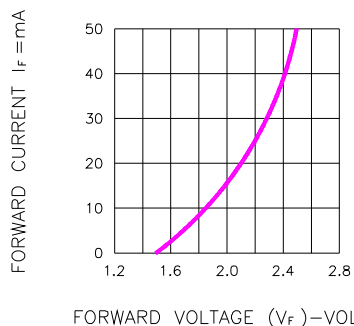


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

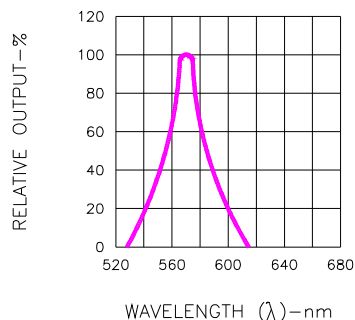


Fig.2 SPECTRAL RESPONSE

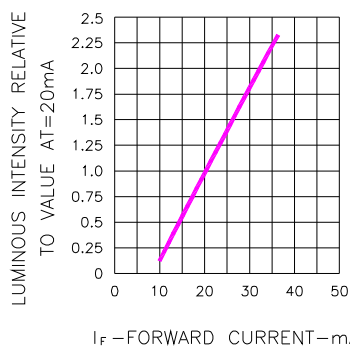


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

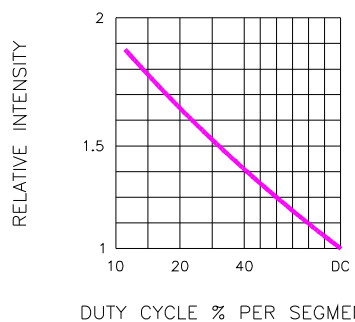


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

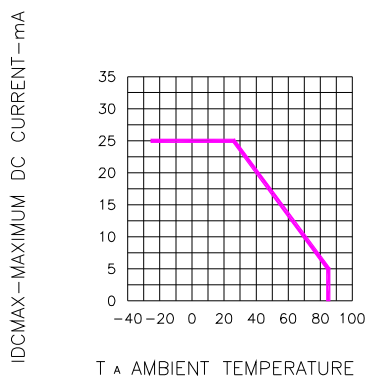


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE

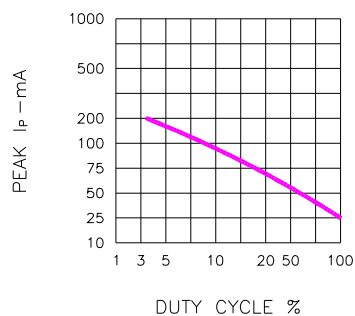
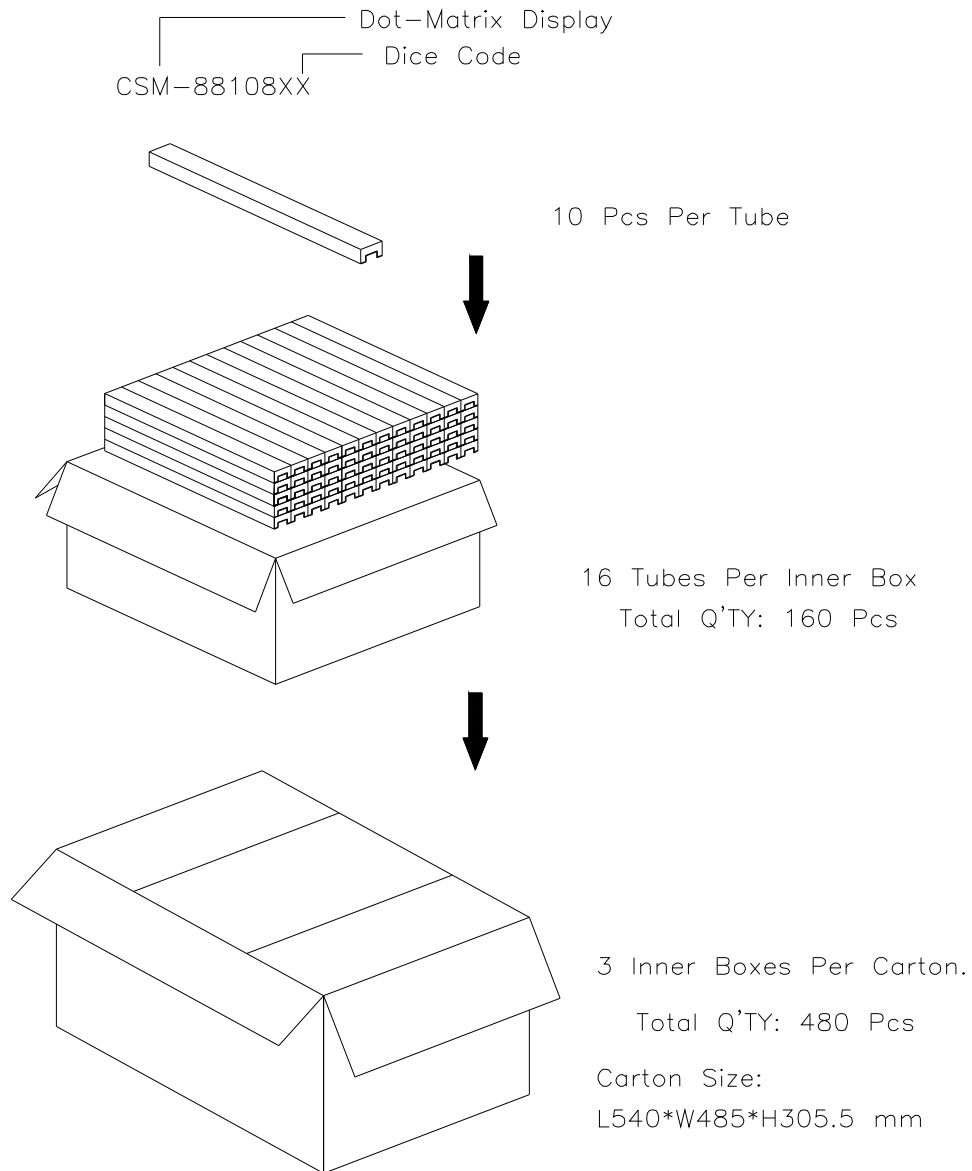


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE $f = 1\text{ kHz}$)



Model No: CSM-88108VM9

■ Package Dimensions



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