CHINA
SEMICONDUCTOR
CORPORATION

Spec. No.	PS-ND-0710
Rev.	A

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
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Chung-Ho City Taipei Hsien,Taiwan.

Tel:886-2-2223-9696
Fax:886-2-2223-9377

OPTO PLUS TECHNOLOGIES CO.,LTD
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ZheJiang,China

Tel:86-0575-88623888
Fax:86-0575-88623112

http://www.csctw.com.tw

Model No : CSM-88108VM9

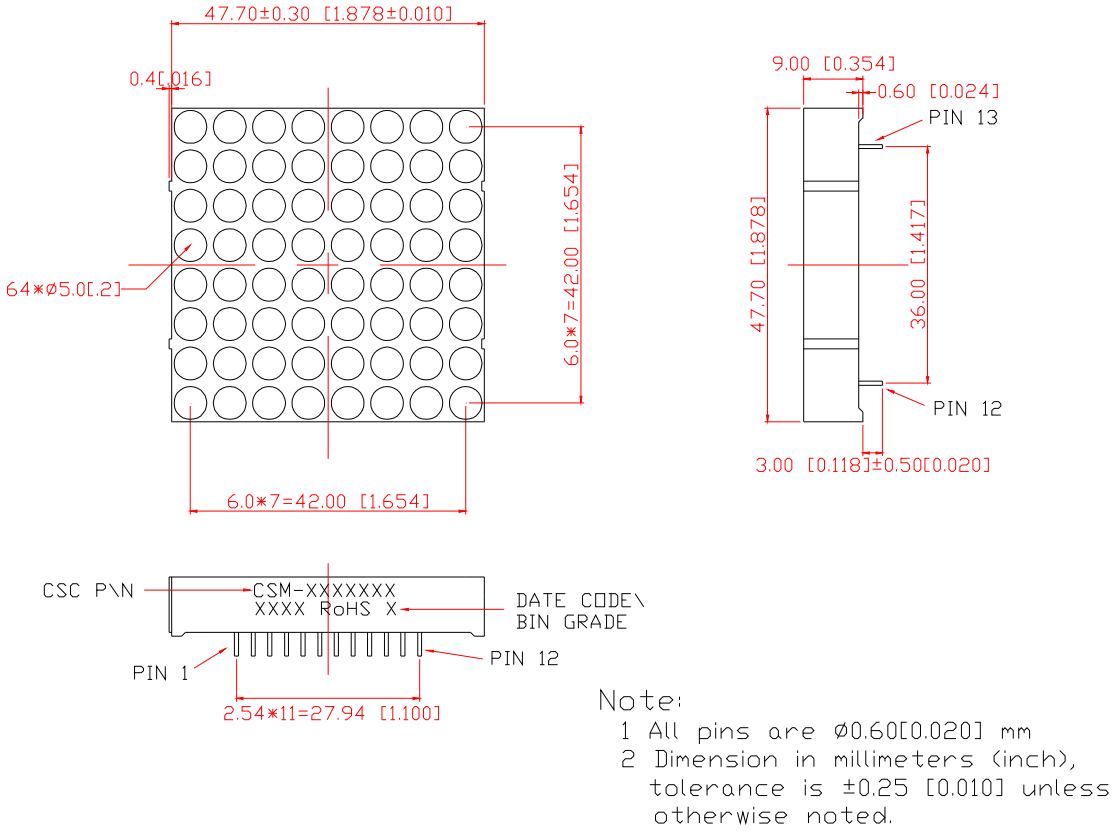
■ Features -

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 -

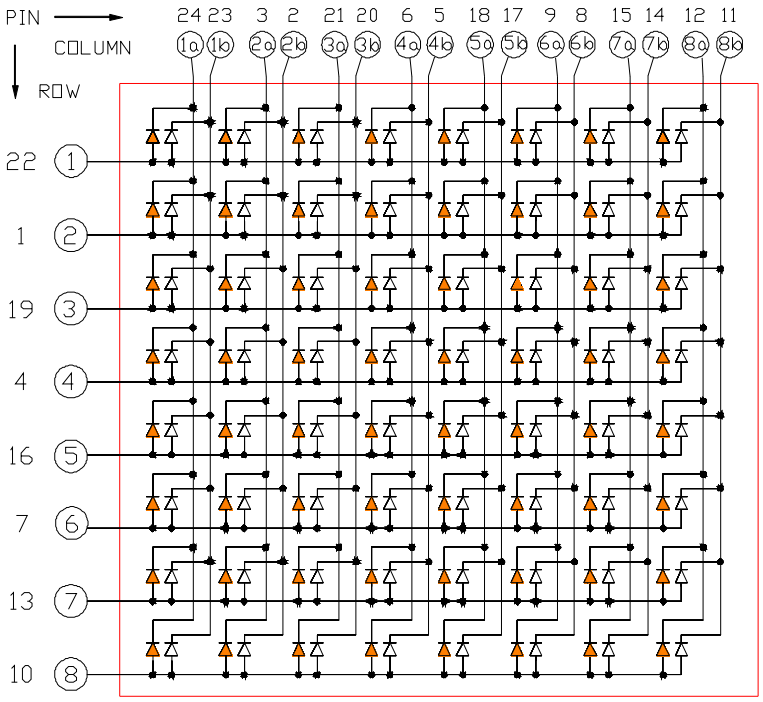


Note:
1 All pins are ø0.60[0.020] mm
2 Dimension in millimeters (inch), tolerance is ±0.25 [0.010] unless otherwise noted.

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■ 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℃)

Parameter	Symbol	Rating	Unit
Power Dissipation Per Dice	P_{AD}	70	mW
Continuous Forward Current Per Dice	I_{AF}	25	mA
Peak Current Per Dice(duty cycle 1/10, 1kHz)	I_{PF}	90	mA
Derating Linear From 25℃ Per Dice	-	0.33	mA/℃
Reverse Voltage Per Dice	V_R	5	V
Operating Temp.	Topr	-35 ~ +85	℃
Storage Temp.	Tstg	-35 ~ +85	℃
Solder temperature 1/16 inch below seating plane for 3 seconds at 260℃			

Super Bright Green (Ta=25℃)

Parameter	Symbol	Rating	Unit
Power Dissipation Per Dice	P_{AD}	70	mW
Continuous Forward Current Per Dice	I_{AF}	25	mA
Peak Current Per Dice(duty cycle 1/10, 1kHz)	I_{PF}	90	mA
Derating Linear From 25℃ Per Dice	-	0.33	mA/℃
Reverse Voltage Per Dice	V_R	5	V
Operating Temp.	Topr	-35 ~ +85	℃
Storage Temp.	Tstg	-35 ~ +85	℃
Solder temperature 1/16 inch below seating plane for 3 seconds at 260℃			

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■ Electro-optical Characteristics -

Super Bright Orange (Ta=25℃)

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	Iv	-	40	-	mcd	I_F=10mA
Peak Emission Wavelength	λp	-	632	-	nm	I_F=20mA
Dominant Wavelength	λd	-	624	-	nm	I_F=20mA
Spectrum Radiation Bandwidth	$\Delta \lambda$	-	20	-	nm	I_F=20mA
Reverse Current	IR	-	-	100	μA	V_R=5V
Luminous Intensity Matching Ratio	IV-m	-	-	2:1	-	Ip=80mA 1/16Duty

Super Bright Green (Ta=25℃)

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	Iv	-	18	-	mcd	I_F=10mA
Peak Emission Wavelength	λp	-	572	-	nm	I_F=20mA
Dominant Wavelength	λd	-	570	-	nm	I_F=20mA
Spectrum Radiation Bandwidth	$\Delta \lambda$	-	20	-	nm	I_F=20mA
Reverse Current	IR	-	-	100	μA	V_R=5V
Luminous Intensity Matching Ratio	IV-m	-	-	2:1	-	Ip=80mA 1/16Duty

Model No：CSM-88108VM9

■ Typical Electrical / Optical Charateristics Curves -Super Bright Orange
(Ta = 25℃ Unless Otherwise Noted)

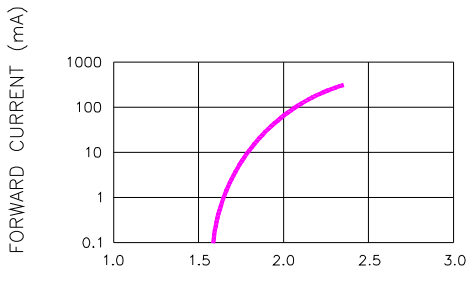


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

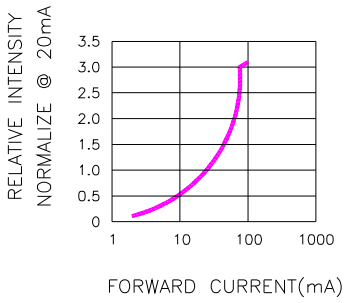


Fig.2 RELATIVE INTENSITY
VS. FORWARD CURRENT

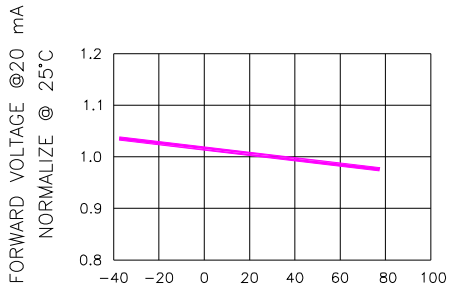


Fig.3 FORWARD VOLTAGE
VS. TEMPERATURE

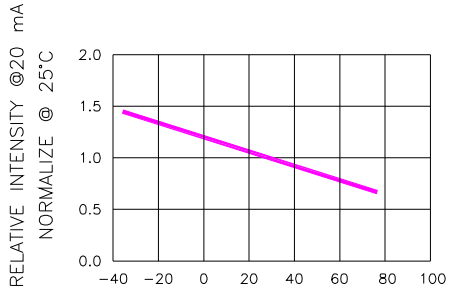


Fig.4 RELATIVE INTENSITY
VS. TEMPERATURE

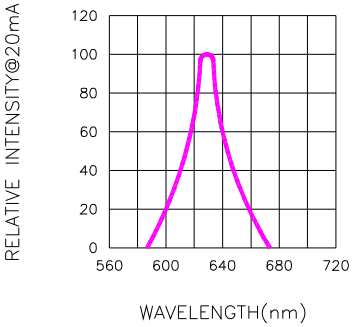


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

Model No：CSM-88108VM9

■ Typical Electrical / Optical Charateristics Curves -Super Bright Green
(Ta = 25℃ Unless Otherwise Noted)

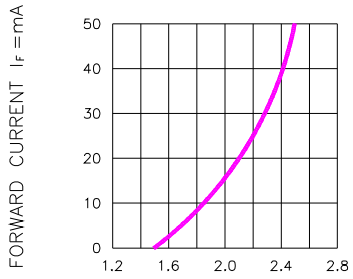


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

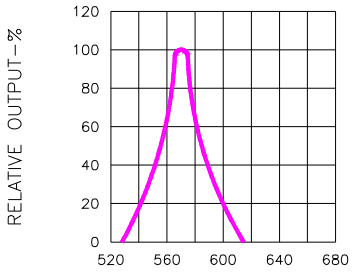


Fig.2 SPECTRAL RESPONSE

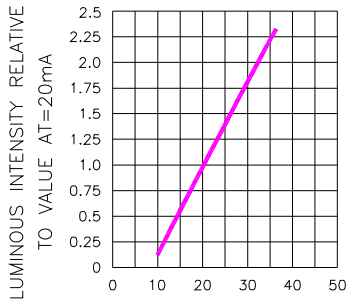


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

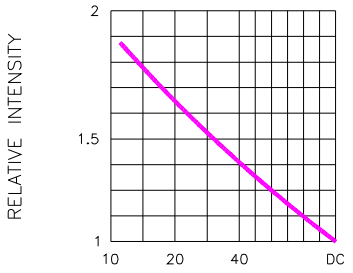


Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE

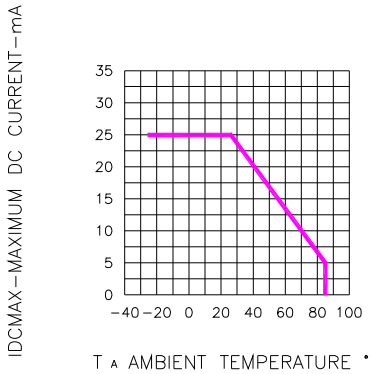


Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE

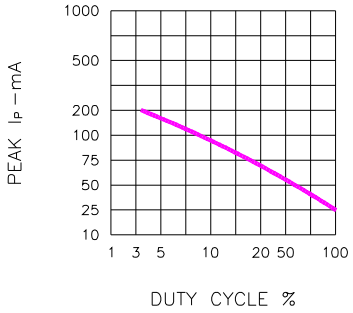
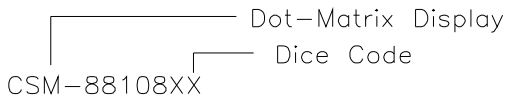
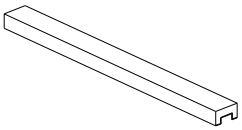


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE %
(REFRESH RATE f=1 KHz)

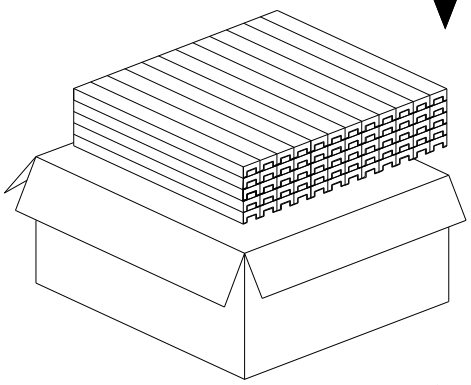
Model No：CSM-88108VM9

■ Package Dimensions

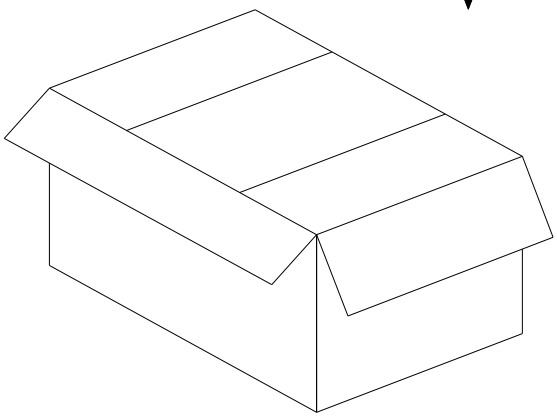




10 Pcs Per Tube



16 Tubes Per Inner Box
Total Q'TY: 160 Pcs



3 Inner Boxes Per Carton.

Total Q'TY: 480 Pcs

Carton Size:
L540*W485*H305.5 mm