

# PRODUCT SPECIFICATION

## Part Number PDM88150 Series

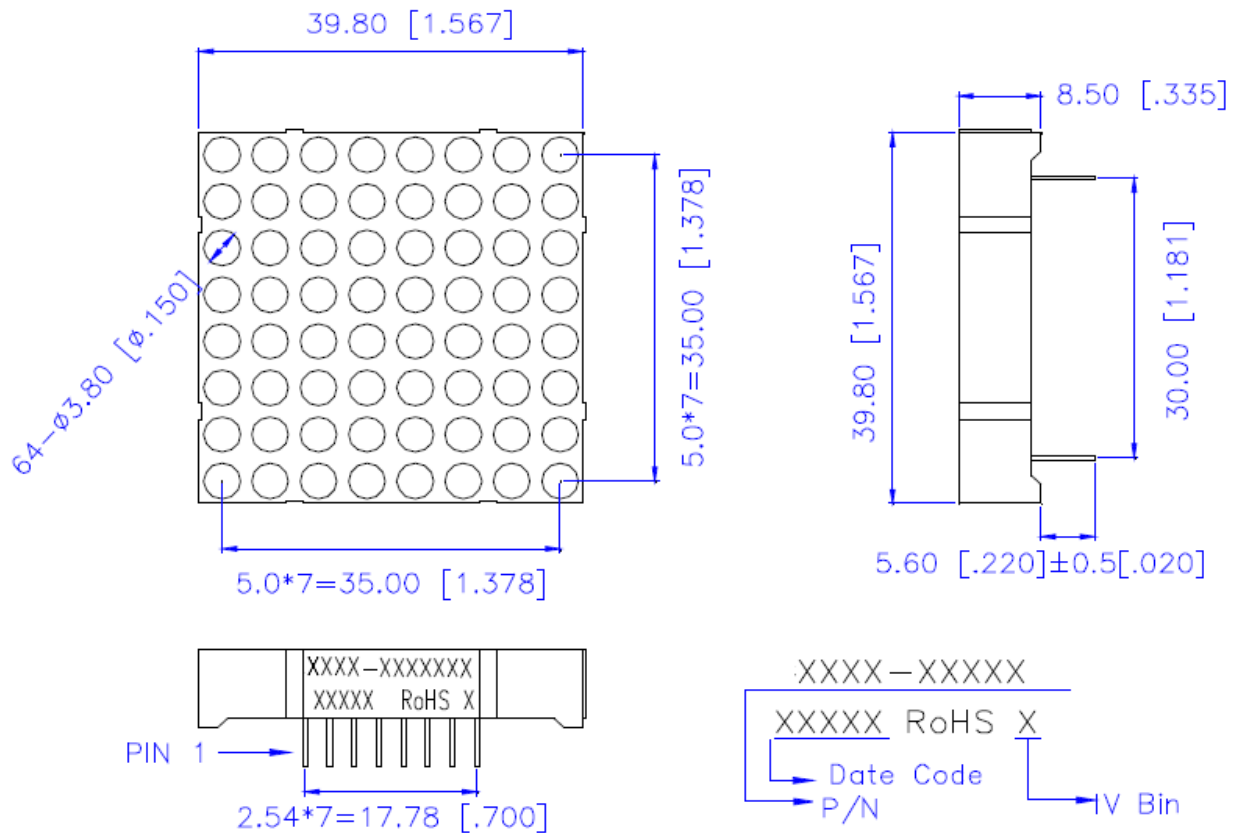
### Details

- 1.5" (38.8mm) Dot Matrix Display
- 8x8 Array
- Available in Common Anode or Cathode
- Emitting Color: Pure Green, Yellow Green, Yellow, Amber, Orange-Red, Red or Deep Red

### Features

- Low power consumption
- RoHS Compliant
- Gray or Black Face, White Segment
- Easy mounting on PCB or socket

### Mechanical Dimensions



#### Notes:

1. Dimensions in millimeters [inch], and tolerance is  $\pm 0.25$  [.010] and angle is  $\pm 1^\circ$  unless otherwise noted.
2. Bending  $\leq$  Length\*1%
3. All pins are  $\phi 0.50$  [.020]  $\pm 0.1$  [.004]
4. Specifications subject to change without notice





**Device Selection Guide**

Model Number	Chip		Description
	Material	Emitting Color	
PDM88150x-G05	InGaN	True Green	Common Cathode x=C / Common Anode x=A
PDM88150x-G17	AlInGaP	Yellow Green	
PDM88150x-Y04		Yellow	
PDM88150x-A11		Amber	
PDM88150x-R02		Orange-Red	
PDM88150x-R11		Red	
PDM88150x-R21		Deep Red	

**Absolute Maximum Ratings at Ta=25°C**

Parameter	Symbol	Rating		Unit
		G17/Y04/A11/R02/R11/R21	G05	
Power Dissipation per Dice	P <sub>AD</sub>	70	114	mW
Derating Liner from 25°C per Dice	--	0.33	0.4	mA/°C
Continuous Forward Current Per Dice	I <sub>AF</sub>	25	30	mA
Peak Current Per Dice (duty cycle 1/10, 1KHz)	I <sub>PF</sub>	90	100	mA
Reverse Voltage Per Dice	V <sub>R</sub>	5	5	V
Electrostatic Discharge (HBM)	ESD	/	1000	V
Operating Temperature	T <sub>opr</sub>	-35~+85		°C
Storage Temperature	T <sub>stg</sub>	-35~+85		°C

Solder Conditions: 1/16 inch below seating plane for 3 -5 seconds at 260°C.



**Electrical and Optical Characteristics at Ta=25°C**

Parameter	Symbol	Chip	Min.	Typ.	Max.	Unit	Condition
Forward Voltage Per Segment	VF	G05	--	3.2	3.8	V	IF=20mA
		G17/Y04/A11/R02/R11/R21	--	2	2.8		
Luminous Intensity Per Segment	Iv	G05	--	405	--	mcd	IF=10mA
		G17	--	25	--		
		Y04	--	81	--		
		A11	--	108	--		
		R02	--	62	--		
		R11	--	28	--		
		R21	--	29	--		
Peak Emission Wavelength / Dominant Wavelength	$\lambda P/\lambda d$	G05	--	*/525	--	nm	IF=20mA
		G17	--	572/570	--		
		Y04	--	592/590	--		
		A11	--	612/605	--		
		R02	--	632/625	--		
		R11	--	644/630	--		
		R21	--	660/645	--		
Reverse Current	IR		--	--	100	$\mu$ A	VR=5V
Luminous Intensity Matching Ratio	Iv-m		--	--	2:1	--	IF=10mA

**Typical Electrical/Optical Characteristic Curves**

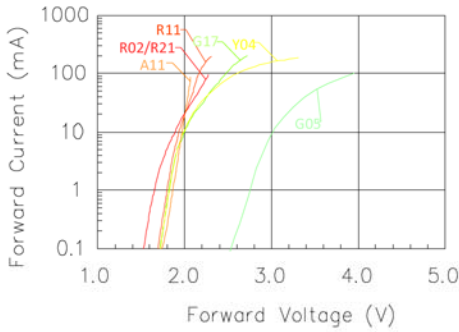


Fig 1. Forward Current vs. Forward Voltage

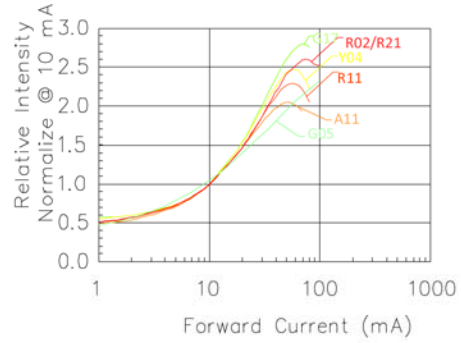


Fig 2. Relative Intensity vs. Forward Current

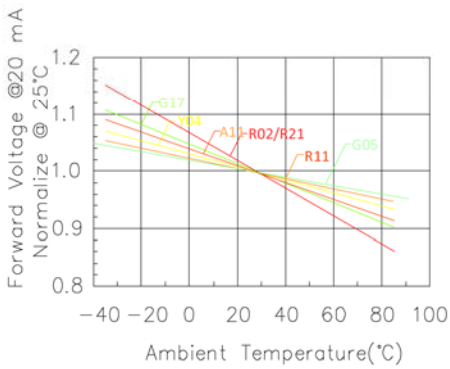


Fig 3. Forward Voltage vs. Temperature

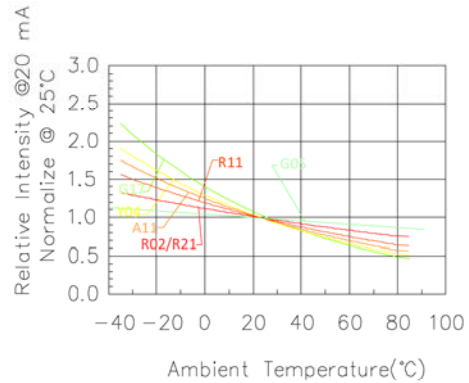


Fig 4. Relative Intensity vs. Temperature

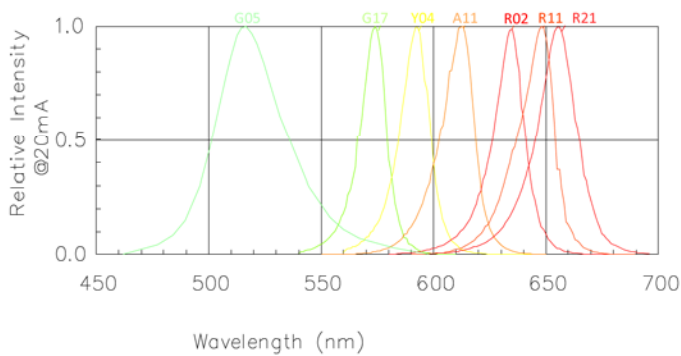


Fig 5. Relative Intensity vs. Wavelength

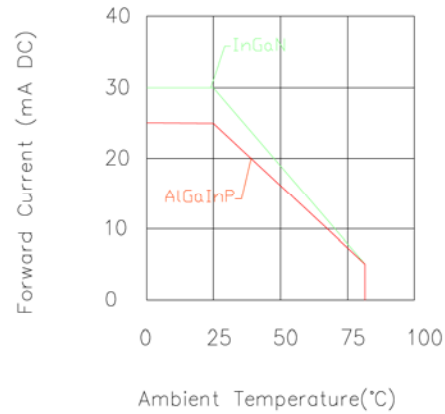


Fig 3. Forward Current vs. Ambient Temperature



**Luminous General lv Bin Grade (IF = 10mA)**

**Color Rank Limits (IF=20mA)**

Remark: Unit=mcd

\*Tolerance: ±20%

Remark: Unit=nm

\*Tolerance: ±1

**●Pure Green(G05)**

Y	1	2	3	4
202.450	263.185	342.142	444.786	578.222
263.184	342.141	444.785	578.221	751.689

1	2	3	4	5
515.0	518.0	520.0	522.0	524.0
518.0	520.0	522.0	524.0	527.0

**●Yellow Green(G17)**

N	P	Q	R	S
14.682	19.088	24.815	32.261	41.940
19.087	24.814	32.260	41.939	54.522

0	1	2	3	4
567.5	569.5	570.5	571.5	573.0
569.4	570.4	571.4	572.9	575.0

**●Yellow (Y04)**

S	T	U	V	W
41.940	54.523	70.881	92.146	119.791
54.522	70.880	92.145	119.790	155.729

1	2	3	4	5
583.0	585.0	587.0	589.0	591.0
585.0	587.0	589.0	591.0	593.0

**●Amber (A11)**

T	U	V	W	X
54.523	70.881	92.146	119.791	155.730
70.880	92.145	119.790	155.729	202.449

**●Orange (R02)**

R	S	T	U	V
32.261	41.940	54.523	70.881	92.146
41.939	54.522	70.880	92.145	119.790

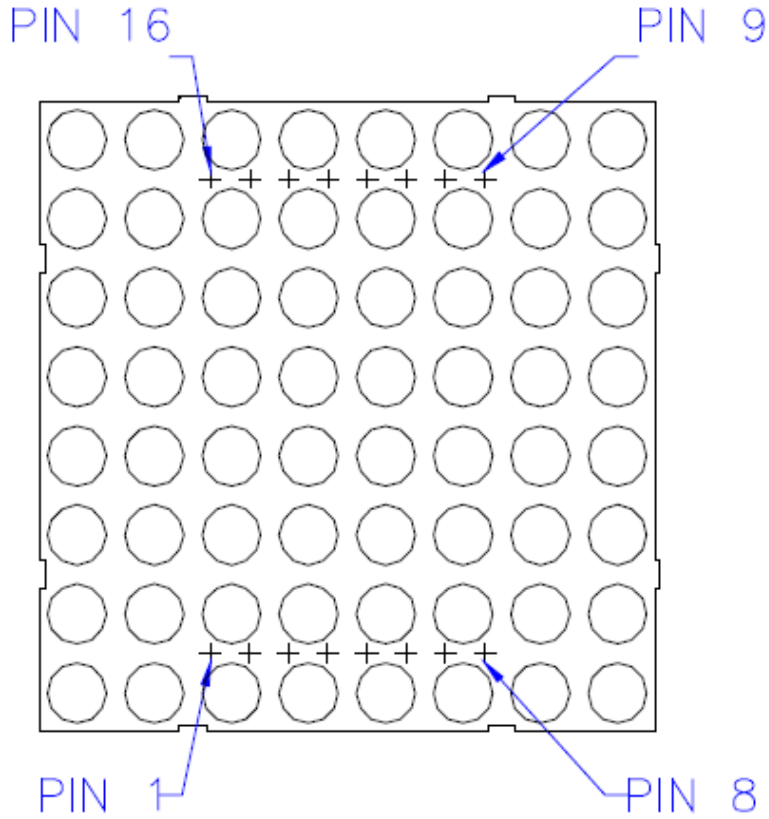
**●Red (R11)**

N	P	Q	R	S
14.682	19.088	24.815	32.261	41.940
19.087	24.814	32.260	41.939	54.522

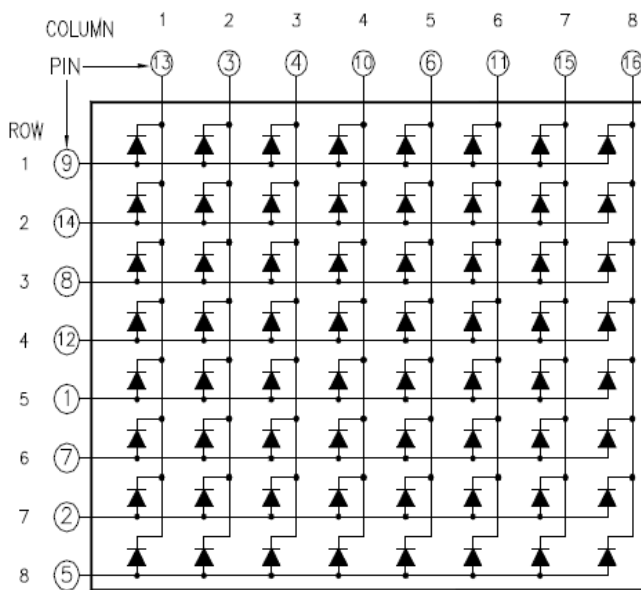
**●Deep Red(R21)**

N	P	Q	R	S
14.682	19.088	24.815	32.261	41.940
19.087	24.814	32.260	41.939	54.522

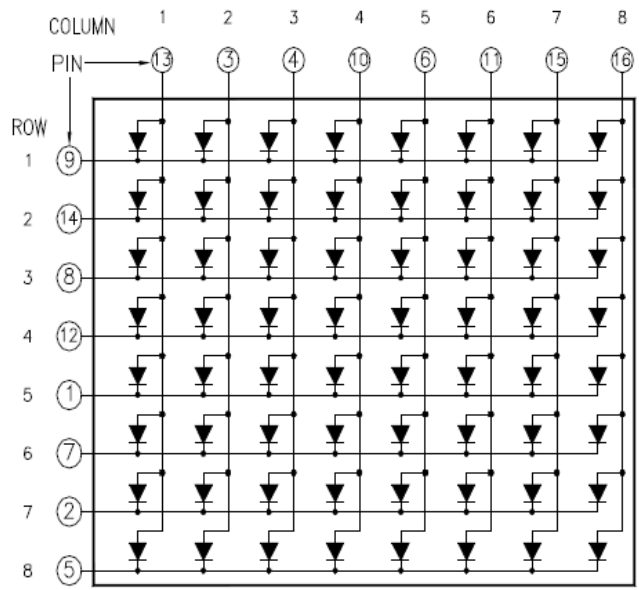
**All Light-On Segments Feature & Pad Position**



**Internal Circuit Diagram**



Common Column Cathode



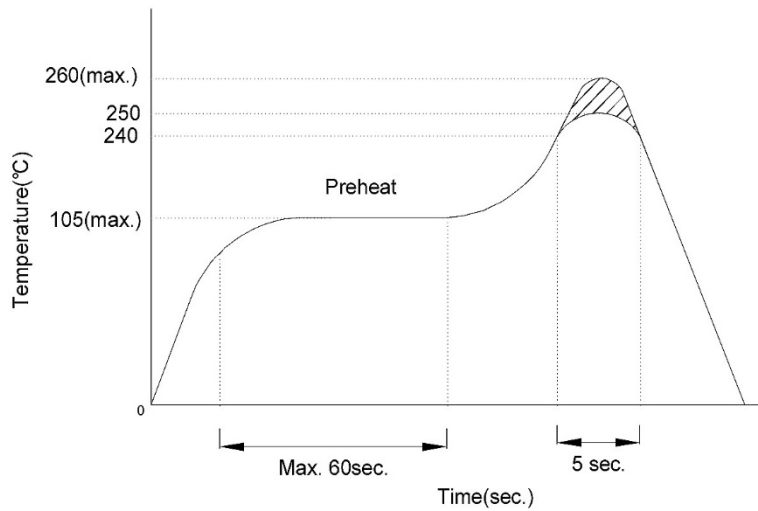
Common Column Anode

### *Precautions for Use*

#### 1. Recommended soldering conditions

##### 1.1. Wave soldering

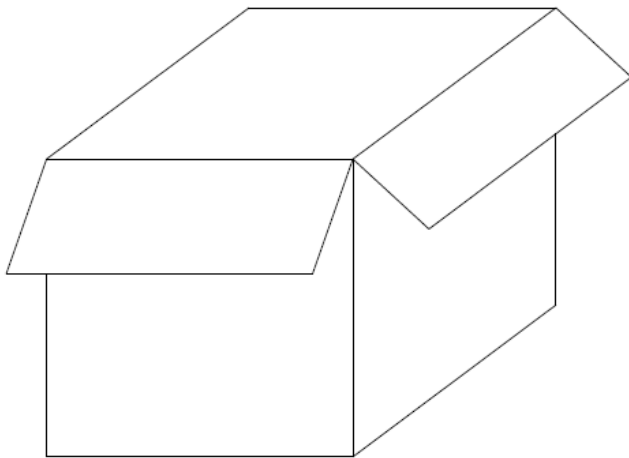
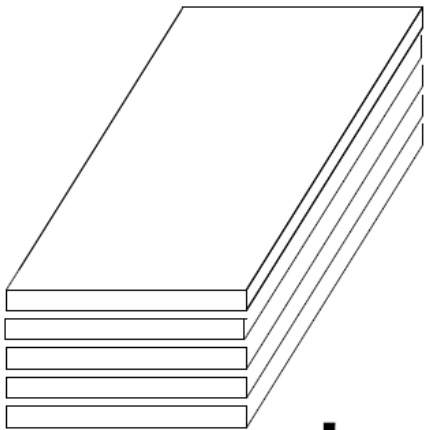
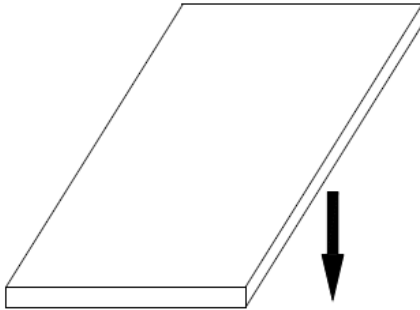
Basic SPEC is  $\leq 5$ sec. When  $260^{\circ}\text{C}$ . If temperature is higher, time should be shorter ( $+10^{\circ}\text{C} \rightarrow -1$ sec.).



##### 1.2. Soldering Iron:

Power dissipation of iron should be smaller than 15W and temp should be controllable. Soldering temperature should be under  $260^{\circ}\text{C}$ , time  $\leq 3$ sec.

*Packing Dimensions*



24 Pcs Per PE.foam  
PE.foam Size:  
L295xW195xH15mm

9 PE.foam Per Box  
Q'TY: 216 PCS  
Box Size:  
L300\*W205\*H240mm