

PRODUCT SPECIFICATION

Part Number
PDM57200x-W01

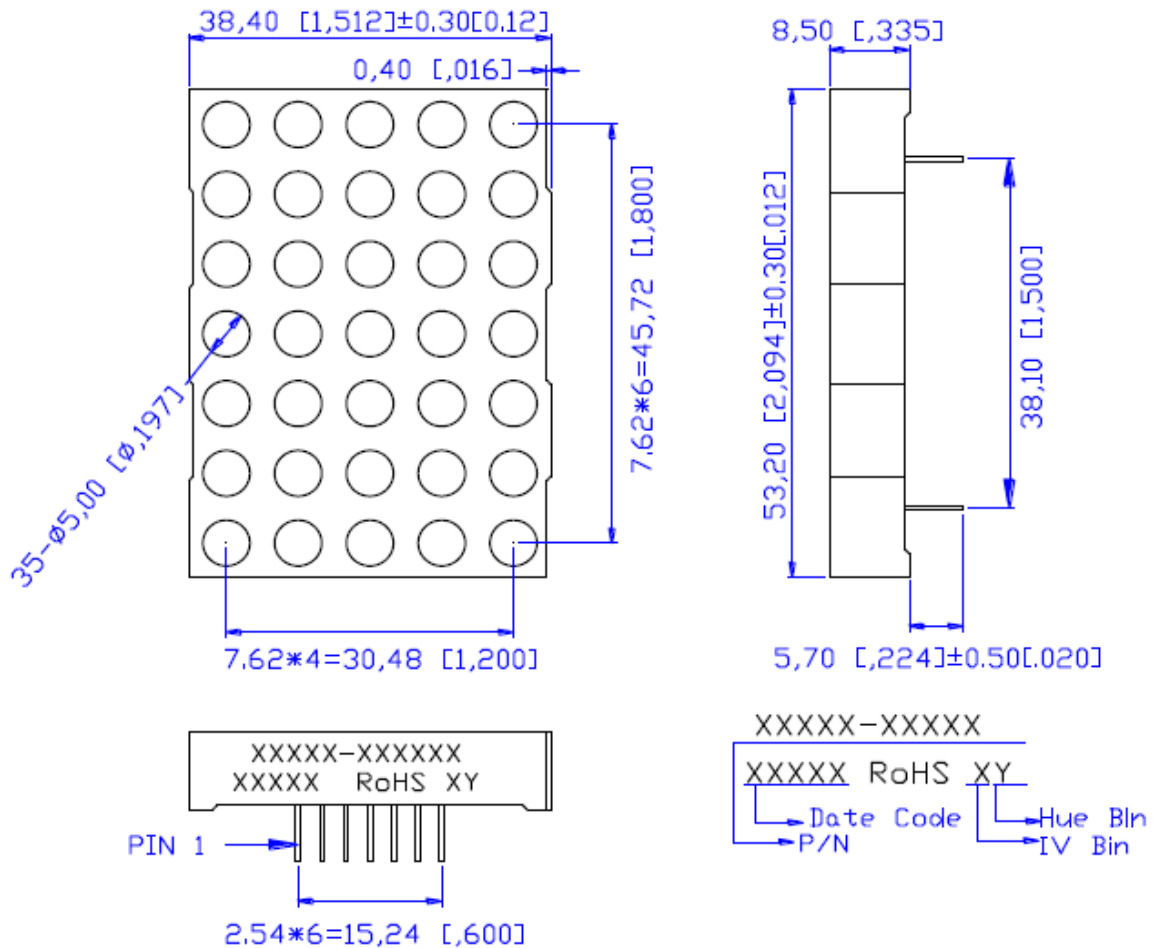
Details

- 2.0" (50.72mm) Dot Matrix Display
- 5x7 Array
- Available in Common Anode or Cathode
- Emitting Color: White

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 ±0.25 [0.010] and angle is ±1° unless otherwise noted.
2. Bending ≤ Length*1%
3. All pins are $\phi 0.50 [0.020] \pm 0.1 [0.004]$
4. Specifications subject to change without notice.





Device Selection Guide

| Model Number | Chip | | Description |
|---------------|----------|----------------|----------------|
| | Material | Emitting Color | |
| PDM57200C-W01 | InGaN | White | Common Cathode |
| PDM57200A-W01 | | | Common Anode |

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Rating | Unit |
|---|-----------------|--------|-------|
| Power Dissipation per Dice | P _{AD} | 114 | mW |
| Derating Liner from 25°C per Dice | -- | 0.4 | mA/°C |
| Continuous Forward Current Per Dice | IAF | 30 | mA |
| Peak Current Per Dice (duty cycle 1/10, 1KHz) | IPF | 100 | mA |
| Reverse Voltage Per Dice | VR | 5 | V |
| Electrostatic Discharge (HBM) | ESD | 1500 | V |
| Operating Temperature | Topr | | °C |
| Storage Temperature | Tstg | | °C |

Typical Electrical and Optical Characteristics at Ta=25°C

| Parameter | Symbol | Chip | Min. | Typ. | Max. | Unit | Condition |
|---|--------|------|------|-----------|------|------|-----------|
| Forward Voltage Per Segment | VF | W01 | -- | 3.2 | 3.8 | V | IF=20mA |
| Luminous Intensity Per Segment | Iv | W01 | -- | 230 | -- | mcd | IF=10mA |
| Chromaticity Coordinates (Tolerance: ±0.01) | X/Y | W01 | -- | 0.27/.025 | -- | nm | IF=10mA |
| Reverse Current | IR | | -- | -- | 50 | μA | VR=5V |
| Luminous Intensity Matching Ratio | Iv-m | | -- | -- | 2:1 | -- | IF=10mA |

Typical Electrical/Optical Characteristic Curves

($T_a = 25^\circ\text{C}$ Unless Otherwise Noted)

Fig 1. Forward Current Vs. Ambient Temperature

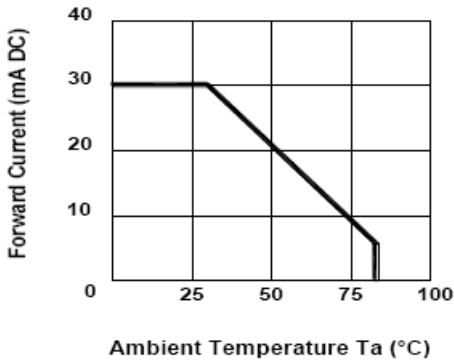


Fig 2. Forward Current Vs. Forward Voltage

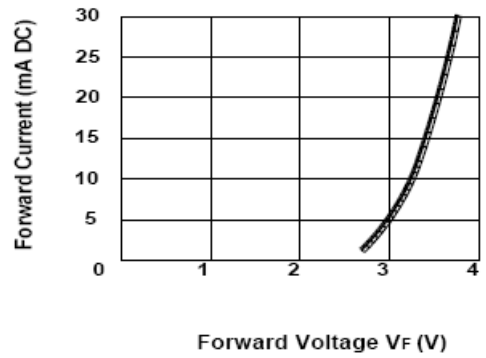


Fig 3. Relative Intensity Vs. Forward Current

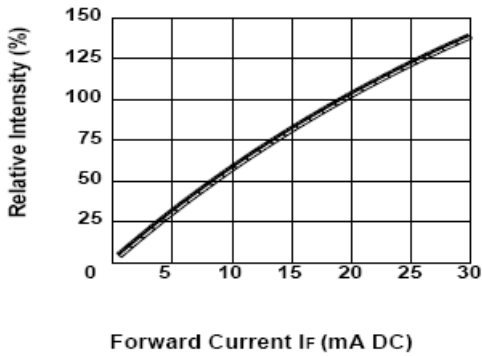


Fig 4. Peak Forward Voltage Vs. Forward Current (100us test pulse, 1% duty cycle)

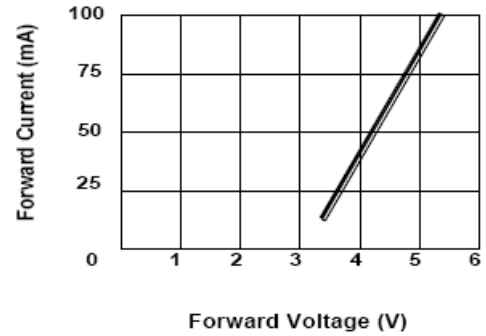
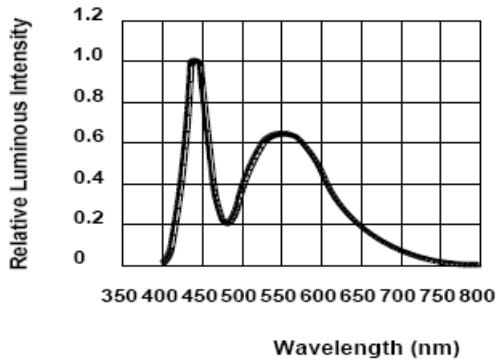


Fig 5. Relative Intensity Vs. Wavelength





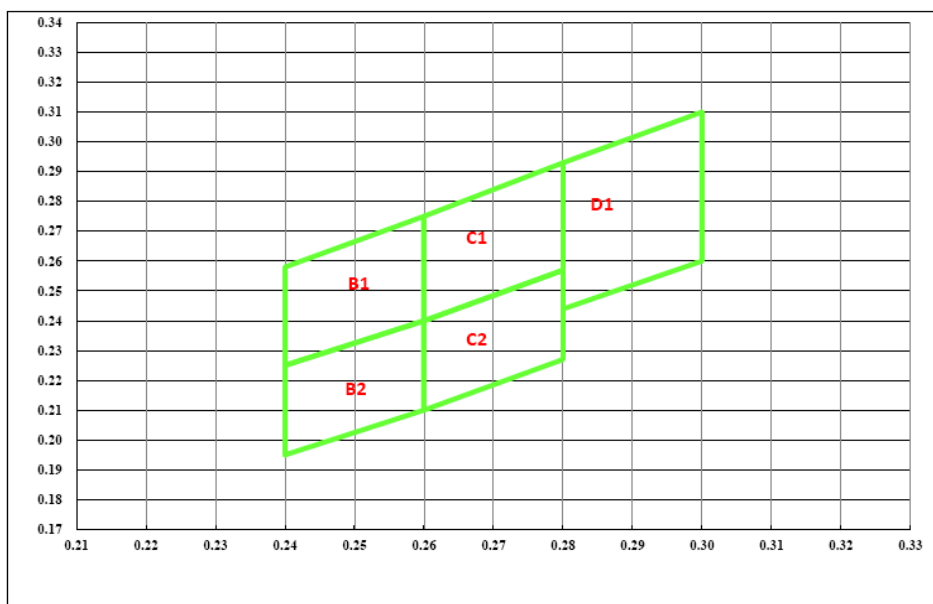
Luminous General Iy Bin Grade (IF = 10mA)

| | | | | | | | | | | | |
|---------|---------|---------|---------|----------|----------|----------|----------|---------|---------|---------|---------|
| A | B | C | D | E | F | G | H | J | K | L | M |
| 0.627 | 0.816 | 1.062 | 1.382 | 1.797 | 2.337 | 3.039 | 3.952 | 5.138 | 6.681 | 8.686 | 11.293 |
| I | I | I | I | I | I | I | I | I | I | I | I |
| 0.815 | 1.061 | 1.381 | 1.796 | 2.336 | 3.038 | 3.951 | 5.137 | 6.680 | 8.685 | 11.292 | 14.681 |
| N | P | Q | R | S | T | U | V | W | X | Y | 1 |
| 14.682 | 19.088 | 24.815 | 32.261 | 41.940 | 54.523 | 70.881 | 92.146 | 119.791 | 155.730 | 202.450 | 263.185 |
| I | I | I | I | I | I | I | I | I | I | I | I |
| 19.087 | 24.814 | 32.260 | 41.939 | 54.522 | 70.880 | 92.145 | 119.790 | 155.729 | 202.449 | 263.184 | 342.141 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | | |
| 342.142 | 444.786 | 578.222 | 751.690 | 977.198 | 1270.359 | 1651.467 | 2146.908 | | | | |
| I | I | I | I | I | I | I | I | | | | |
| 444.785 | 578.221 | 751.689 | 977.197 | 1270.358 | 1651.466 | 2146.907 | 2790.981 | | | | |

Remark: Unit=mcd

*Tolerance: ±20%

Color Rank Limits (IF=10mA)



| B1 | | | | |
|----|-------|-------|-------|-------|
| X | 0.240 | 0.240 | 0.260 | 0.260 |
| Y | 0.225 | 0.258 | 0.275 | 0.240 |

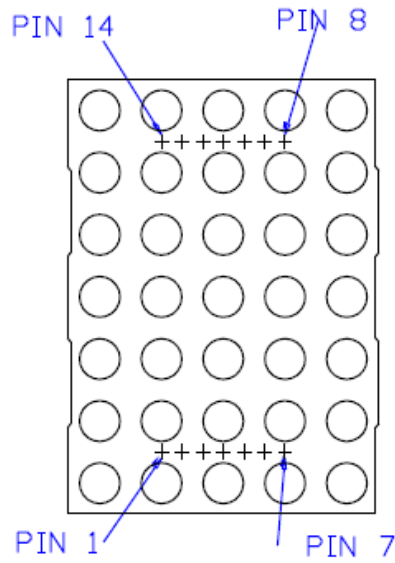
| B2 | | | | |
|----|-------|-------|-------|-------|
| X | 0.240 | 0.240 | 0.260 | 0.260 |
| Y | 0.195 | 0.225 | 0.240 | 0.210 |

| C1 | | | | |
|----|-------|-------|-------|-------|
| X | 0.260 | 0.260 | 0.280 | 0.280 |
| Y | 0.240 | 0.275 | 0.293 | 0.257 |

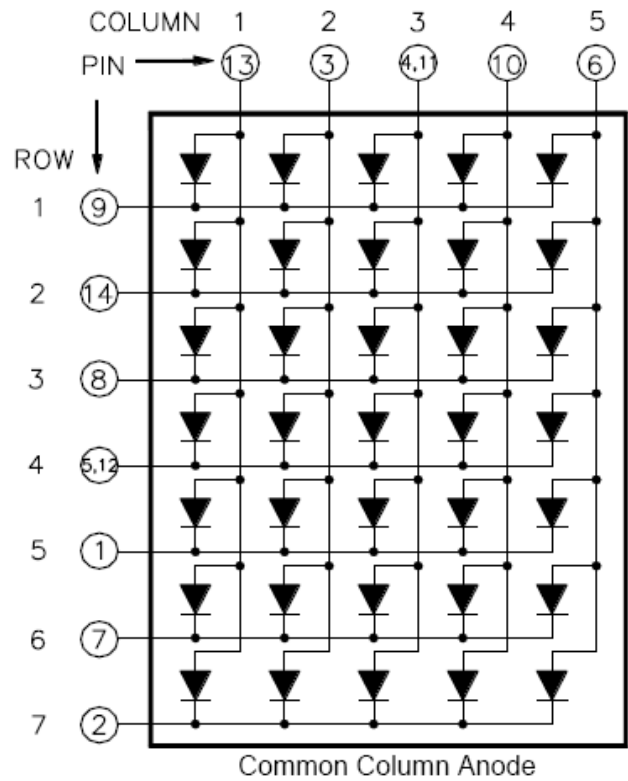
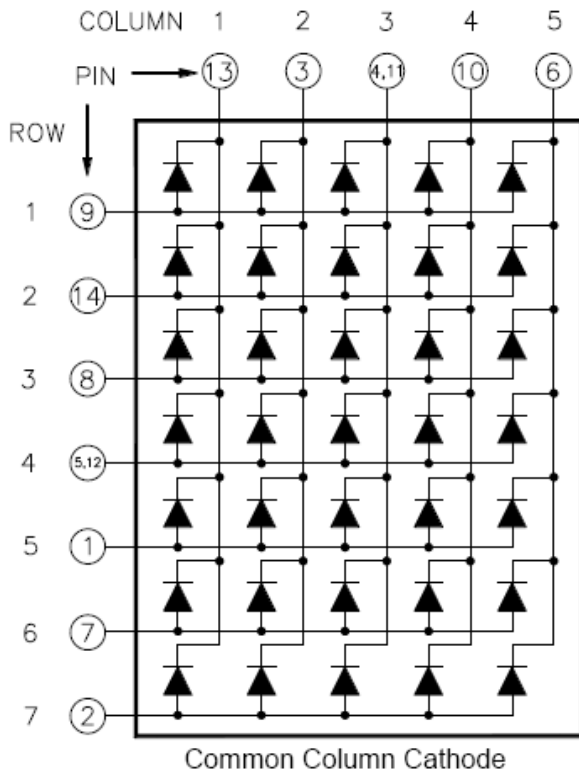
| C2 | | | | |
|----|-------|-------|-------|-------|
| X | 0.260 | 0.260 | 0.280 | 0.280 |
| Y | 0.210 | 0.240 | 0.257 | 0.227 |

| D1 | | | | |
|----|-------|-------|-------|-------|
| X | 0.280 | 0.280 | 0.300 | 0.300 |
| Y | 0.244 | 0.293 | 0.310 | 0.260 |

All Light-On Segments Feature & Pad Position



Internal Circuit Diagram

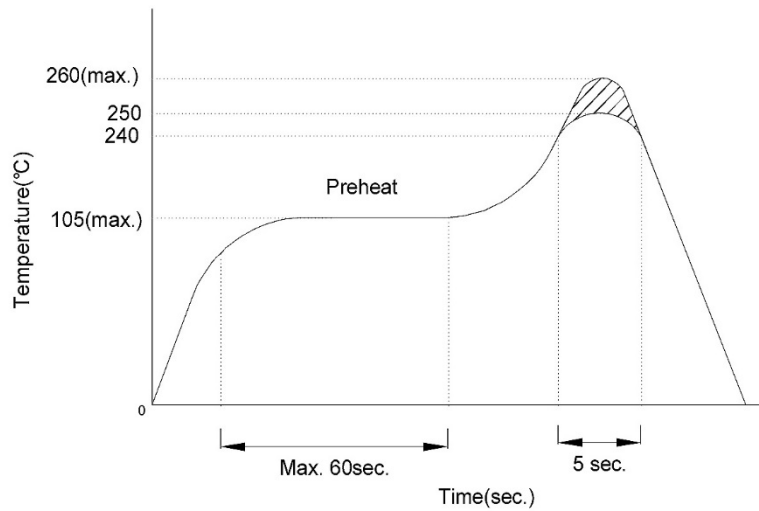


Precautions for Use

1. Recommended soldering conditions

1.1. Wave soldering

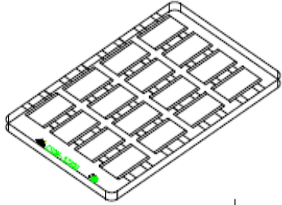
Basic SPEC is ≤ 5 sec. When 260°C . If temperature is higher, time should be shorter ($+10^{\circ}\text{C} \rightarrow -1$ sec.).



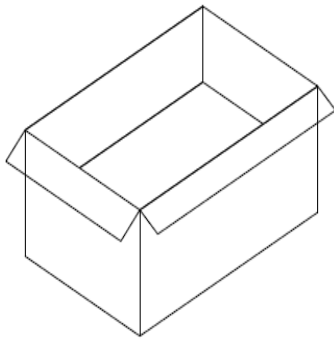
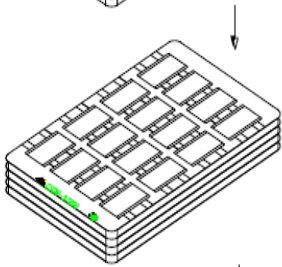
1.2. Soldering Iron:

Power dissipation of iron should be smaller than 15W and temp should be controllable. Soldering temperature should be under 260°C , time ≤ 3 sec.

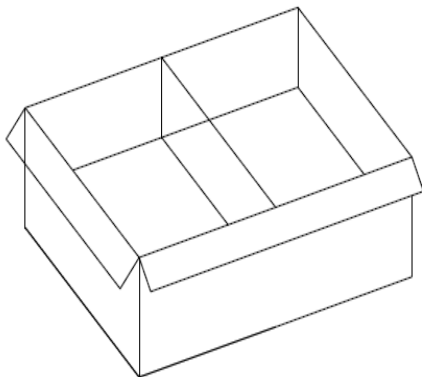
Packing Dimensions



1 Tray From Box = 16 PCS
Tray Size:
L300 x W190 x H19mm



12 Trays Per Inner Box
Q'TY: 192 PCS.
Box Size:
L300 x W205 x H240mm



2 Inner Boxes Per Carton,
Total Q'TY: 384 Pcs
Carton Size:
L431 x W320 x H252mm