

SPECIFICATIONS FOR DOT MATRIX DISPLAYS

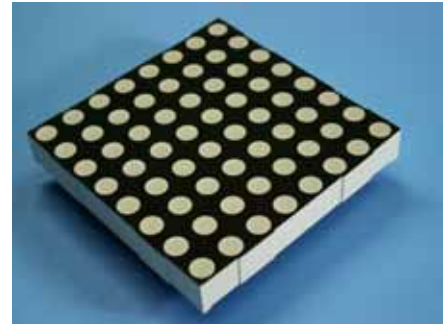
2.3" 8*8 Dot Matrix

LMD23088 -10 Series

WENRUN OPTOELECTRONIC

Features:

- Emitting dot 5.0mm diameter.
- High efficiency, low power consumption.
- Extremely low current.
- Low development cost.
- Big viewing angle vertically and horizontally.

**LMD23088A/B/C/D/E/F -10****Descriptions:**

- The LMD23088 is a 60.2mm (2.3") matrix height 8×8 dot matrix display.
- These devices are made with white dots and black surface.

Application

- Instrument panels.
- Digital read out display.

Selection Guide:

| Part No. | | Chip | | Lens Color |
|--------------------|--------------------|-----------|----------------|----------------|
| Anode | Cathode | Material | Emitting Color | |
| LMD23088B/D/FSR-10 | LMD23088A/C/ESR-10 | GaAlAs | Super Red | White Diffused |
| LMD23088B/D/FG-10 | LMD23088A/C/EG-10 | GaP | Green | |
| LMD23088B/D/FY-10 | LMD23088A/C/EY-10 | GaAsP/GaP | Yellow | |
| LMD23088B/D/FE-10 | LMD23088A/C/EE-10 | GaAsP/GaP | Orange | |

Absolute Maximum Rating (Ta=25)

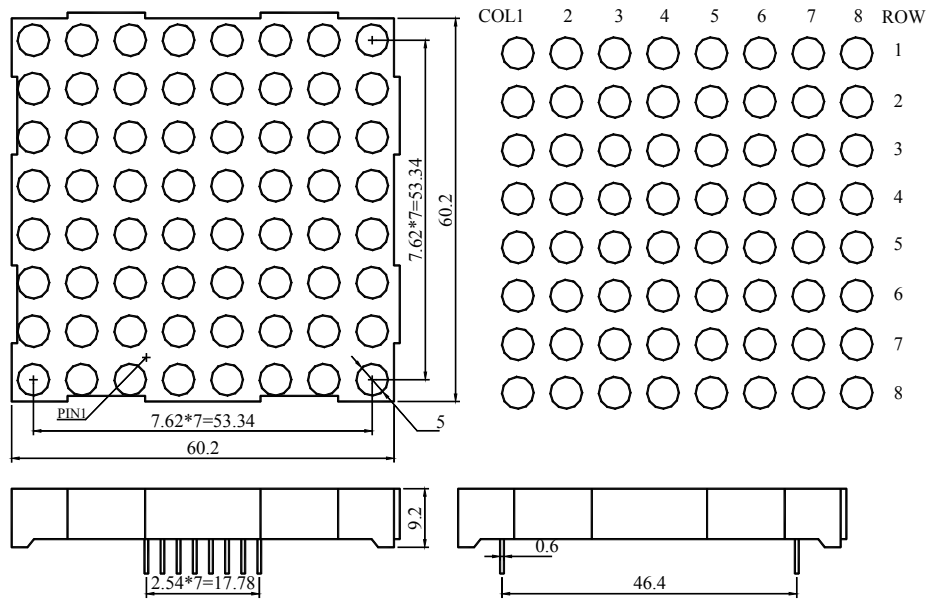
| Parameter | Symbol | Super Red | Green | Yellow | Orange | Unit |
|---|-----------------|-----------|-------|--------|--------|------|
| Power Dissipation/ Dot | P _d | 50 | 60 | 60 | 60 | mW |
| Peak Forward Current / Dot (Duty 1/10@ 1KHz) | I _{FP} | 70 | 70 | 70 | 70 | mA |
| Continuous Forward Current / Dot | I _F | 20 | 20 | 20 | 20 | mA |
| Recommend use current / Dot | I _F | 5~10 | 5~10 | 5~10 | 5~10 | mA |
| Reverse Voltage / Dot | V _R | 5 | 5 | 5 | 5 | V |
| Operating Temperature Range | Topr | -25~ +75 | | | | |
| Storage Temperature Range | Tstg | -30 ~ +85 | | | | |
| Solder Temperature | Tsol | 260 ± 5 | | | | |

- Notes :**
- 1、 This is the limit current. It is not allowed to use when the product work continuously.
 - 2、 It is recommended that the product is driven by TTL,CMOS .
 - 3、 Soldering time 5 seconds.

Electrical Optical Characteristics (Ta=25)

| Parameter | Symbol | Super Red | | Green | | Yellow | | Orange | | Unit | Test Condition |
|-----------------------------|----------------|-----------|------|-------|------|--------|------|--------|------|------|----------------------|
| | | Typ. | Max. | Typ. | Max. | Typ. | Max. | Typ. | Max. | | |
| Luminous Intensity / Dot | I _v | 9.6 | -- | 4.8 | -- | 4.8 | -- | 4.8 | -- | mcd | I _F =10mA |
| Forward Voltage / Dot | V _F | 1.85 | 2.3 | 2.2 | 2.5 | 2.0 | 2.5 | 2.0 | 2.5 | V | I _F =20mA |
| Reverse Current / Dot | I _R | -- | 50 | -- | 50 | -- | 50 | -- | 50 | uA | V _R =5V |
| Dominant Wavelength | d | 645 | -- | 565 | -- | 585 | -- | 630 | -- | nm | I _F =20mA |
| Spectral Line Half Width | | 30 | -- | 30 | -- | 30 | -- | 30 | -- | nm | I _F =20mA |

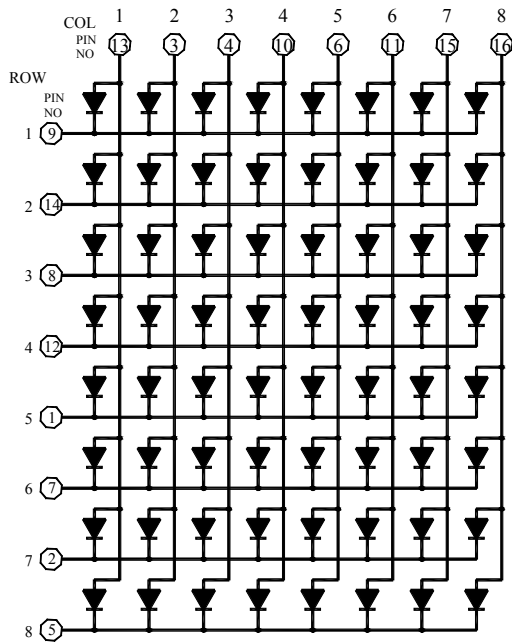
Package Dimensions:



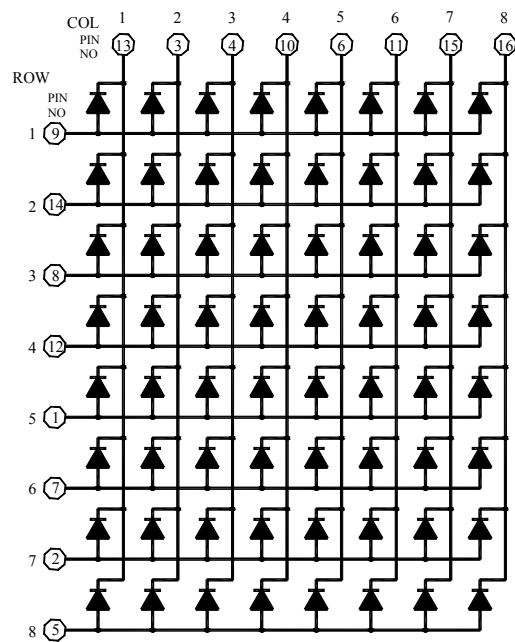
NOTES :

- All dimensions are in millimetres (mm), Tolerance is $\pm 0.25\text{mm}$ unless otherwise noted.
- Specifications are subject to change without notice.

Internal Circuit:

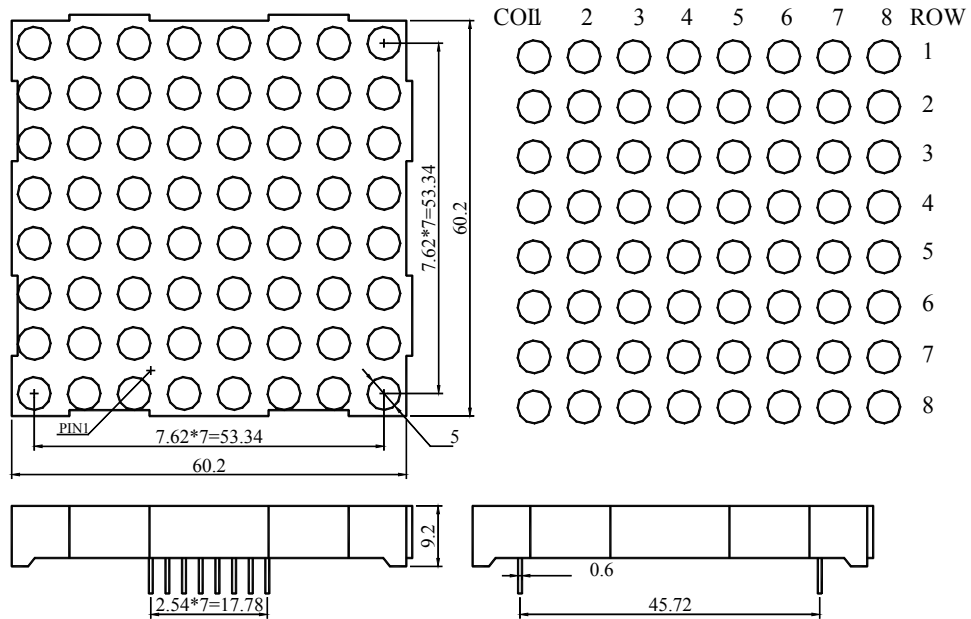


LMD23088A



LMD23088B

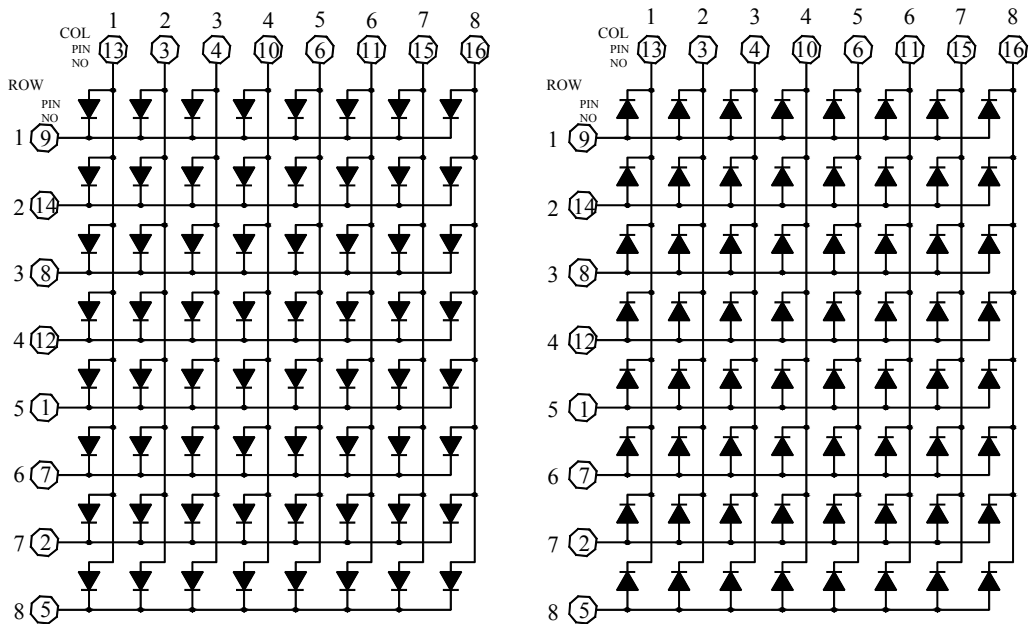
Package Dimensions:



NOTES :

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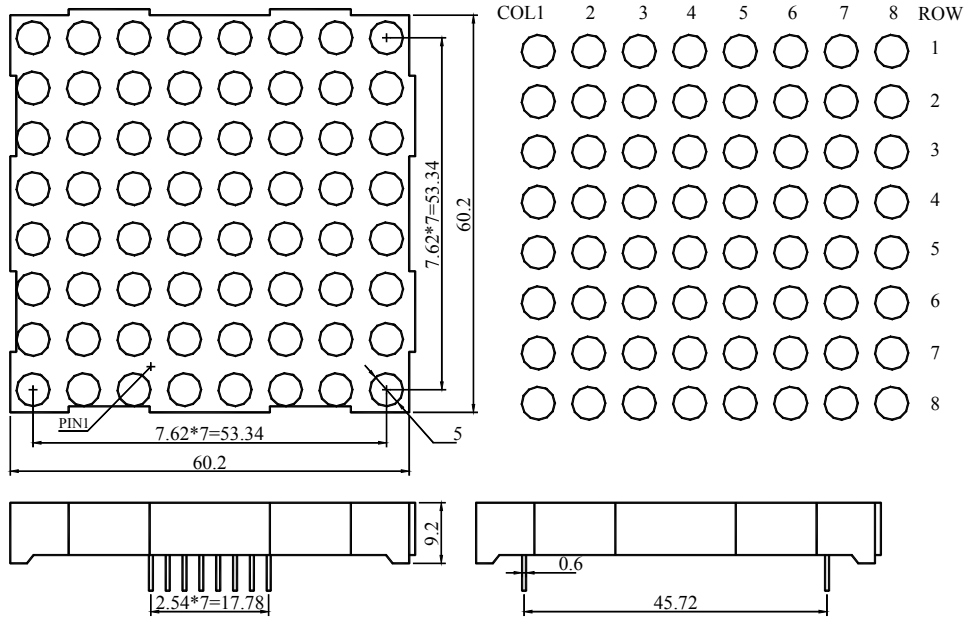
Internal Circuit:



LMD23088C

LMD23088D

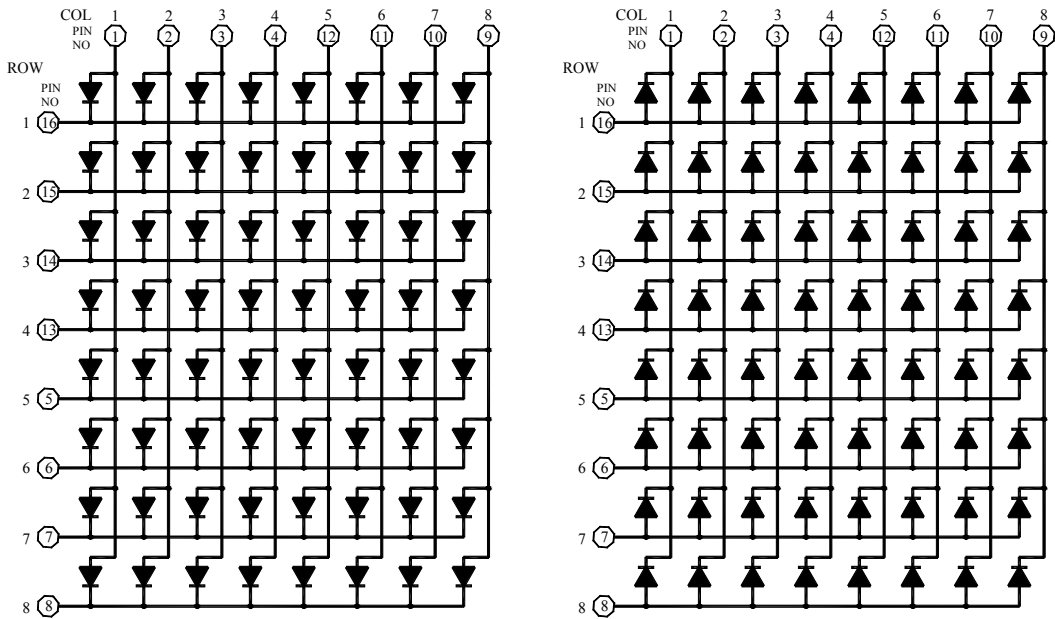
Package Dimensions:



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Internal Circuit:



LMD23088E

LMD23088F

Reliability Test Items and Conditions

| NO | Test Item | Test Conditions | Duration | Sample | Ac/Re |
|----|----------------------|---|-----------|--------|-------|
| 1 | Temperature Cycle | -30 ~ 25 ~ 85 ~ 25 30min 5min 30min 5min | 50cycles | 100 | 0/1 |
| 2 | High Temp. Storage | Ta=85 | 1000hours | 100 | 0/1 |
| 3 | Temp.& Humidity Test | Ta=85 RH=85% | 1000hours | 100 | 0/1 |
| 4 | Low Temp. Storage | Ta=-30 | 1000hours | 100 | 0/1 |
| 5 | Operating Life Test | Ta=25 ± 5 DC IF=15mA | 1000hours | 100 | 0/1 |
| 6 | Solder Heat | Tsol=260 ± 5 , 10s | 1times | 20 | 0/1 |

Typical Electro-Optical Characteristics Curves

