

5 x 7 matrix display

LM-2035 Series

The LM-2035 series are 5 x 7 matrix displays which can be used in a wide variety of applications, including alphabet, numeric, symbol, and graphic displays. Bright red, red and green are available, as a dual – color red / green type.

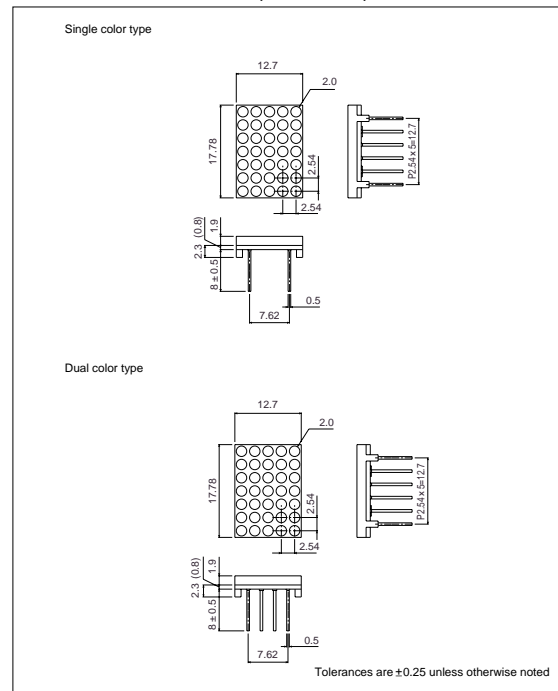
●Application

Light sources for displays

●Features

- 1) 5 x 7 dot matrix Circular emitters
- 2) External dimensions : 17.78 x 12.7 x 4.2 mm
- 3) Emitters : Circular, 2.0mm diameter
- 4) Black package

●External Dimensions (Units: mm)



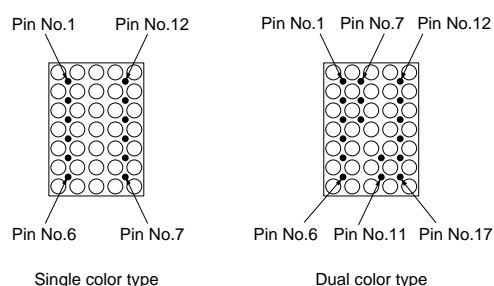
●Selection guide

| Emitting color | Red* | Red | Green | Red / Green |
|----------------|-----------|-----------|-----------|-------------|
| Common | | | | |
| Anode | LM-2035LB | LM-2035VB | LM-2035MB | - |
| Cathode | - | - | - | LM-2035MUM |

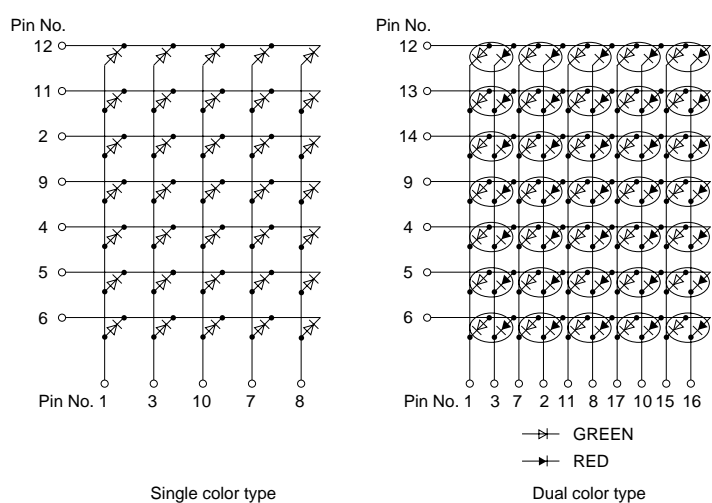
* High-luminance red

LED displays

●Pin assignments



●Internal circuit schematic



●Absolute maximum ratings (Ta=25°C)

Single – color type

| Parameter | Symbol | LB*2 | VB | MB | Unit |
|-----------------------|------------------|---------|---------|-------|------|
| | | Red | Red | Green | |
| Power dissipation | P _D | 1.4 | 1.23 | 1.23 | W |
| Forward current | I _F | 30 | 15 | 15 | mA |
| Peak forward current | I _{FP} | 80*1 | 60*1 | 60*1 | mA |
| Reverse voltage | V _R | 3 | 3 | 3 | V |
| Operating temperature | T _{opr} | –25~+60 | –25~+75 | | °C |
| Storage temperature | T _{stg} | –30~+85 | –30~+85 | | °C |

*1 Pulse width 1msec duty 1 / 5

*2 High-luminance red

LED displays

Dual – color type

| Parameter | Symbol | MUM | | Unit |
|-----------------------|-----------------|---------|-------|--------|
| | | Red | Green | |
| Power dissipation | P _D | 35 | 35 | mW/dot |
| Forward current | I _F | 15 | 15 | mA |
| Peak forward current | I _{FP} | 60* | 60* | mA |
| Reverse voltage | V _R | 4 | 4 | V |
| Operating temperature | Topr | -20~+50 | | °C |
| Storage temperature | Tstg | -25~+75 | | °C |

* Pulse width 1msec duty 1 / 5

●Electrical and optical characteristics (Ta=25°C)

Single – color type

| Parameter | Symbol | Conditions | LB | | | VB | | | MB | | | Unit |
|--------------------------|----------------|-----------------------|-------|------|------|------|------|------|-------|------|------|------|
| | | | Red*1 | | | Red | | | Green | | | |
| | | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | |
| Forward voltage | V _F | I _F = 10mA | — | 1.75 | 2.5 | — | 2.0 | 2.8 | — | 2.1 | 2.8 | V |
| Reverse current | I _R | V _R = 3V | — | — | 100 | — | — | 100 | — | — | 100 | μ A |
| Peak wavelength | λ _P | I _F = 10mA | — | 660 | — | — | 650 | — | — | 563 | — | nm |
| Spectral line half width | | I _F = 10mA | — | 25 | — | — | 40 | — | — | 40 | — | nm |

Not designed for radiation resistance.

*1 I_F = 20mA

Dual – color type

| Parameter | Symbol | Conditions | MUM | | | | | | Unit |
|--------------------------|----------------|-----------------------|------|------|------|-------|------|------|------|
| | | | Red | | | Green | | | |
| | | | Min. | Typ. | Max. | Min. | Typ. | Max. | |
| Forward voltage | V _F | I _F = 10mA | – | 2.0 | 2.8 | – | 2.1 | 2.8 | V |
| Reverse current | I _R | V _R = 3V | – | – | 100 | – | – | 100 | μ A |
| Peak wavelength | λ _P | I _F = 10mA | – | 635 | – | – | 563 | – | nm |
| Spectral line half width | | I _F = 10mA | – | 40 | – | – | 40 | – | nm |

Not designed for radiation resistance.

●Luminous intensity

| Color | Type | Min. | Typ. | Max. | Unit |
|-------|------|------|------|------|------|
| Red*1 | LB | 1.4 | 5.0 | – | mcd |
| Red | VB | 0.56 | 1.6 | – | mcd |
| Green | MB | 0.9 | 2.5 | – | mcd |
| Red | MUM | 0.56 | 1.6 | – | mcd |
| Green | | 0.9 | 2.5 | – | mcd |

Note: Measured at I_F = 10mA*1 I_F = 20mA