

# 5 × 7 matrix displays

## LM-2035 Series

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

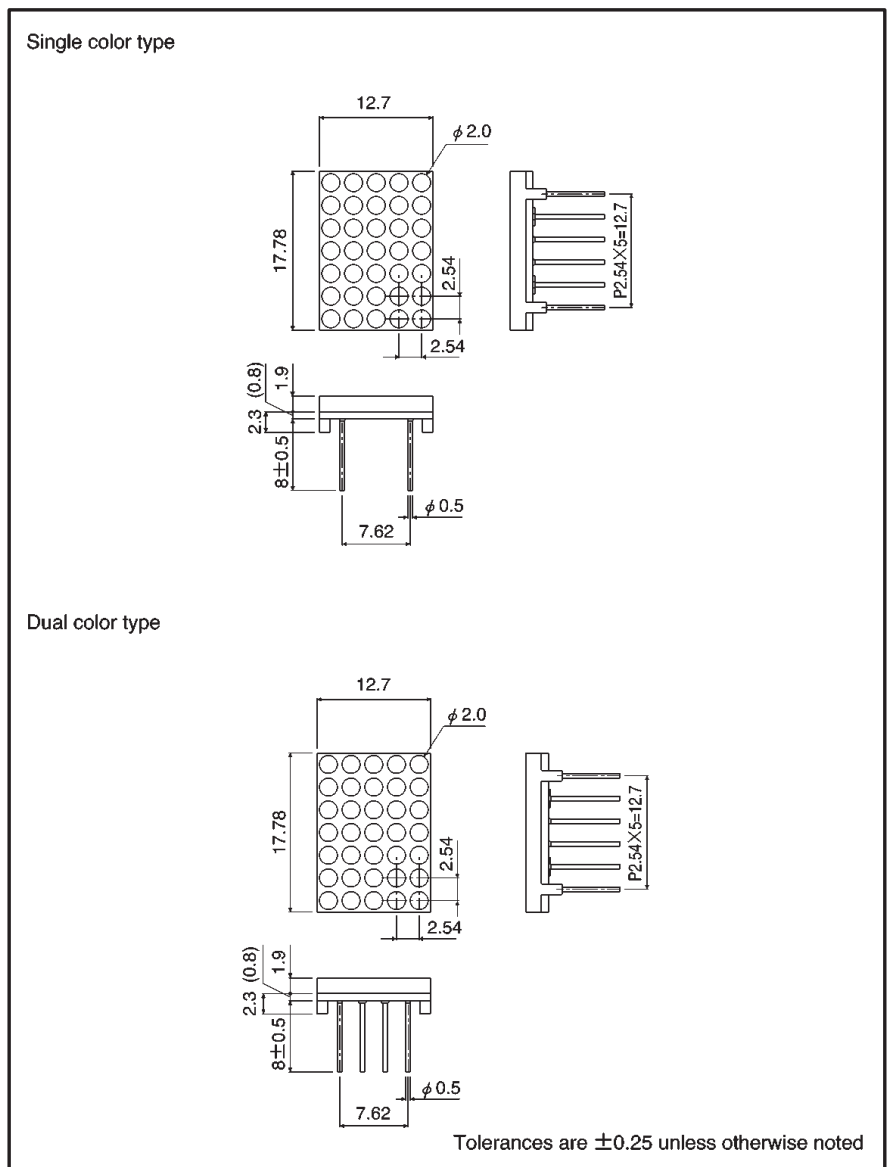
●Applications

Light sources for displays

●Features

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

●External dimensions (Units: mm)

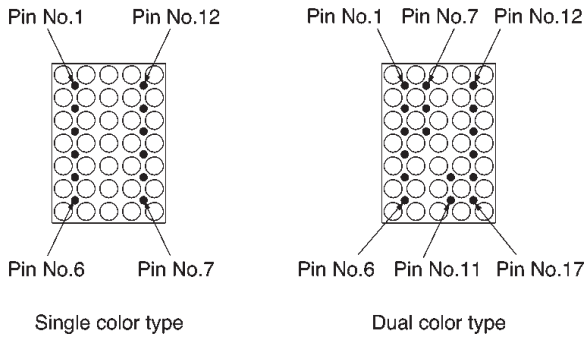


●Selection guide

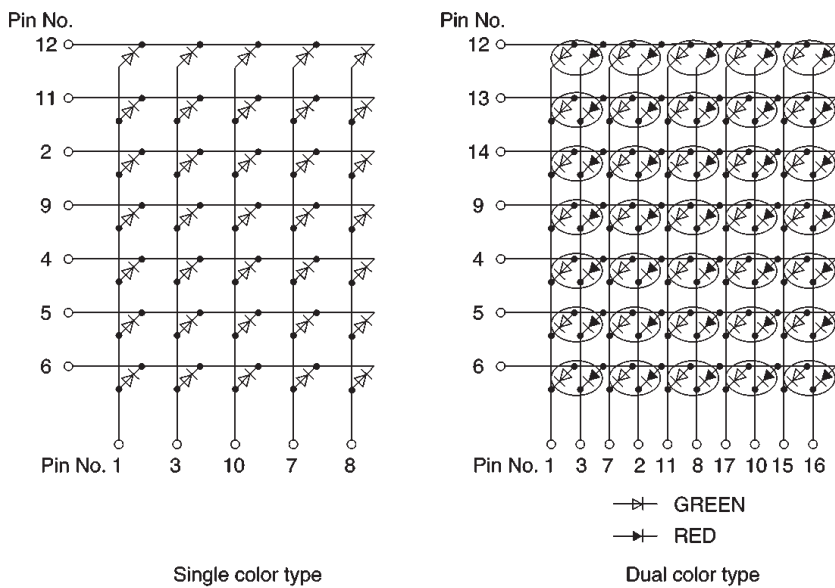
| Emitting color | Red*      | Red       | Green     | Red / Green |
|----------------|-----------|-----------|-----------|-------------|
|                | Common    |           |           |             |
| Anode          | LM-2035LB | LM-2035VB | LM-2035MB | —           |
| Cathode        | —    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

\* Bright red

● 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 <sub>D</sub>   | 1.4     | 1.23    | 1.23  | W    |
| Forward current       | I <sub>F</sub>   | 30      | 15      | 15    | mA   |
| Peak forward current  | I <sub>FP</sub>  | 80*1    | 60*1    | 60*1  | mA   |
| Reverse voltage       | V <sub>R</sub>   | 3       | 3       | 3     | V    |
| Operating temperature | T <sub>opr</sub> | -25~+60 | -25~+75 |       | °C   |
| Storage temperature   | T <sub>stg</sub> | -30~+85 | -30~+85 |       | °C   |

\*1 Pulse width 1msec duty 1 / 5

\*2 Bright red

## Dual-color type

| Parameter             | Symbol           | MUM     |       | Unit   |
|-----------------------|------------------|---------|-------|--------|
|                       |                  | Red     | Green |        |
| Power dissipation     | P <sub>D</sub>   | 35      | 35    | mW/dot |
| Forward current       | I <sub>F</sub>   | 15      | 15    | mA     |
| Peak forward current  | I <sub>FP</sub>  | 60*     | 60*   | mA     |
| Reverse voltage       | V <sub>R</sub>   | 4       | 4     | V      |
| Operating temperature | T <sub>opr</sub> | -20~+50 |       | °C     |
| Storage temperature   | T <sub>stg</sub> | -25~+75 |       | °C     |

\* Pulse width 1msec duty 1 / 5

●Electrical and optical characteristics (T<sub>a</sub> = 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 <sub>F</sub> | I <sub>F</sub> =10mA | —     | 1.75 | 2.5  | —    | 2.0  | 2.8  | —     | 2.1  | 2.8  | V    |
| Reverse current          | I <sub>R</sub> | V <sub>R</sub> =3V   | —     | —    | 10   | —    | —    | 100  | —     | —    | 100  | μA   |
| Peak wavelength          | λ <sub>P</sub> | I <sub>F</sub> =10mA | —     | 660  | —    | —    | 650  | —    | —     | 563  | —    | nm   |
| Spectral line half width | Δλ             | I <sub>F</sub> =10mA | —     | 25   | —    | —    | 40   | —    | —     | 40   | —    | nm   |

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\*1 I<sub>F</sub> = 20mA

## Dual-color type

| Parameter                | Symbol         | Conditions           | MUM  |      |      |       |      |      | Unit |
|--------------------------|----------------|----------------------|------|------|------|-------|------|------|------|
|                          |                |                      | Red  |      |      | Green |      |      |      |
|                          |                |                      | Min. | Typ. | Max. | Min.  | Typ. | Max. |      |
| Forward voltage          | V <sub>F</sub> | I <sub>F</sub> =10mA | —    | 2.0  | 2.8  | —     | 2.1  | 2.8  | V    |
| Reverse current          | I <sub>R</sub> | V <sub>R</sub> =3V   | —    | —    | 100  | —     | —    | 100  | μA   |
| Peak wavelength          | λ <sub>P</sub> | I <sub>F</sub> =10mA | —    | 635  | —    | —     | 563  | —    | nm   |
| Spectral line half width | Δλ             | I <sub>F</sub> =10mA | —    | 40   | —    | —     | 40   | —    | nm   |

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## ●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<sub>F</sub> = 10mA\*1 I<sub>F</sub> = 20mA