## $5 \times 7$ matrix displays LM-035 / LM-0352 Series

The LM-035 and LM-0352 series are 5 $\times 7$ matrix displays which can be used in a wide variety of applications, including alphabet, numeric, symbol, and graphic displays. Bright red, red, orange and green are available in square and circular shapes to allow easy incorporation into the apparatus design.
-Applications
Light sources for displays

## -Features

1) $5 \times 7$ dot matrix

Square and circular emitters.
2) External dimensions: $20 \times 14 \times 8$ mm .
3) Dimensions of square emitters: 2.2 $\times 2.2 \mathrm{~mm}$
Diameter of circular emitters: 2.2 mm.
4) Black package, colored emitters.
5) Wide viewing angle.
6) Clear display.

External dimensions (Units: mm)


Tolerances are $\pm 0.15$ unless otherwise noted:

- Selection guide

| Common | Red* | Red | Orange | Green |
| :--- | :---: | :---: | :---: | :---: |
|  | LM-035LR A | LM-035VR A | LM-035DU A | LM-035MG A |
|  | LM-035LR B | LM-035VR B | LM-035DU B | LM-035MG B |
| Cathode | - | LM-0352VR A | - | - |
|  | - | LM-0352VR B | - | LM-0352MG B |

* Bright red
-Pin assignments

-Absolute maximum ratings $\left(\mathrm{Ta}=25^{\circ} \mathrm{C}\right)$

| Parameter | Symbol | LR*2 | VR | DU | MG | Unit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Power dissipation | PD | 2.8 | 1.23 | 1.23 | 1.23 | W |
| Forward current | IF | 30 | 15 | 15 | 15 | mA |
| Peak forward current | Ifp | 60*1 | 60*1 | 60*1 | 60*1 | mA |
| Reverse voltage | VR | 4 | 3 | 3 | 3 | $\checkmark$ |
| Operating temperature | Topr | $-25 \sim+60$ | $-25 \sim+75$ |  |  | ${ }^{\circ} \mathrm{C}$ |
| Storage temperature | Tstg | $-30 \sim+85$ | $-30 \sim+85$ |  |  | ${ }^{\circ} \mathrm{C}$ |

*1 Pulse width 1 ms duty $1 / 5$
*2 Bright red
-Electrical and optical characteristics $\left(\mathrm{Ta}=25^{\circ} \mathrm{C}\right)$

| Parameter | Symbol | Conditions | LR* ${ }^{\text {* }}$ |  |  | VR |  |  | DU |  |  | MG |  |  | Unit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. |  |
| Forward voltage | $V_{F}$ | $\mathrm{IF}=10 \mathrm{~mA}$ | - | 1.75 | 2.5 | - | 2.0 | 2.8 | - | 2.0 | 2.8 | - | 2.1 | 2.8 | $V$ |
| Reverse current | If | $V_{R}=3 \mathrm{~V}$ | - | - | 100 | - | - | 100 | - | - | 100 | - | - | 100 | $\mu \mathrm{A}$ |
| Peak wavelength | $\lambda \mathrm{P}$ | $\mathrm{IF}_{\mathrm{F}}=10 \mathrm{~mA}$ | - | 660 | - | - | 650 | - | - | 610 | - | - | 563 | - | nm |
| Spectral line half width | $\Delta \lambda$ | $\mathrm{IF}=10 \mathrm{~mA}$ | - | 25 | - | - | 40 | - | - | 40 | - | - | 40 | - | nm |

ONot designed for radiation resistace.

* $1 \mathrm{IF}=20 \mathrm{~mA}, \mathrm{VR}=4 \mathrm{~V}$
-Luminous intensity

| Color | Type | Min. | Typ. | Max. | Unit |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Red | LR $^{* 1}$ | 2.2 | 6.3 | - | mcd |
| Red | VR | 0.56 | 1.6 | - | mcd |
| Orange | DU | 0.9 | 2.5 | - | mcd |
| Green | MG | 0.9 | 2.5 | - | mcd |

Note: Measured at IF $=10 \mathrm{~mA}$
$* 1 \mathrm{IF}=20 \mathrm{~mA}$

