

# High efficiency, two-digit numeric displays

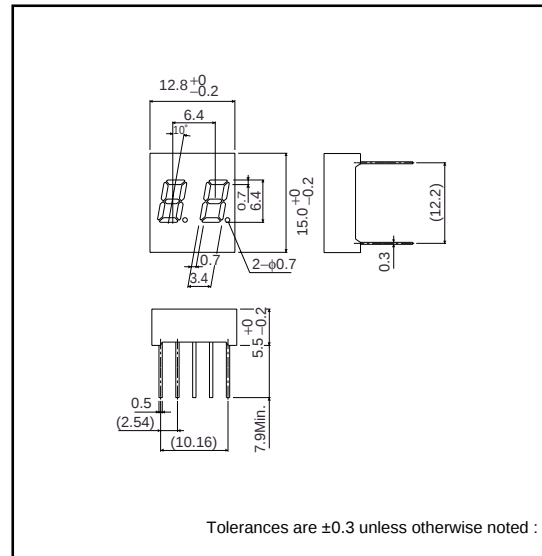
## LB-202BL Series

The LB-202BL series are small, two-digit numeric displays with a character height of 6.4 mm. These displays can be combined with appropriate displays in the three-digit LB-203 BL series to form a multi-digit display with an equal pitch interval between characters.

### ●Features

- 1) Four colors are available: red, orange, yellow, and green.
- 2) Common anode and common cathode configurations are available.
- 3) Dynamic lighting system to minimize the number of pins.
- 4) The package surface is painted black and the segments are colored the display color.

### ●External Dimensions (Units: mm)

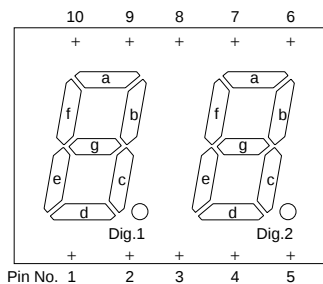


### ●Selection guide

| Emitting color | Red      | Orange     | Yellow     | Green    |
|----------------|----------|------------|------------|----------|
| Common         |          |            |            |          |
| Anode          | LB-202VB | LB-202DB * | LB-202YB * | LB-202MB |
| Cathode        | LB-202VL | LB-202DL * | LA-202YL * | LB-202ML |

\* Order-based production.

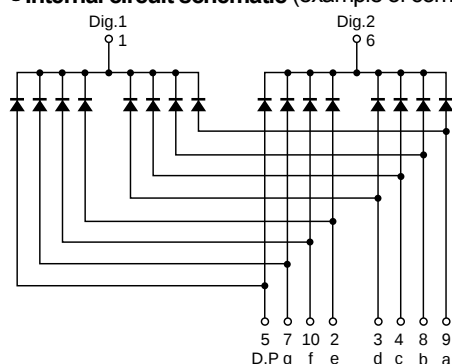
### ●Pin assignments



| Pin No. | Function       |
|---------|----------------|
| 1       | Digit 1 Common |
| 2       | Segment "e"    |
| 3       | Segment "d"    |
| 4       | Segment "c"    |
| 5       | D.P            |
| 6       | Digit 2 Common |
| 7       | Segment "g"    |
| 8       | Segment "b"    |
| 9       | Segment "a"    |
| 10      | Segment "f"    |

## LED displays

## ●Internal circuit schematic (example of common cathode)



## ●Absolute maximum ratings (Ta=25°C)

| Parameter             | Symbol             | Red           | Orange        | Yellow        | Green         | Unit |
|-----------------------|--------------------|---------------|---------------|---------------|---------------|------|
|                       |                    | LB-202VB / VL | LB-202DB / DL | LB-202YB / YL | LB-202MB / ML |      |
| Power dissipation     | $P_D$              | 640           | 640           | 640           | 640           | mW   |
| Power dissipation     | $P_D / \text{seg}$ | 40            | 40            | 40            | 60            | mW   |
| Forward current       | $I_F$              | 15            | 15            | 15            | 20            | mA   |
| Peak forward current  | $I_{FP}$           | 60*           | 60*           | 60*           | 60*           | mA   |
| Reverse voltage       | $V_R$              | 3             | 3             | 3             | 3             | V    |
| Operating temperature | $T_{opr}$          | -25~+75       |               |               |               | °C   |
| Storage temperature   | $T_{stg}$          | -30~+85       |               |               |               | °C   |

\* Pulse width 1ms duty 1 / 5

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

| Parameter                | Symbol          | Conditions        | Red  |      |      | Orange |      |      | Yellow |      |      | Green |      |      | Unit |
|--------------------------|-----------------|-------------------|------|------|------|--------|------|------|--------|------|------|-------|------|------|------|
|                          |                 |                   | Min. | Typ. | Max. | Min.   | Typ. | Max. | Min.   | Typ. | Max. | Min.  | Typ. | Max. |      |
| Forward voltage          | $V_F$           | $I_F=10\text{mA}$ | —    | 2.0  | 2.8  | —      | 2.0  | 2.8  | —      | 2.1  | 2.8  | —     | 2.1  | 2.8  | V    |
| Reverse current          | $I_R$           | $V_R=3\text{V}$   | —    | —    | 100  | —      | —    | 100  | —      | —    | 100  | —     | —    | 100  | μA   |
| Peak wavelength          | $\lambda_P$     | $I_F=10\text{mA}$ | —    | 650  | —    | —      | 610  | —    | —      | 585  | —    | —     | 563  | —    | nm   |
| Spectral line half width | $\Delta\lambda$ | $I_F=10\text{mA}$ | —    | 40   | —    | —      | 40   | —    | —      | 40   | —    | —     | 40   | —    | nm   |

©Not designed for radiation resistance.

## ●Luminous intensity

| Color  | $\lambda_P$ | Type     | Min. | Typ. | Max. | Unit |
|--------|-------------|----------|------|------|------|------|
| Red    | 650         | LB-202VB | 2.2  | 6.3  | —    | mcd  |
|        |             | LB-202VL |      |      |      |      |
| Orange | 610         | LB-202DB | 2.2  | 6.3  | —    | mcd  |
|        |             | LB-202DL |      |      |      |      |
| Yellow | 585         | LB-202YB | 2.2  | 6.3  | —    | mcd  |
|        |             | LB-202YL |      |      |      |      |
| Green  | 563         | LB-202MB | 2.2  | 6.3  | —    | mcd  |
|        |             | LB-202ML |      |      |      |      |

Note : Measured at  $I_F=10\text{mA}$