

# High efficiency, three-digit numeric displays

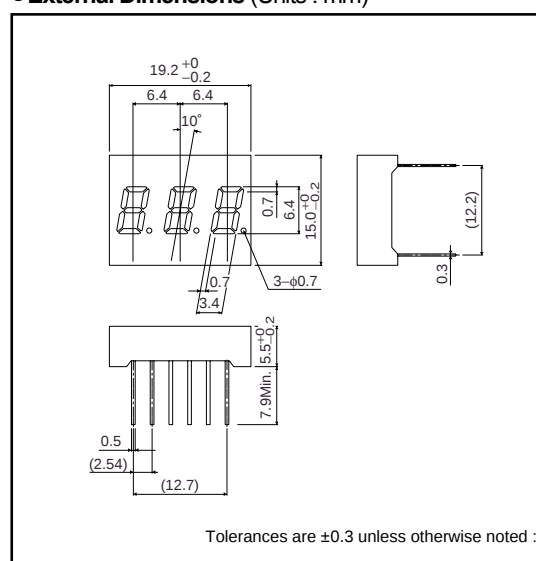
## LB-203BL Series

The LB-203BL series are small, three-digit numeric displays with a character height of 6.4mm. These displays can be combined with appropriate displays in the two-digit LB-202BL 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) Equal pitch interval between characters even with multi-digit display.
- 5) The package surface is painted black and the segments are colored the display color.

### ●External Dimensions (Units : mm)

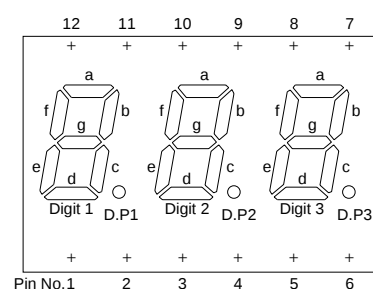


### ●Selection guide

| Emitting color | Red      | Orange     | Yellow     | Green    |
|----------------|----------|------------|------------|----------|
| Common         |          |            |            |          |
| Anode          | LB-203VB | LB-203DB * | LB-203YB * | LB-203MB |
| Cathode        | LB-203VL | LB-203DL * | LB-203YL * | LB-203ML |

\* Order-based production.

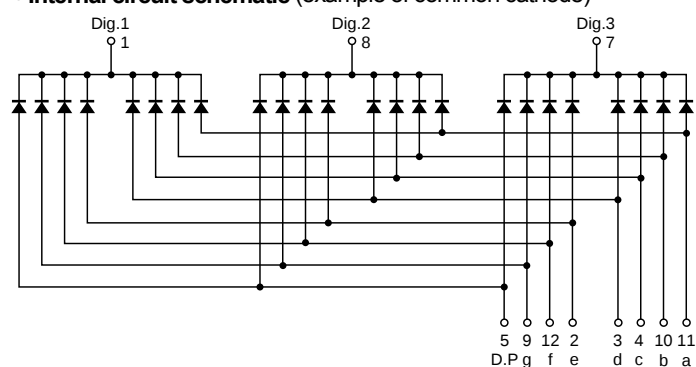
### ●Pin assignments



| Pin No. | Function       |
|---------|----------------|
| 1       | Digit 1 Common |
| 2       | Segment "e"    |
| 3       | Segment "d"    |
| 4       | Segment "c"    |
| 5       | D.P            |
| 6       | N.C            |
| 7       | Digit 3 Common |
| 8       | Digit 2 Common |
| 9       | Segment "g"    |
| 10      | Segment "b"    |
| 11      | Segment "a"    |
| 12      | 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-203VB / VL | LB-203DB / DL | LB-203YB / YL | LB-203MB / ML |      |
| Power dissipation     | P <sub>D</sub>       | 960           | 960           | 960           | 960           | mW   |
| Power dissipation     | P <sub>D</sub> / seg | 40            | 40            | 40            | 60            | mW   |
| Forward current       | I <sub>F</sub>       | 15            | 15            | 15            | 15            | mA   |
| Peak forward current  | I <sub>FP</sub>      | 60*           | 60*           | 60*           | 60*           | mA   |
| Reverse voltage       | V <sub>R</sub>       | 3             | 3             | 3             | 3             | V    |
| Operating temperature | T <sub>opr</sub>     | -25~+75       |               |               |               | °C   |
| Storage temperature   | T <sub>stg</sub>     | -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 <sub>F</sub> | I <sub>F</sub> =10mA | —    | 2.0  | 2.8  | —      | 2.0  | 2.8  | —      | 2.1  | 2.8  | —     | 2.1  | 2.8  | V    |
| Reverse current          | I <sub>R</sub> | V <sub>R</sub> =3V   | —    | —    | 100  | —      | —    | 100  | —      | —    | 100  | —     | —    | 100  | μA   |
| Peak wavelength          | λ <sub>P</sub> | I <sub>F</sub> =10mA | —    | 650  | —    | —      | 610  | —    | —      | 585  | —    | —     | 563  | —    | nm   |
| Spectral line half width | Δλ             | I <sub>F</sub> =10mA | —    | 40   | —    | —      | 40   | —    | —      | 40   | —    | —     | 40   | —    | nm   |

© Not designed for radiation resistance.

## ● Luminous intensity

| Color  | λ <sub>P</sub> | Type     | Min. | Typ. | Max. | Unit |
|--------|----------------|----------|------|------|------|------|
| Red    | 650            | LB-203VB | 2.2  | 6.3  | —    | mcd  |
|        |                | LB-203VL |      |      |      |      |
| Orange | 610            | LB-203DB | 2.2  | 6.3  | —    | mcd  |
|        |                | LB-203DL |      |      |      |      |
| Yellow | 585            | LB-203YB | 2.2  | 6.3  | —    | mcd  |
|        |                | LB-203YL |      |      |      |      |
| Green  | 563            | LB-203MB | 2.2  | 6.3  | —    | mcd  |
|        |                | LB-203ML |      |      |      |      |

Note : Measured at I<sub>F</sub>=10mA