

# High efficiency, two-digit numeric displays

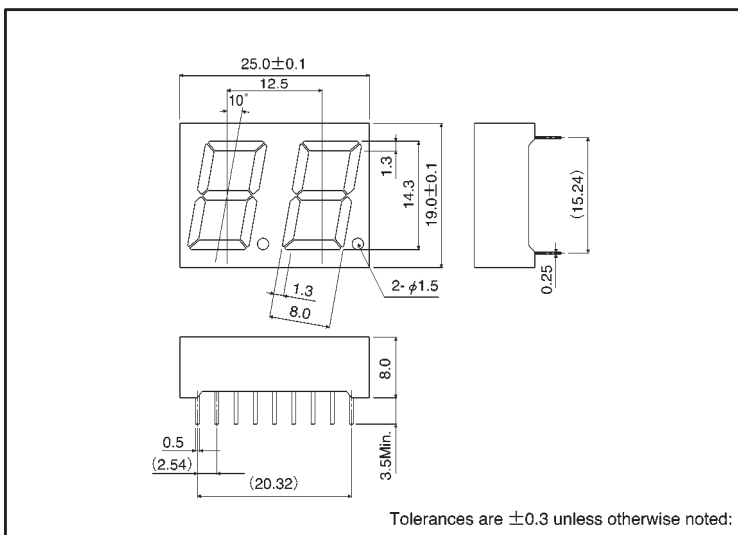
## LB-602 AK2 Series

The LB-602 AK2 series of LED displays were designed for use in bright locations. The character height is 14.3 mm and four colors are available : red, orange, yellow and green.

### ●Features

- 1) Height of character: 14.3 mm.
- 2) External dimensions: 19 × 25 × 8.0 mm.
- 3) Common anode and common cathode configurations are available for each color.
- 4) The package surface is painted black and the segments are colored the display color.
- 5) High luminance, clear display.

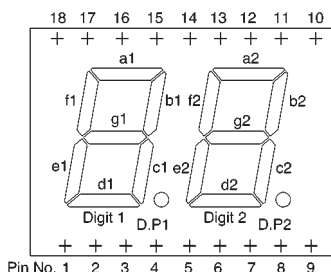
### ●External dimensions (Units: mm)



### ●Selection guide

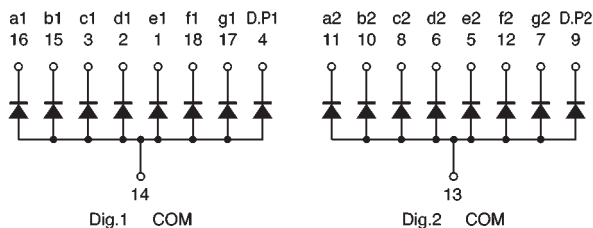
| Emitting color | Red       | Orange    | Yellow    | Green     |
|----------------|-----------|-----------|-----------|-----------|
| Common         |           |           |           |           |
| Anode          | LB-602VA2 | LB-602DA2 | LB-602YA2 | LB-602MA2 |
| Cathode        | LB-602VK2 | LB-602DK2 | LB-602YK2 | LB-602MK2 |

### ●Pin assignments



| Pin No. | Function     | Pin No. | Function       |
|---------|--------------|---------|----------------|
| 1       | Segment "e1" | 10      | Segment "b2"   |
| 2       | Segment "d1" | 11      | Segment "a2"   |
| 3       | Segment "c1" | 12      | Segment "f2"   |
| 4       | D.P1         | 13      | Digit 2 Common |
| 5       | Segment "e2" | 14      | Digit 1 Common |
| 6       | Segment "d2" | 15      | Segment "b1"   |
| 7       | Segment "g2" | 16      | Segment "a1"   |
| 8       | Segment "c2" | 17      | Segment "g1"   |
| 9       | D.P2         | 18      | Segment "f1"   |

● Internal circuit schematic (example of common anode)



● Absolute maximum ratings ( $T_a = 25^\circ\text{C}$ )

| Parameter             | Symbol             | Red             | Orange          | Yellow          | Green           | Unit             |
|-----------------------|--------------------|-----------------|-----------------|-----------------|-----------------|------------------|
|                       |                    | LB-602VA2 / VK2 | LB-602DA2 / DK2 | LB-602YA2 / YK2 | LB-602MA2 / MK2 |                  |
| Power dissipation     | $P_D$              | 960             | 960             | 960             | 960             | mW               |
| Power dissipation     | $P_D / \text{seg}$ | 60              | 60              | 60              | 60              | mW               |
| Forward current       | $I_F$              | 20              | 20              | 20              | 20              | mA               |
| Peak forward current  | $I_{FP}$           | 60*             | 60*             | 60*             | 60*             | mA               |
| Reverse voltage       | $V_R$              | 5               | 5               | 5               | 5               | V                |
| Operating temperature | $T_{opr}$          | $-25 \sim +85$  |                 |                 |                 | $^\circ\text{C}$ |
| Storage temperature   | $T_{stg}$          | $-30 \sim +100$ |                 |                 |                 | $^\circ\text{C}$ |

\* Pulse width 1ms duty 1 / 5

● Electrical and optical characteristics ( $T_a = 25^\circ\text{C}$ )

| 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          | $I_R$           | $V_R = 5\text{V}$   | —    | —    | 100  | —      | —    | 100  | —      | —    | 100  | —     | —    | 100  | $\mu\text{A}$ |
| 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-602VA2 | 5.6  | 16   | —    | mcd  |
|        |             | LB-602VK2 |      |      |      |      |
| Orange | 610         | LB-602DA2 | 3.6  | 10   | —    | mcd  |
|        |             | LB-602DK2 |      |      |      |      |
| Yellow | 585         | LB-602YA2 | 3.6  | 10   | —    | mcd  |
|        |             | LB-602YK2 |      |      |      |      |
| Green  | 563         | LB-602MA2 | 9    | 25   | —    | mcd  |
|        |             | LB-602MK2 |      |      |      |      |

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