

Double Digits LED Numeric Display

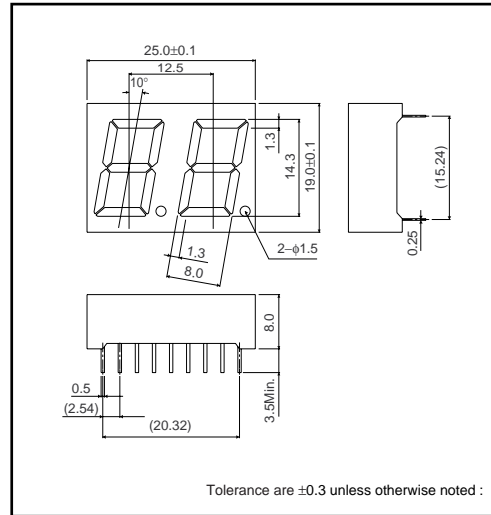
LB-602 A / K2 Series

LB-602 A / K2 series is designed to use in the light. Materials of emission are GaAsP on GaP, AlGaInP GaP and GaN. This is the height of a letter 14.3mm, double digits LED Numeric Display that is packed by epoxy resin.

●Features

- 1) The height of a letter is 14.3mm.
- 2) Dimension is 25.0×19.0×8.0mm.
- 3) The package of surface color is black. Color of segment is colored in emitting color. (Blue color is only milky white)
- 4) Each color has anode common and cathode common respectively.

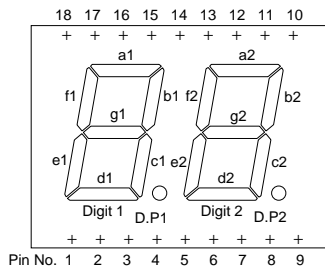
●Dimensions (Unit : mm)



●Selection guide

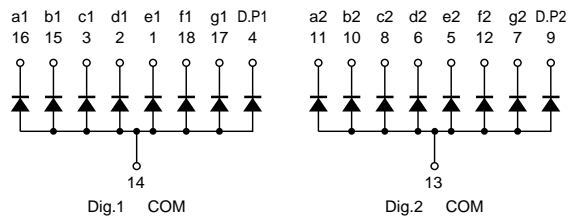
| Common | Emitting color | | | | | |
|---------|----------------|-----------------------|--------------------------|--------------------------|-----------|-----------|
| | Red | Red (High brightness) | Orange (High brightness) | Yellow (High brightness) | Green | Blue |
| Anode | LB-602VA2 | LB-602AA2 | LB-602EA2 | LB-602XA2 | LB-602MA2 | LB-602BA2 |
| Cathode | LB-602VK2 | LB-602AK2 | LB-602EK2 | LB-602XK2 | LB-602MK2 | LB-602BK2 |

●Pin assignments

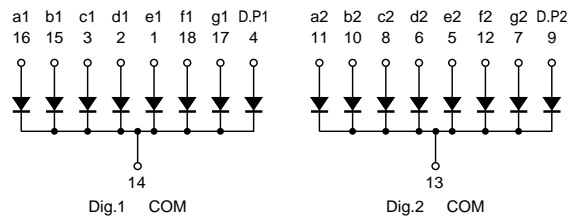


| Pin No. | Function | Pin No. | Function |
|---------|--------------|---------|----------------|
| 1 | Segment "e1" | 10 | Segment "b2" |
| 2 | Segment "d1" | 11 | Segment "a2" |
| 3 | Segment "c1" | 12 | Segment "f2" |
| 4 | D.P1 | 13 | Digit 2 Common |
| 5 | Segment "e2" | 14 | Digit 1 Common |
|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

●Equivalent circuit (anode common)



(cathode common)



LED displays

●Absolute maximum ratings (Ta=25°C)

| Parameter | Symbol | Red | Red (High brightness) | Orange (High brightness) | Yellow (High brightness) | Green | Blue | Unit |
|-----------------------|----------------------|-----------------|-----------------------|--------------------------|--------------------------|-----------------|-----------------|------|
| | | LB-602VA2 / VK2 | LB-602AA2 / AK2 | LB-602EA2 / EK2 | LB-602XA2 / XK2 | LB-602MA2 / MK2 | LB-602BA2 / BK2 | |
| Power dissipation | P _D | 960 | 1040 | 1040 | 1040 | 960 | 960 | mW |
| Power dissipation | P _D / seg | 60 | 65 | 65 | 65 | 65 | 42 | mW |
| Forward current | I _F | 20 | 25 | 25 | 25 | 20 | 10 | mA |
| Peak forward current | I _{FP} | 60 *1 | 50 *2 | 50 *2 | 50 *2 | 60 *1 | 50 *2 | mA |
| Reverse voltage | V _R | 5 | 5 | 5 | 5 | 5 | 5 | V |
| Operating temperature | T _{opr} | -25 to +75 | | | | | | °C |
| Storage temperature | T _{stg} | -30 to +85 | | | | | | °C |

*1 Pulse width 1ms Duty 1 / 5

*2 Pulse width 0.1ms Duty 1 / 10

●Electrical characteristics (Ta=25°C)

| Parameter | Symbol | Conditions | Red | | Red (High brightness) | | Orange (High brightness) | | Yellow (High brightness) | | Green | | Blue | | Unit |
|--------------------------|----------------|----------------------|------|------|-----------------------|------|--------------------------|------|--------------------------|------|-------|------|------|------|------|
| | | | Typ. | Max. | Typ. | Max. | Typ. | Max. | Typ. | Max. | Typ. | Max. | Typ. | Max. | |
| Forward voltage | V _F | I _F =10mA | 2.0 | 2.8 | 2.05* | 2.6* | 2.05* | 2.6* | 2.05* | 2.6* | 2.1 | 2.8 | 3.6 | 4.2 | V |
| Reverse current | I _R | V _R =3V | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | - | 100 | μA |
| Peak wavelength | λ _P | I _F =10mA | 650 | - | 626* | - | 610* | - | 589* | - | 563 | - | 470 | - | nm |
| Spectral line half width | Δλ | I _F =10mA | 40 | - | 18* | - | 17* | - | 15* | - | 40 | - | 26 | - | nm |

©The products are not radiations resistant.

* Shows the number on the condition of I_F=20mA.

●Luminous intensity

| Color | λ _P (nm) | Type | Min. | Typ. | Unit |
|--------------------------|---------------------|-----------|------|------|------|
| Red | 650 | LB-602VA2 | 5.6 | 16 | mcd |
| | | LB-602VK2 | | | |
| Red (High brightness) | 626 | LB-602AA2 | 36 | 90 | mcd |
| | | LB-602AK2 | | | |
| Orange (High brightness) | 610 | LB-602EA2 | 36 | 90 | mcd |
| | | LB-602EK2 | | | |
| Yellow (High brightness) | 589 | LB-602XA2 | 36 | 90 | mcd |
| | | LB-602XK2 | | | |
| Green | 563 | LB-602MA2 | 9 | 25 | mcd |
| | | LB-602MK2 | | | |
| Blue | 470 | LB-602BA2 | 14 | 56 | mcd |
| | | LB-602BK2 | | | |

©A condition of measurement is I_F=10mA.

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●Electrical and optical characteristic curves

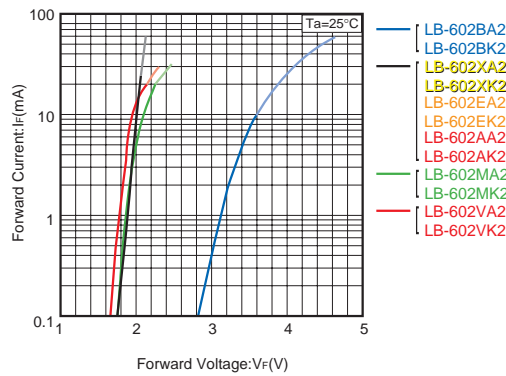


Fig.1 Forward Current - Forward Voltage

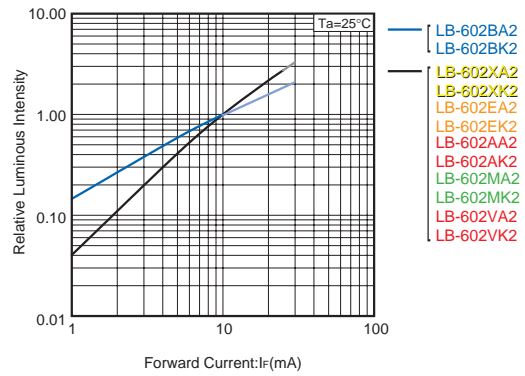


Fig.2 Relative Luminous Intensity - Forward Current

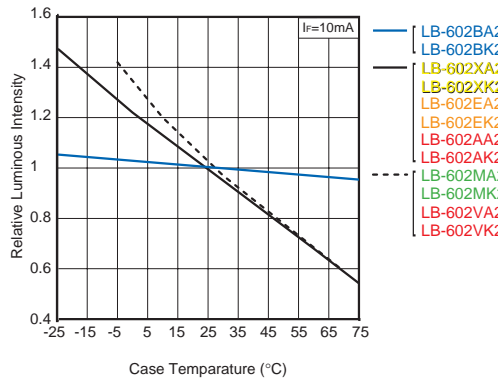


Fig.3 Relative Luminous Intensity - Case Temperature

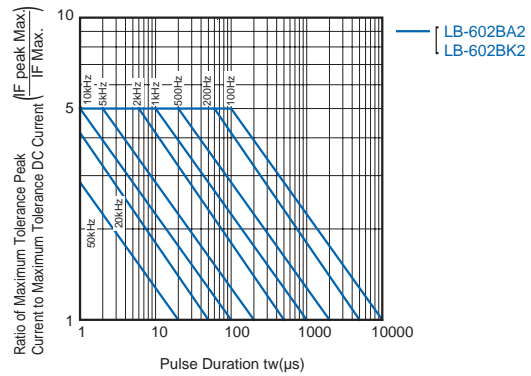


Fig.4 Ratio of Maximum Tolerable Peak Current - Pulse Duration (I)

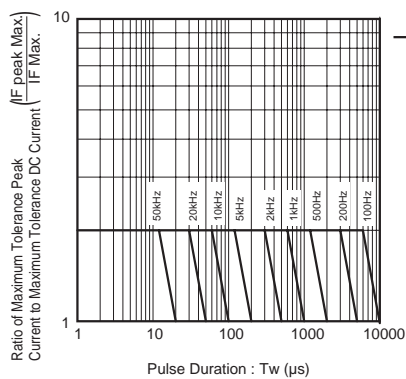


Fig.5 Ratio of Maximum Tolerable Peak Current - Pulse Duration (II)

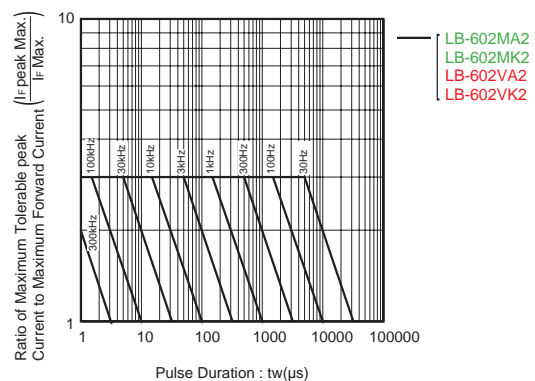


Fig.6 Ratio of Maximum Tolerable Peak Current - Pulse Duration (III)

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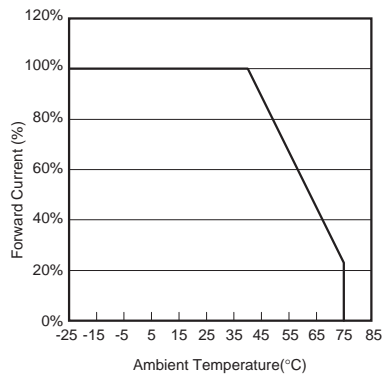


Fig.7 Derating

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