



LIGITEK

LIGITEK ELECTRONICS CO.,LTD.  
Property of Ligitek Only

---

DOT MATRIX DIGIT LED DISPLAY (4.0Inch)

**LMD5741/2BE-XX**

**DATA SHEET**

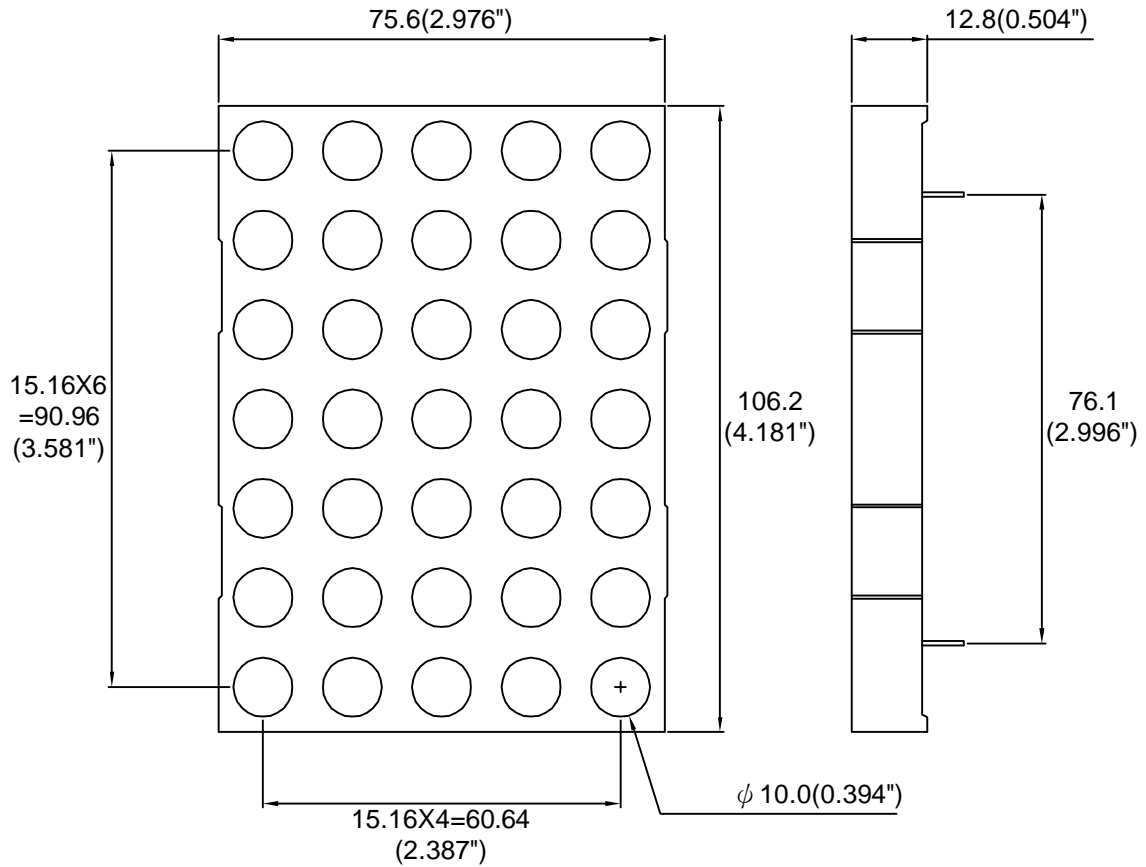
DOC. NO : QW0905-LMD5741/2BE-XX

REV. : A

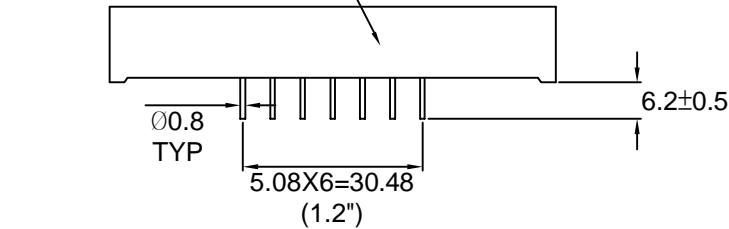
DATE : 09 - Feb. - 2006



Package Dimensions



LMD5741/2BE-XX  
LIGITEK



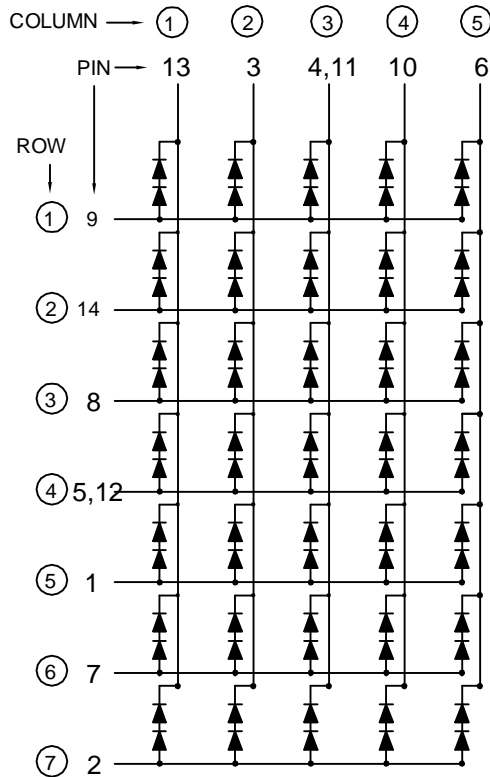
PIN NO.1 →

Note : 1.All dimension are in millimeters and (Inch) tolerance is  $\pm 0.25$ mm unless otherwise noted.  
2.Specifications are subject to change without notice.

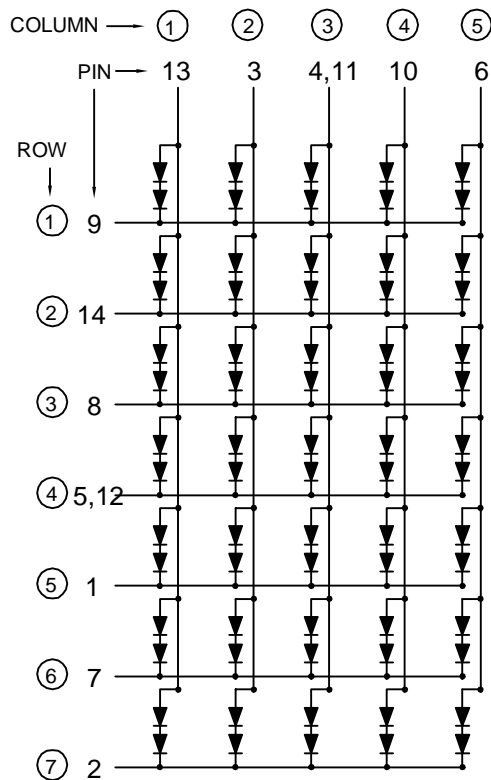


### Internal Circuit Diagram

LMD5741BE-XX



LMD5742BE-XX





### Electrical Connection

| PIN NO. | LMD5741BE-XX     | PIN NO. | LMD5742BE-XX   |
|---------|------------------|---------|----------------|
| 1       | Anode Row 5      | 1       | Cathode Row 5  |
| 2       | Anode Row 7      | 2       | Cathode Row 7  |
| 3       | Cathode Column 2 | 3       | Anode Column 2 |
| 4       | Cathode Column 3 | 4       | Anode Column 3 |
| 5       | Anode Row 4      | 5       | Cathode Row 4  |
| 6       | Cathode Column 5 | 6       | Anode Column 5 |
| 7       | Anode Row 6      | 7       | Cathode Row 6  |
| 8       | Anode Row 3      | 8       | Cathode Row 3  |
| 9       | Anode Row 1      | 9       | Cathode Row 1  |
| 10      | Cathode Column 4 | 10      | Anode Column 4 |
| 11      | Cathode Column 3 | 11      | Anode Column 3 |
| 12      | Anode Row 4      | 12      | Cathode Row 4  |
| 13      | Cathode Column 1 | 13      | Anode Column 1 |
| 14      | Anode Row 2      | 14      | Cathode Row 2  |



## Absolute Maximum Ratings at Ta=25 °C

| Parameter  | Symbol | Ratings   | UNIT    |
|--|--------|-----------|---------|
|  |        | E         |         |
| Forward Current Per Chip   | IF     | 30        | mA      |
| Peak Forward Current Per Chip (Duty 1/10,0.1ms Pulse Width)              | IFP    | 120       | mA      |
| Power Dissipation Per Chip   | PD     | 100       | mW      |
| Reverse Current Per Any Chip   | Ir     | 10        | $\mu A$ |
| Operating Temperature  | Topr   | -25 ~ +85 | °C      |
| Storage Temperature  | Tstg   | -25 ~ +85 | °C      |
| Solder Temperature 1/16 Inch Below Seating Plane For 3 Seconds At 260 °C |        |           |         |

## Part Selection And Application Information(Ratings at 25°C)

| PART NO      | CHIP      |         | common cathode or anode | $\lambda P$ (nm) | $\Delta \lambda$ (nm) | Electrical |      |      |         |      | IV-M |
|--------------|-----------|---------|-------------------------|------------------|-----------------------|------------|------|------|---------|------|------|
|              | Material  | Emitted |                         |                  |                       | Vf(v)      |      |      | Iv(mcd) |      |      |
|              |           |         |                         |                  |                       | Min.       | Typ. | Max. | Min.    | Typ. |      |
| LMD5741BE-XX | GaAsP/GaP | Orange  | Common Cathode          | 635              | 45                    | 3.4        | 4.2  | 5.2  | 7.2     | 12.8 | 2:1  |
| LMD5742BE-XX |           |         | Common Anode            |                  |                       |            |      |      |         |      |      |

- Note : 1.The forward voltage data did not including  $\pm 0.1V$  testing tolerance.  
2. The luminous intensity data did not including  $\pm 15\%$  testing tolerance.



Test Condition For Each Parameter

| Parameter                         | Symbol           | Unit    | Test Condition |
|-----------------------------------|------------------|---------|----------------|
| Forward Voltage Per Chip          | Vf               | volt    | If=20mA        |
| Luminous Intensity Per Chip       | Iv               | mcd     | If=10mA        |
| Peak Wavelength                   | $\lambda p$      | nm      | If=20mA        |
| Spectral Line Half-Width          | $\Delta \lambda$ | nm      | If=20mA        |
| Reverse Current Any Chip          | Ir               | $\mu A$ | Vr=5V          |
| Luminous Intensity Matching Ratio | IV-M             |         |                |



### Typical Electro-Optical Characteristics Curve

E CHIP

Fig.1 Forward current vs. Forward Voltage

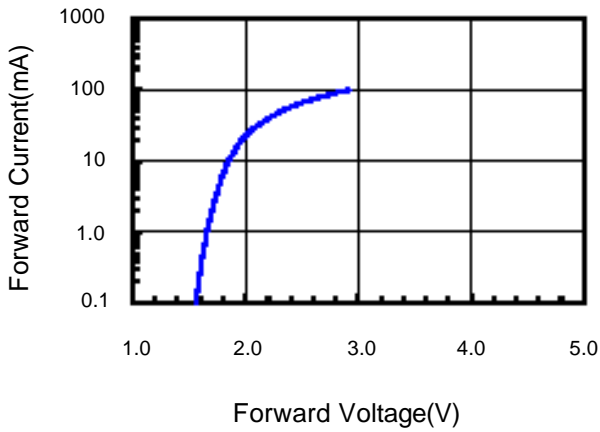


Fig.2 Relative Intensity vs. Forward Current

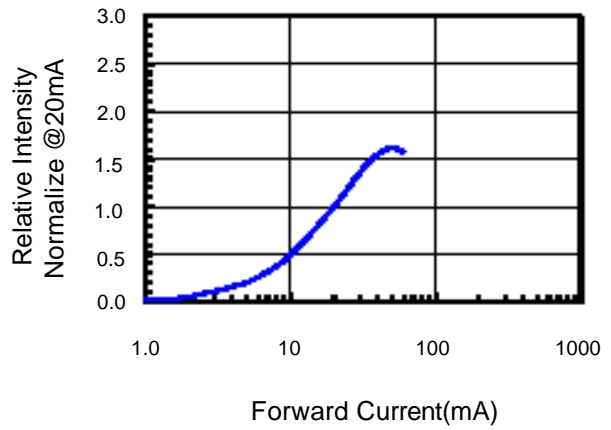


Fig.3 Forward Voltage vs. Temperature

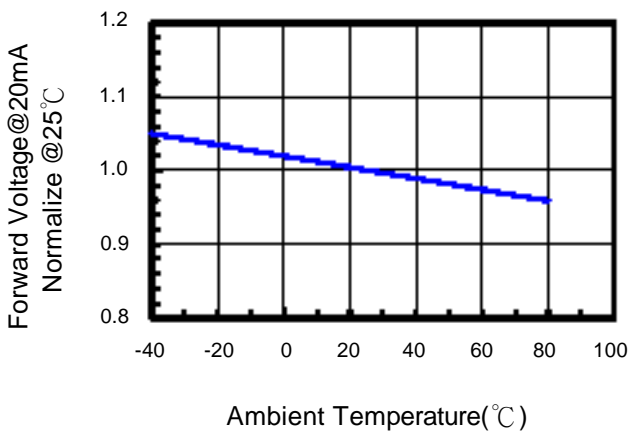


Fig.4 Relative Intensity vs. Temperature

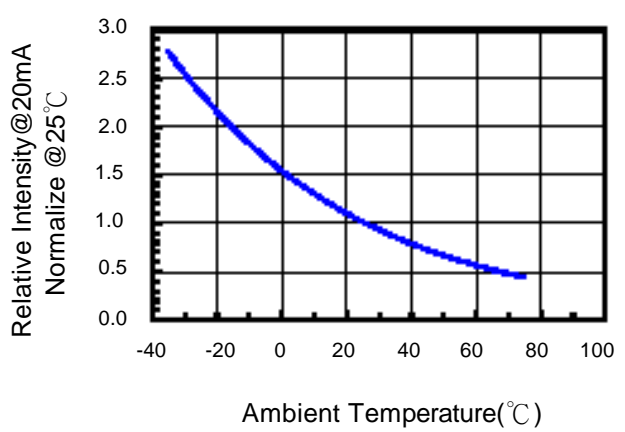
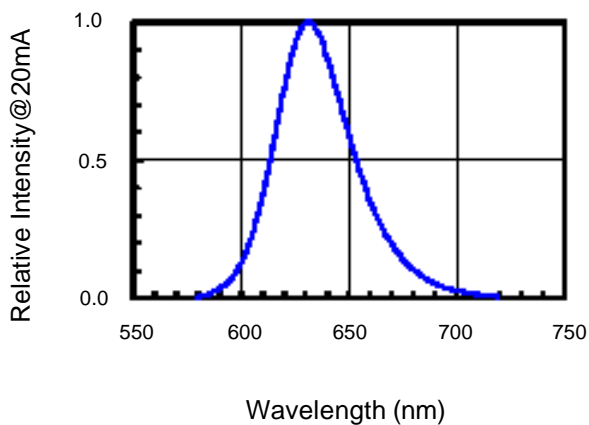


Fig.5 Relative Intensity vs. Wavelength





Reliability Test:

| Test Item                           | Test Condition   | Description   | Reference Standard   |
|-------------------------------------|--|---|--|
| Operating Life Test                 | 1.Under Room Temperature<br>2.If=10mA<br>3.t=1000 hrs (-24hrs, +72hrs) | This test is conducted for the purpose of determining the resistance of a part in electrical and thermal stressed.  | MIL-STD-750: 1026<br>MIL-STD-883: 1005<br>JIS C 7021: B-1                      |
| High Temperature Storage Test       | 1.Ta=105 °C±5°C<br>2.t=1000 hrs (-24hrs, +72hrs)                       | The purpose of this is the resistance of the device which is laid under condition of high temperature for hours.  | MIL-STD-883:1008<br>JIS C 7021: B-10   |
| Low Temperature Storage Test        | 1.Ta=-40 °C±5°C<br>2.t=1000 hrs (-24hrs, +72hrs)                       | The purpose of this is the resistance of the device which is laid under condition of low temperature for hours.   | JIS C 7021: B-12   |
| High Temperature High Humidity Test | 1.Ta=65 °C±5°C<br>2.RH=90%~95%<br>3.t=240hrs ±2hrs                     | The purpose of this test is the resistance of the device under tropical for hours.  | MIL-STD-202:103B<br>JIS C 7021: B-11   |
| Thermal Shock Test                  | 1.Ta=105 °C±5°C & -40 °C±5°C (10min) (10min)<br>2.total 10 cycles      | The purpose of this is the resistance of the device to sudden extreme changes in high and low temperature.  | MIL-STD-202: 107D<br>MIL-STD-750: 1051<br>MIL-STD-883: 1011                    |
| Solder Resistance Test              | 1.T.Sol=260 °C±5°C<br>2.Dwell time= 10 ±1sec.                          | This test intended to determine the thermal characteristic resistance of the device to sudden exposures at extreme changes in temperature when soldering the lead wire. | MIL-STD-202: 210A<br>MIL-STD-750: 2031<br>JIS C 7021: A-1                      |
| Solderability Test                  | 1.T.Sol=230 °C±5°C<br>2.Dwell time=5 ±1sec                             | This test intended to see soldering well performed or not.  | MIL-STD-202: 208D<br>MIL-STD-750: 2026<br>MIL-STD-883: 2003<br>JIS C 7021: A-2 |