

# **SPECIFICATIONS FOR LED DISPLAYS**

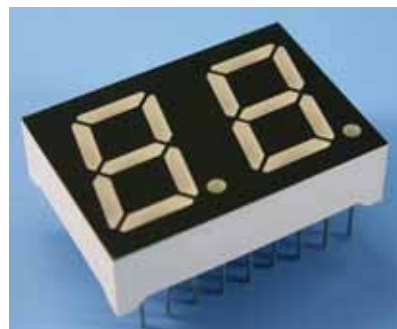
**13.2mm(0.52") Seven Segments Dual Digit**

**LDD052 -10 Series**

**WENRUN OPTOELECTRONIC**

**Features:**

- High efficiency, low power consumption.
- Extremely low current.
- Luminous evenly distributed on each segment.
- Low development cost.

**LDD052A/B -10****Descriptions:**

- Industrial standard size.
- These display provide excellent reliability in bright ambient light.
- These devices are made with white segments and black surface.

**Applications:**

- Audio equipment or Instrument panels.
- General use for digital indicators.
- Multimedia product.

**Selection Guide:**

| Part No.     |              | Chip      |                | Lens Color     |
|--------------|--------------|-----------|----------------|----------------|
| Anode        | Cathode      | Material  | Emitting Color |                |
| LDD052BSR-10 | LDD052ASR-10 | GaAlAs    | Super Red      | White Diffused |
| LDD052BG-10  | LDD052AG-10  | GaP       | Green          |                |
| LDD052BY-10  | LDD052AY-10  | GaAsP/GaP | Yellow         |                |

**Absolute Maximum Rating ( Ta=25 )**

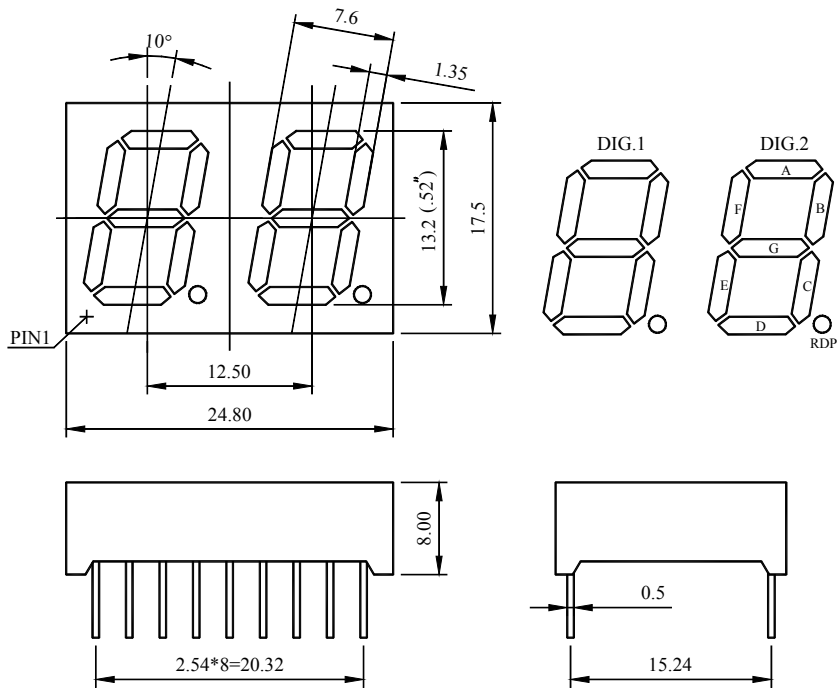
| Parameter  | Symbol    | Super Red | Green | Yellow | Unit |
|--|-----------|-----------|-------|--------|------|
| Power Dissipation/Segment                          | $P_d$     | 50        | 60    | 60     | mW   |
| Peak Forward Current /Segment<br>(Duty 1/10@ 1KHz) | $I_{FP}$  | 70        | 70    | 70     | mA   |
| Continuous Forward Current<br>/Segment             | $I_F$     | 20        | 20    | 20     | mA   |
| Recommend use current<br>/Segment                  | $I_F$     | 5~10      | 5~10  | 5~10   | mA   |
| Reverse Voltage /Segment                           | $V_R$     | 5         | 5     | 5      | V    |
| Operating Temperature Range                        | $T_{opr}$ | -25~ +75  |       |        |      |
| Storage Temperature Range                          | $T_{stg}$ | -30 ~ +85 |       |        |      |
| Solder Temperature                                 | $T_{sol}$ | 260 ± 5   |       |        |      |

- Notes :** 1、 This is the limit current . It is not allowed to use when the product work continuously.  
 2、 It is recommended that the product is driven by TTL,CMOS.  
 3、 Soldering time 5 seconds.

**Electrical Optical Characteristics ( Ta=25 )**

| Parameter                      | Symbol      | Super Red |      | Green |      | Yellow |      | Unit | Test Condition |
|--------------------------------|-------------|-----------|------|-------|------|--------|------|------|----------------|
|                                |             | Typ.      | Max. | Typ.  | Max. | Typ.   | Max. |      |                |
| Luminous Intensity<br>/Segment | $I_v$       | 11.6      | --   | 5.8   | --   | 5.8    | --   | mcd  | $I_F=10mA$     |
| Forward Voltage<br>/Segment    | $V_F$       | 1.85      | 2.3  | 2.2   | 2.5  | 2.0    | 2.5  | V    | $I_F=20mA$     |
| Reverse Current<br>/Segment    | $I_R$       | --        | 50   | --    | 50   | --     | 50   | uA   | $V_R=5V$       |
| Dominant<br>Wavelength         | $\lambda_d$ | 645       | --   | 565   | --   | 585    | --   | nm   | $I_F=20mA$     |
| Spectral Line Half<br>Width    |             | 30        | --   | 30    | --   | 30     | --   | nm   | $I_F=20mA$     |

**Package Dimensions:**

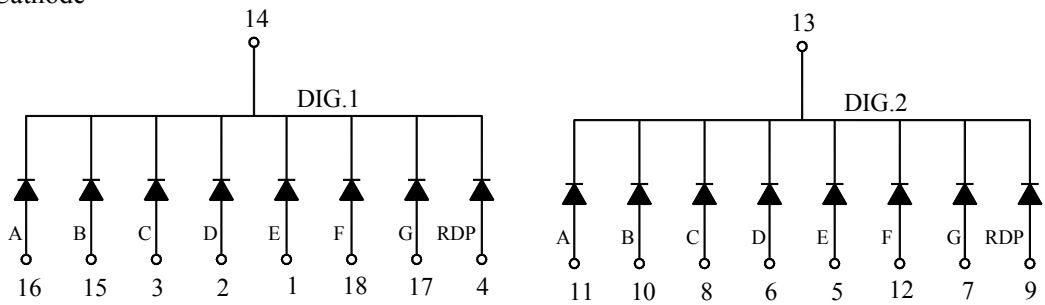


**NOTES :**

- All dimensions are in millimetres (mm), Tolerance is  $\pm 0.25\text{mm}$  unless otherwise noted.
- Specifications are subject to change without notice.

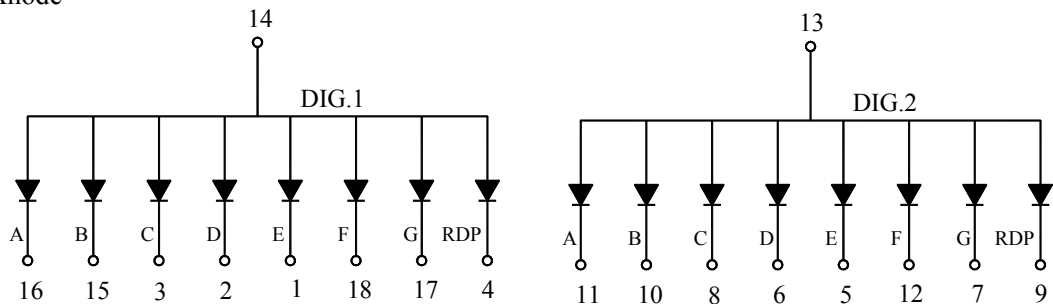
**Internal Circuit:**

Common Cathode



**LDD052A**

Common Anode



**LDD052B**

### Reliability Test Items and Conditions

| NO | Test Item            | Test Conditions                             | Duration  | Sample | Ac/Re |
|----|----------------------|---|-----------|--------|-------|
| 1  | Temperature Cycle    | -30 ~ 25 ~ 85 ~ 25<br>30min 5min 30min 5min | 50cycles  | 100    | 0/1   |
| 2  | High Temp. Storage   | Ta=85                                       | 1000hours | 100    | 0/1   |
| 3  | Temp.& Humidity Test | Ta=85<br>RH=85%                             | 1000hours | 100    | 0/1   |
| 4  | Low Temp. Storage    | Ta=-30                                      | 1000hours | 100    | 0/1   |
| 5  | Operating Life Test  | Ta=25 ± 5<br>DC IF=15mA                     | 1000hours | 100    | 0/1   |
| 6  | Solder Heat          | Tsol=260 ± 5 , 10s                          | 1times    | 20     | 0/1   |

### Typical Electro-Optical Characteristics Curves

