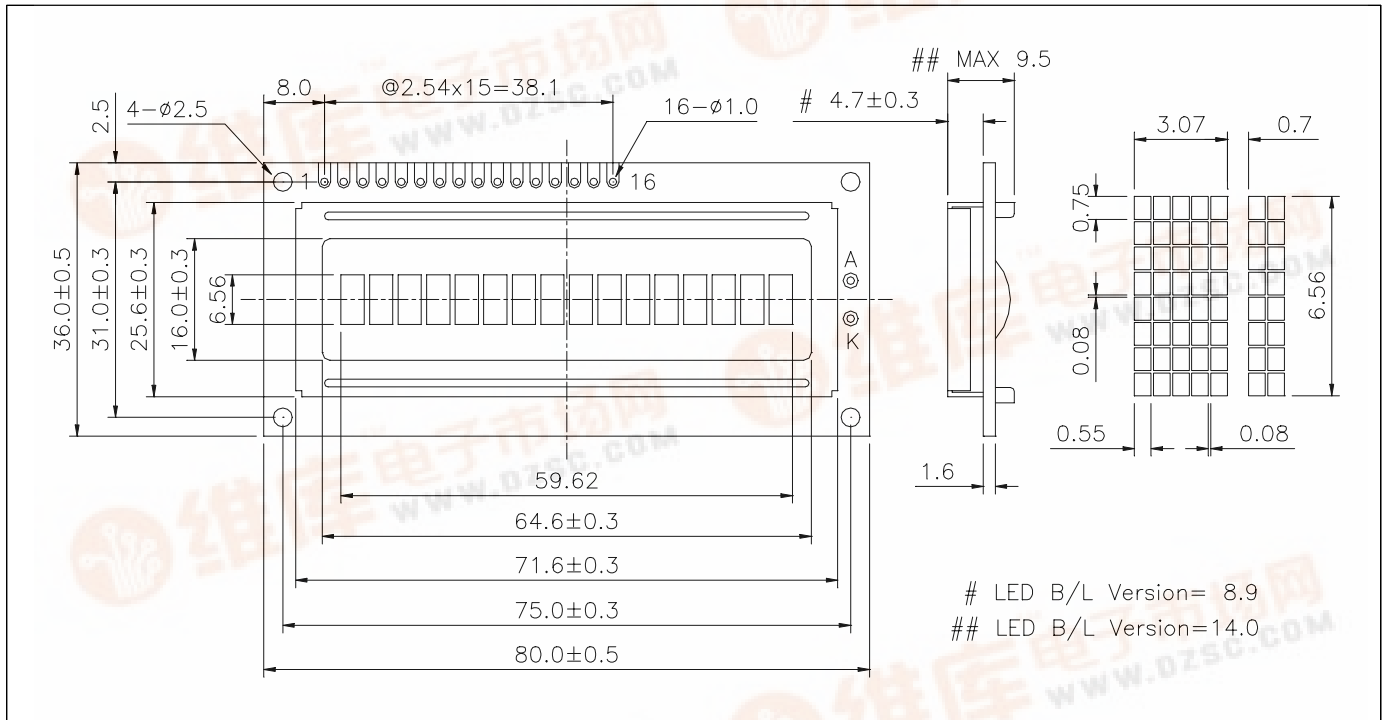


# LC1611

16 characters x 1 line



## ABSOLUTE MAXIMUM RATINGS

| Item                  | Symbol                            | Min. | Max.                  | Unit |
|-----------------------|-----------------------------------|------|-----------------------|------|
| Supply Voltage(Logic) | V <sub>DD</sub> - V <sub>SS</sub> | -0.3 | 7.0                   | V    |
| Supply Voltage(LCD)   | V <sub>DD</sub> - V <sub>O</sub>  | -0.3 | 13.0                  | V    |
| Input Voltage         | V <sub>I</sub>                    | -0.3 | V <sub>DD</sub> + 0.3 | V    |
| Operating Temp.       | T <sub>opr</sub>                  | -20  | 70                    | °C   |
| Storage Temp.         | T <sub>stg</sub>                  | -30  | 80                    | °C   |

## MECHANICAL DATA

| Item                      | Nominal Dimensions     | Unit |
|---------------------------|------------------------|------|
| Module Size ( W x H x T ) | 80.0 x 36.0 x 9.5/14.0 | mm   |
| Viewing Area ( W x H )    | 64.6 x 16.0            | mm   |
| Character Size ( W x H )  | 3.07 x 6.56            | mm   |
| Dot Size ( W x H )        | 0.55 x 0.75            | mm   |
| Weight (Reflective/LED)   | Approx. 26 / 36        | g    |

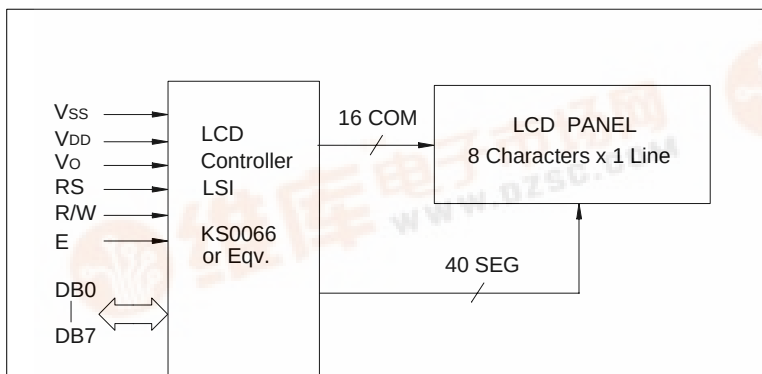
## ELECTRICAL CHARACTERISTICS ( V<sub>DD</sub>=5V±0.25V )

| Item                | Symbol                           | Test Condition            | Min.  | Typ. | Max.            | Unit |
|---------------------|----------------------------------|---------------------------|-------|------|-----------------|------|
| Input High Voltage  | V <sub>IH</sub>                  | --                        | 2.2   | --   | V <sub>DD</sub> | V    |
| Input Low Voltage   | V <sub>IL</sub>                  | --                        | - 0.3 | --   | 0.6             | V    |
| Output High Voltage | V <sub>OH</sub>                  | I <sub>OH</sub> = - 0.2mA | 2.4   | --   | V <sub>DD</sub> | V    |
| Output Low Voltage  | V <sub>OL</sub>                  | I <sub>OL</sub> = 1.2mA   | 0     | --   | 0.4             | V    |
| Supply Current      | I <sub>DD</sub>                  | V <sub>DD</sub> = 5.0V    | --    | 1.2  | 3.0             | mA   |
| LCD Driving Voltage | V <sub>DD</sub> - V <sub>O</sub> | T <sub>a</sub> =25°C      | --    | 4.6  | --              | V    |

## PIN CONNECTIONS

| Pin | Symbol          | Level | Function                                                                                                                      |
|-----|-----------------|-------|-------------------------------------------------------------------------------------------------------------------------------|
| 1   | V <sub>SS</sub> | 0V    | GND                                                                                                                           |
| 2   | V <sub>DD</sub> | +5V   | Power supply for logic                                                                                                        |
| 3   | V <sub>O</sub>  | --    | Operating voltage for LCD                                                                                                     |
| 4   | RS              | H/L   | H : Data<br>L : Instruction code                                                                                              |
| 5   | R/W             | H/L   | H : Read<br>L : Write                                                                                                         |
| 6   | E               | H,H>L | Enable signal                                                                                                                 |
| 7   | DB0             | H/L   | In 8-bit bus mode, used as low order bidirectional data bus.<br>In 4-bit bus mode, open these pins.                           |
| 8   | DB1             | H/L   |                                                                                                                               |
| 9   | DB2             | H/L   |                                                                                                                               |
| 10  | DB3             | H/L   |                                                                                                                               |
| 11  | DB4             | H/L   | In 8-bit bus mode, used as high order bidirectional data bus.<br>In 4-bit bus mode, used as both high and low order data bus. |
| 12  | DB5             | H/L   |                                                                                                                               |
| 13  | DB6             | H/L   |                                                                                                                               |
| 14  | DB7             | H/L   |                                                                                                                               |
| 15  | LEDA            | +5V   | Power supply for LED backlight                                                                                                |
| 16  | LEDK            | 0V    |                                                                                                                               |

## BLOCK DIAGRAM



## LED BACKLIGHT SPECIFICATIONS (T<sub>a</sub>=25°C)

| Item                 | Symbol         | Typ. | Max. | Unit |
|----------------------|----------------|------|------|------|
| Forward Voltage      | V <sub>f</sub> | 4.1  | 4.3  | V    |
| Forward Current      | I <sub>f</sub> | 120  | --   | mA   |
| Emission Wave Length | λ <sub>p</sub> | 568  | --   | nm   |