

## ABSOLUTE MAXIMUM RATINGS

| Item                  | Symbol                            | Min. | Max.                  | Unit |
|-----------------------|-----------------------------------|------|-----------------------|------|
| Supply Voltage(Logic) | V <sub>DD</sub> - V <sub>SS</sub> | -0.3 | 6.0                   | 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>                  | -20  | 80                    | °C   |

## MECHANICAL DATA

| Item                      | Nominal Dimensions | Unit |
|---------------------------|--------------------|------|
| Module Size ( W x H x T ) | 84.0 x 44.0 x 13.5 | mm   |
| Viewing Area ( W x H )    | 60.5 x 18.5        | mm   |
| Dot Pitch ( W x H )       | 0.44 x 0.49        | mm   |
| Dot Size ( W x H )        | 0.40 x 0.45        | mm   |
| Weight                    | Approx. 36         | g    |

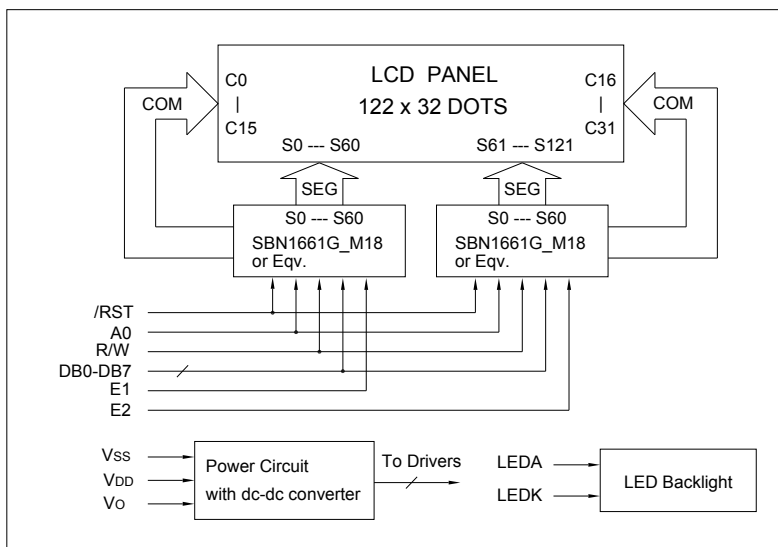
## ELECTRICAL CHARACTERISTICS ( V<sub>DD</sub> =5V±0.1V )

| Item                | Symbol                           | Test Condition         | Min.                 | Typ. | Max.            | Unit |
|---------------------|----------------------------------|------------------------|----------------------|------|-----------------|------|
| Input High Voltage  | V <sub>IH</sub>                  | --                     | 3.0                  | --   | V <sub>DD</sub> | V    |
| Input Low Voltage   | V <sub>IL</sub>                  | --                     | 0                    | --   | 1.1             | V    |
| Output High Voltage | V <sub>OH</sub>                  | --                     | V <sub>DD</sub> -0.3 | --   | V <sub>DD</sub> | V    |
| Output Low Voltage  | V <sub>OL</sub>                  | --                     | 0                    | --   | 0.3             | V    |
| Supply Current      | I <sub>DD</sub>                  | V <sub>DD</sub> = 5.0V | --                   | 0.6  | 1.0             | mA   |
| LCD Driving Voltage | V <sub>DD</sub> - V <sub>O</sub> | T <sub>a</sub> =25°C   | --                   | 6.5  | --              | 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   | A0              | H/L   | H : Data<br>L : Instruction code  |
| 5   | E1              | H,H>L | Enable signal 1                   |
| 6   | E2              | H,H>L | Enable signal 2                   |
| 7   | R/W             | H/L   | H : Read<br>L : Write             |
| 8   | DB0             | H/L   | Data bus                          |
| 9   | DB1             | H/L   |                                   |
| 10  | DB2             | H/L   |                                   |
| 11  | DB3             | H/L   |                                   |
| 12  | DB4             | H/L   |                                   |
| 13  | DB5             | H/L   |                                   |
| 14  | DB6             | H/L   |                                   |
| 15  | DB7             | H/L   |                                   |
| 16  | /RST            | L>H   | Reset signal. Active rising edge. |
| 17  | LEDA            | 5V    | Power supply for LED backlight    |
| 18  | LEDK            | 0V    |                                   |

## BLOCK DIAGRAM



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

| Item            | Symbol         | Typ.         | Max. | Unit |
|-----------------|----------------|--------------|------|------|
| Forward Voltage | V <sub>f</sub> | 2.9          | 3.0  | V    |
| Forward Current | I <sub>f</sub> | 18           | --   | mA   |
| LED Color       |                | Yellow Green |      |      |