### *Mechanical Data*

| Item | Standard Value | Unit |
|---|---|---|
| Module Dimension | 80.0x36.0 | mm |
| Viewing Area | 60.0x18.0 | mm |
| Mounting hole | 75.0x28.0 | mm |
| Dot Pitch | 0.44x0.49 | mm |

### *Absolute Maximum Rating*

| Item | Symbol | Standard Value | | | Unit |
|---|---|---|---|---|---|
| | | min. | typ. | max. | |
| Power Supply | VDD-VSS | 4.75 | 5 | 5.25 | V |
| Input Voltage | VI | 0 | --- | VDD | V |

Note : VSS=0 Volt, VDD=5.0 Volt.

### *Electronical Characteristics*

| Item | Symbol | Condition | Standard Value | | | Unit |
|---|---|---|---|---|---|---|
| | | | min. | typ. | max. | |
| Input Voltage | VDD | VDD=+5V | 4.5 | 5.0 | 5.5 | V |
| Supply Current | IDD | VDD=5V | --- | 1.0 | 1.4 | mA |
| Recommended LC Driving Voltage for Normal Temp. Version module | VDD-V0 | -20°C | 4.9 | 5.0 | 5.1 | V |
| | | 0°C | 4.7 | 4.8 | 4.9 | |
| | | 25°C | 4.6 | 4.7 | 4.8 | |
| | | 50°C | 4.3 | 4.4 | 4.7 | |
| | | 70°C | 4.1 | 4.2 | 4.5 | |
| LED Forward Voltage | VF | 25°C | --- | 4.2 | 4.6 | V |
| LED Forward Current | IF | 25°C | --- | 120 | 240 | mA |
| EL Power Supply Current | IEL | Vel=110VAC;400Hz | --- | --- | 5.0 | mA |

### *Feature*

1. Available forExternal (E type), internal (E1 type) oscilation 2KHz
2. Built-in controller Avant (SBN1661G) or equivalent
3. 1/32 duty cycle
4. N.V. optional for +3V power supply

| Pin NO. | Symbol | Function |
|---|---|---|
| 1 | Vss | GND |
| 2 | Vdd | Power supply for logic |
| 3 | Vo | Contrast Adjustment |
| 4 | Ao | H→Data L→Instruction |
| 5 | CS1 | L→Chip1 Enable |
| 6 | CS2 | L→Chip2 Enable |
| 7 | CL/NV | E type:External clock 2KHz E1 type:Negative Voltage Option |
| 8 | E/NC | E type:Enable Signal E1 type:No connection |
| 9 | R/$\overline{W}$ | H: read data L: write data |
| 10 | DB0 | Data bus line |
| 11 | DB1 | Data bus line |
| 12 | DB2 | Data bus line |
| 13 | DB3 | Data bus line |
| 14 | DB4 | Data bus line |
| 15 | DB5 | Data bus line |
| 16 | DB6 | Data bus line |
| 17 | DB7 | Data bus line |
| 18 | RES | H→L Reset the LCM |
| 19 | A/Vee | E type: +4.2V for LED/Negative Voltage output E1 type:A |
| 20 | K | Power supply for B/L |

Graphic type

## RG12232E/E1 Graphic 122x32 dots

### Dimension drawing