

ABSOLUTE MAXIMUM RATINGS

| Item | Symbol | Min. | Max. | Unit |
|-------------------------|-----------------------------------|------|-----------------------|------|
| Supply Voltage(L logic) | V _{DD} - V _{SS} | -0.3 | 5.5 | V |
| Supply Voltage(LCD) | V _O - V _{SS} | -0.3 | 7.0 | V |
| Input Voltage | V _I | -0.3 | V _{DD} + 0.3 | V |
| Operating Temp. | T _{opr} | -20 | 70 | °C |
| Storage Temp. | T _{stg} | -30 | 80 | °C |

MECHANICAL DATA

| Item | Nominal Dimensions | Unit |
|---------------------------|--------------------------|------|
| Module Size (W x H x T) | 116.0 x 44.0 x 10.0/14.0 | mm |
| Viewing Area (W x H) | 99.0 x 24.0 | mm |
| Dot Pitch (W x H) | 0.59 x 0.60 | mm |
| Dot Size(W x H) | 0.55 x 0.56 | mm |
| Weight (Reflective/LED) | Approx. 50 / 65 | g |

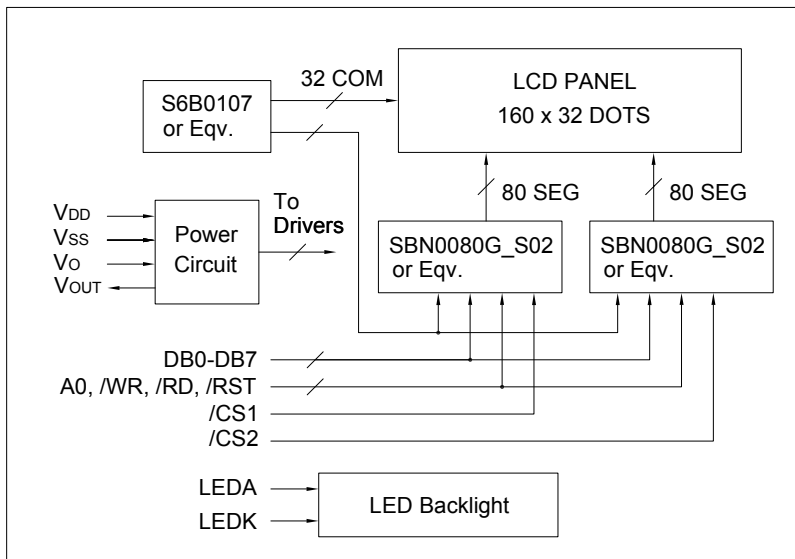
ELECTRICAL CHARACTERISTICS (V_{DD}=5V±0.25V)

| Item | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---------------------|----------------------------------|------------------------|----------------------|------|---------------------|------|
| Input High Voltage | V _{IH} | -- | 0.7V _{DD} | -- | V _{DD} | V |
| Input Low Voltage | V _{IL} | -- | 0 | -- | 0.25V _{DD} | V |
| Output High Voltage | V _{OH} | -- | V _{DD} -0.3 | -- | V _{DD} | V |
| Output Low Voltage | V _{OL} | -- | 0 | -- | 0.3 | V |
| Supply Current | I _{DD} | V _{DD} = 5.0V | -- | 4.5 | 6.0 | mA |
| LCD Driving Voltage | V _{DD} - V _O | T _a =25°C | -- | 7.2 | -- | V |

PIN CONNECTIONS

| Pin | Symbol | Level | Function |
|-----|------------------|-------|-------------------------------------|
| 1 | A0 | H/L | H : Data L : Instruction code |
| 2 | /CS2 | L | Chip selection for IC2. Active "L". |
| 3 | /CS1 | L | Chip selection for IC1. Active "L". |
| 4 | /RD(E) | H/L | /RD for 80 MPU, E for 68 MPU |
| 5 | /WR(R/W) | H/L | /WR for 80 MPU, R/W for 68 MPU |
| 6 | V _{DD} | +5V | Power supply for logic |
| 7 | V _{SS} | 0V | GND |
| 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 | H/L | Reset. H→L:80 MPU, L→H:68 MPU |
| 17 | V _O | -- | Operating voltage for LCD |
| 18 | V _{OUT} | -5V | Output voltage for LCD driving |
| 19 | LEDA | +5V | Power supply for LED backlight |
| 20 | LEDK | 0V | |

BLOCK DIAGRAM



LED BACKLIGHT SPECIFICATIONS (T_a=25°C)

| Item | Symbol | Typ. | Max. | Unit |
|----------------------|----------------|------|------|------|
| Forward Voltage | V _f | 4.1 | 4.3 | V |
| Forward Current | I _f | 240 | -- | mA |
| Emission Wave Length | λ _p | 568 | -- | nm |