

ABSOLUTE MAXIMUM RATINGS

| Item | Symbol | Min. | Max. | Unit |
|-----------------------|------------------------------------|------|-----------------------|------|
| Supply Voltage(Logic) | V _{DD} - V _{SS} | -0.3 | 4.0 | V |
| Supply Voltage(LCD) | V _{OUT} - V _{SS} | -0.3 | 18.0 | 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) | 56.0 x 39.6 x 9.2 | mm |
| Viewing Area (W x H) | 50.4 x 28.0 | mm |
| Dot Pitch (W x H) | 0.33 x 0.33 | mm |
| Dot Size (W x H) | 0.31 x 0.31 | mm |
| Weight | Approx. 18 | g |

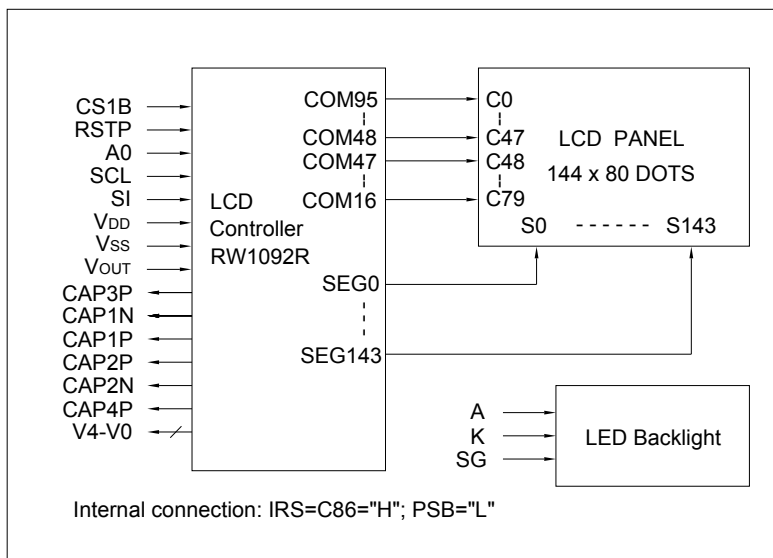
ELECTRICAL CHARACTERISTICS (V_{DD}=3.2V to 3.6V)

| Item | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---------------------|----------------------------------|--------------------------|--------------------|------|--------------------|------|
| Input High Voltage | V _{IH} | -- | 0.8V _{DD} | -- | V _{DD} | V |
| Input Low Voltage | V _{IL} | -- | 0 | -- | 0.2V _{DD} | V |
| Output High Voltage | V _{OH} | I _{OH} = -0.1mA | 0.8V _{DD} | -- | V _{DD} | V |
| Output Low Voltage | V _{OL} | I _{OL} = 0.1mA | 0 | -- | 0.2V _{DD} | V |
| Supply Current | I _{DD} | V _{DD} = 3.3V | -- | 0.6 | 1.5 | mA |
| LCD Driving Voltage | V ₀ - V _{SS} | T _a =25°C | -- | 10.5 | -- | V |

PIN CONNECTIONS

| Pin | Symbol | Level | Function |
|-----|------------------|-------------|-------------------------------------|
| 1 | V ₀ | -- | Power supply for LCD drive |
| 2 | V ₁ | -- | Power supply for LCD drive |
| 3 | V ₂ | -- | Power supply for LCD drive |
| 4 | V ₃ | -- | Power supply for LCD drive |
| 5 | V ₄ | -- | Power supply for LCD drive |
| 6 | CAP4P | -- | Capacitor 4 positive connection |
| 7 | CAP2N | -- | Capacitor 2 negative connection |
| 8 | CAP2P | -- | Capacitor 2 positive connection |
| 9 | CAP1P | -- | Capacitor 1 positive connection |
| 10 | CAP1N | -- | Capacitor 1 negative connection |
| 11 | CAP3P | -- | Capacitor 3 positive connection |
| 12 | V _{OUT} | -- | DC/DC voltage converter output |
| 13 | V _{SS} | 0V | GND |
| 14 | V _{DD} | 3.2 to 3.6V | Power supply for logic |
| 15 | SI | H/L | Serial data input |
| 16 | SCL | H/L | Serial clock input |
| 17 | A0 | H/L | H: Display data L: Instruction code |
| 18 | RSTP | L | Reset signal. Active "L". |
| 19 | CS1B | L | Chip selection signal. Active "L". |
| 20 | NC | -- | No connection |

BLOCK DIAGRAM



LED BACKLIGHT SPECIFICATIONS (T_a=25°C)

| Item | Symbol | Typ. | Max. | Unit |
|-----------------|----------------|-------|------|------|
| Forward Voltage | V _f | 3.1 | 3.3 | V |
| Forward Current | I _f | 45 | -- | mA |
| LED Color | | White | | |