

ABSOLUTE MAXIMUM RATINGS

| Item | Symbol | Min. | Max. | Unit |
|-----------------------|-----------------------------------|------|-----------------------|------|
| Supply Voltage(Logic) | V _{DD} - V _{SS} | -0.3 | 6.0 | V |
| Supply Voltage(LCD) | V _{DD} - V _O | -0.3 | 30.0 | 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) | 160.0 x 109.0 x 13.5 | mm |
| Viewing Area (W x H) | 122.0 x 92.0 | mm |
| Dot Pitch (W x H) | 0.36 x 0.36 | mm |
| Dot Size (W x H) | 0.33 x 0.33 | mm |
| Weight | Approx. 200 | g |

ELECTRICAL CHARACTERISTICS (V_{DD}=3.3V to 5.5V)

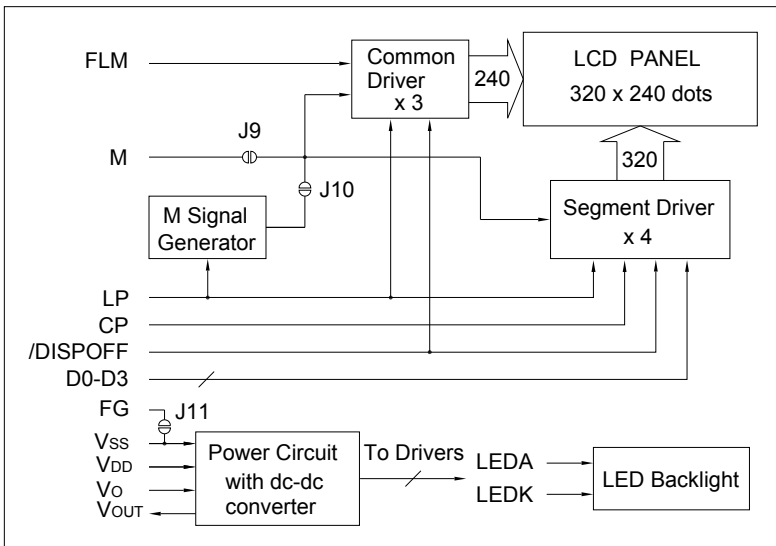
| Item | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---------------------|----------------------------------|------------------------|--------------------|------|--------------------|------|
| Input High Voltage | V _{IH} | -- | 0.8V _{DD} | -- | V _{DD} | V |
| Input Low Voltage | V _{IL} | -- | 0 | -- | 0.2V _{DD} | V |
| Supply Current | I _{DD} | V _{DD} = 5.0V | -- | 30.0 | 60.0 | mA |
| | I _{DD} | V _{DD} = 3.3V | -- | 40.0 | 80.0 | mA |
| LCD Driving Voltage | V _{DD} - V _O | T _a =25°C | -- | 22.7 | -- | V |

PIN CONNECTIONS (CN1/CN2/CN3)

| Pin | Symbol | Level | Function |
|-----|------------------|-------------|---|
| 1 | D0 | H/L | Data bus |
| 2 | D1 | H/L | |
| 3 | D2 | H/L | |
| 4 | D3 | H/L | |
| 5 | /DISPOFF | H/L | H: display on L: display off |
| 6 | FLM | H | Scan start-up pulse |
| 7 | M (NC) | -- | External M signal (J9 close and J10 open) or no connection (J9 open and J10 close). |
| 8 | LP | H>L | Display data latch pulse |
| 9 | CP | H>L | Display data shift pulse |
| 10 | V _{DD} | 3.3 to 5.5V | Power supply for logic |
| 11 | V _{SS} | 0V | GND |
| 12 | V _{OUT} | -22V | Output voltage for LCD driving |
| 13 | V _O | -- | Operating voltage for LCD |
| 14 | FGND | -- | Frame ground |
| 15 | LEDA | 5V | Power supply for LED backlight |
| 16 | LEDK | 0V | |

Note: CN3 is without Pin 15 and Pin 16 terminals

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 | 150 | -- | mA |
| LED Color | | White | | |