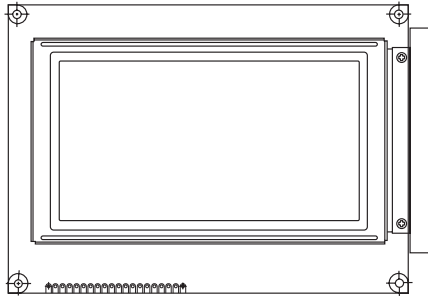


240 x 128 Dots Graphic LCD



FEATURES

- Built-in controller (T6963C)
- 1/240 duty cycle
- Built-in N/V
- Temperature compensation, option

| MECHANICAL DATA | | |
|------------------|----------------|------|
| ITEM | STANDARD VALUE | UNIT |
| Module Dimension | 144.0 x 104.0 | mm |
| Viewing Area | 114.0 x 64.0 | mm |
| Dot Size | 0.4 x 0.4 | mm |
| Dot Pitch | 0.45 x 0.45 | mm |

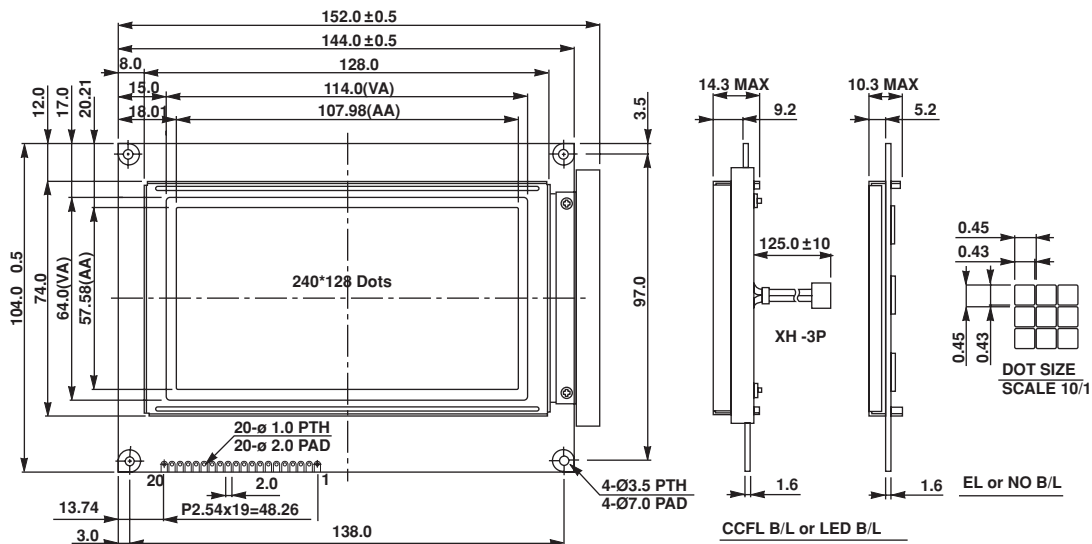
| ABSOLUTE MAXIMUM RATING | | | | | |
|-------------------------|---------|----------------|------|------|------|
| ITEM | SYMBOL | STANDARD VALUE | | | UNIT |
| | | MIN. | TYP. | MAX. | |
| Power Supply | VDD-VSS | 4.75 | 5.0 | 5.25 | V |
| Input Voltage | VI | - 0.3 | - | VDD | V |

NOTE: VSS = 0 Volt, VDD = 5.0 Volt

| ELECTRICAL SPECIFICATIONS | | | | | | |
|--|----------|---------------------|----------------|------|-------------|------|
| ITEM | SYMBOL | CONDITION | STANDARD VALUE | | | UNIT |
| | | | MIN. | TYP. | MAX. | |
| Input Voltage | VDD | L level | $0.7V_{DD}$ | - | V_{DD} | V |
| | VIO | H level | - | - | $0.3V_{DD}$ | V |
| Supply Current | IDD | VDD = + 5V | 0 | 55 | 60 | mA |
| Recommended LC Driving Voltage for Normal Temp. Version Module | VDD - V0 | 0°C | 20.3 | 21.4 | 22.5 | V |
| | | 25°C | 18.0 | 19.1 | 20.2 | |
| | | 50°C | 17.8 | 18.9 | 20.0 | |
| LED Forward Voltage | VF | 25°C | - | 4.2 | - | V |
| LED Forward Current | IF | 25°C | - | 900 | 1800 | mA |
| CCFL | VF | 25°C | - | 250 | 590 | Vms |
| | IF | 25°C | - | - | 5.5 | mA |
| EL | IEL | Vel = 110VAC; 400Hz | - | - | 5.0 | mA |

| PIN NUMBER | SYMBOL | FUNCTION |
|------------|--------------------|------------------------------|
| 1 | Vss | Power Supply (GND) |
| 2 | Vdd | Power Supply (+ 5V) |
| 3 | Vo | Power Supply for LCD Driving |
| 4 | C/D | Command/Data Read/Write |
| 5 | \overline{RD} | Data Read |
| 6 | \overline{WR} | Data Write |
| 7 | DB0 | Data Bus Line |
| 8 | DB1 | Data Bus Line |
| 9 | DB2 | Data Bus Line |
| 10 | DB3 | Data Bus Line |
| 11 | DB4 | Data Bus Line |
| 12 | DB5 | Data Bus Line |
| 13 | DB6 | Data Bus Line |
| 14 | DB7 | Data Bus Line |
| 15 | \overline{CE} | Chip Enable |
| 16 | \overline{RESET} | Reset Signal |
| 17 | Vee | Negative Voltage |
| 18 | MD2 | Control Signal |
| 19 | FS1 | Font Selection |
| 20 | NC | No Connection |

DIMENSIONS in millimeters





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