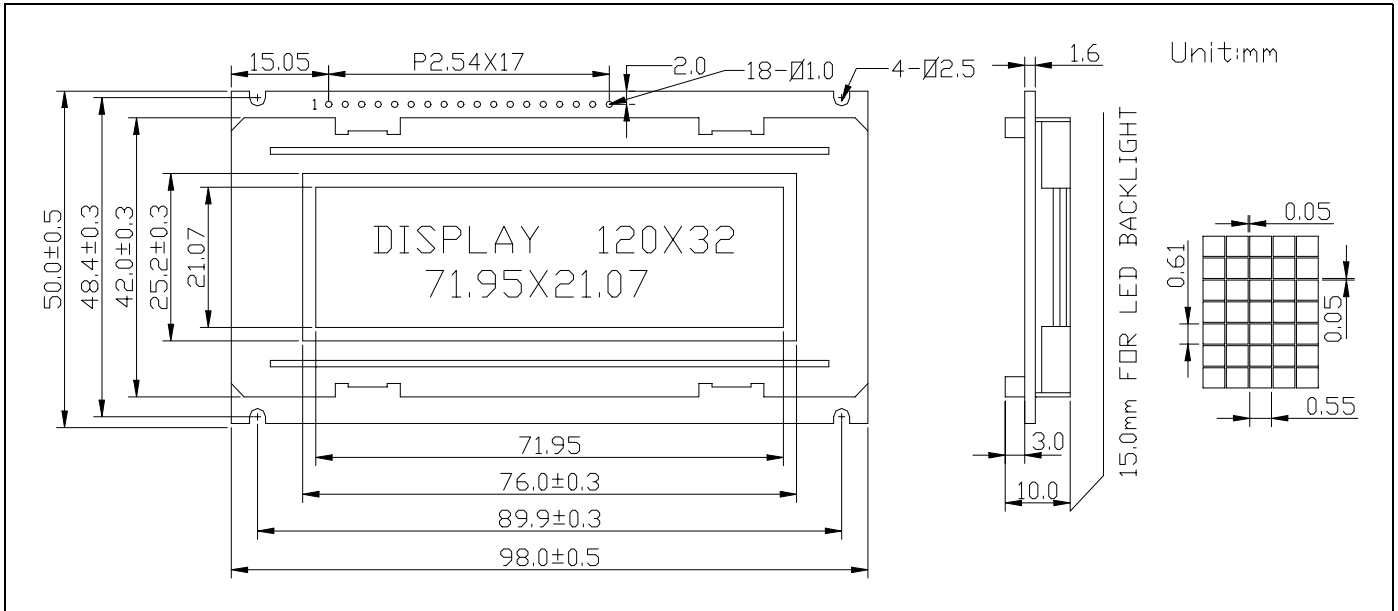




JM12032A

120DOTS×32DOTS
1/32 DUTY,1/7 BIAS

1 EXTERNAL DIMENSION



2 MECHANICAL DATA

| ITEM | SPECIFICATION | UNIT |
|---------------------|--------------------------|------|
| Module Size (W×H×T) | 98.0×50.0×10.0(LED:15.0) | mm |
| Viewing Area (W×H) | 76.0×25.2 | mm |
| Number of Dots(W×H) | 120×32 | dots |
| Dot Pitch (W×H) | 0.60×0.66 | mm |
| Dot Size(W×H) | 0.55×0.61 | mm |

5 ABSOLUTE MAXIMUM RATINGS

| PARAMETER | SYMBOL | MIN. | MAX. | UNIT |
|-----------------------|--------|----------|---------|------|
| Supply Voltage | Vdd | -0.3 | 7 | V |
| LCD Supply Voltage | Vee | Vdd-13.5 | 0 | V |
| Input Voltage | Vr | -0.3 | Vdd+0.3 | V |
| Operating Temperature | Top | 0 | 50 | °C |
| Storage Temperature | Tstg | -20 | 70 | °C |

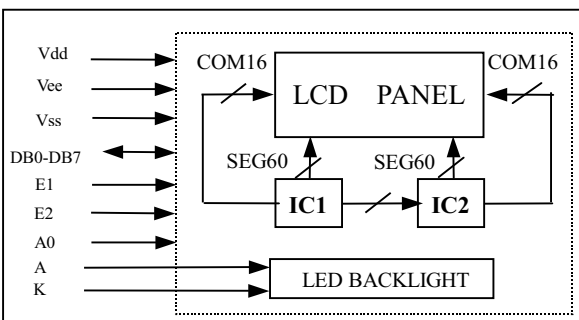
3 PIN CONNECTIONS

| PIN | SYMBOL | SIGNAL DESCRIPTION |
|-------|------------|---|
| 1 | Vss | GND |
| 2 | Vdd | Power Supply |
| 3 | Vee | Power Supply for LCD |
| 4 | A0 | H=Display data, L=Instruction |
| 5 | R/W | Read/Write Read when "H", Write when "L" |
| 6 | E1 | Enable for IC1 |
| 7 | E2 | Enable for IC2 |
| 8 | NC | No connection |
| 9to16 | DB0 to DB7 | Data Bus for 8bit Mode |
| 17 | A | Anode of LED Unit |
| 18 | K | Cathode of LED Unit |

6 ELECTRICAL CHARACTERISTICS(Ta=25°C)

| ITEM | SYMBOL | CONDITION | MIN. | TYP. | MAX. | UNIT |
|-----------------------|-----------------|-----------|--------|------|------|------|
| Supply Voltage(logic) | Vdd-Vss | - | 4.5 | 5.0 | 5.5 | V |
| Supply Current(logic) | Idd | Vdd=5.0 | - | 1.47 | - | mA |
| Driving Current(LCD) | Iee | Vee=-4.2 | - | 1.46 | - | mA |
| Driving Voltage(LCD) | Vdd-Vee | - | - | 9.2 | - | V |
| Input Voltage "H" | V _{IH} | H | 0.8Vdd | - | Vdd | V |
| Input Voltage "L" | V _{IL} | L | Vss | - | 0.8 | V |
| Output Voltage "H" | V _{OH} | H | 2.4 | - | - | V |
| Output Voltage "L" | V _{OL} | L | - | - | 0.4 | V |

4 BLOCK DIAGRAM



7 BOTTOM BACKLIGHT CHARACTERS(Ta=25°C)

| PARAMETER | SYMBOL | CONDITION | MIN. | TYP. | MAX. | UNIT |
|---------------------------------|------------------|---------------------------------|------|------|------|------|
| Supply Voltage | V _{LED} | - | - | 4.1 | - | V |
| LED Forward Consumption Current | I _f | Ta=25°C V _f =4.1V | - | 210 | - | mA |
| LED Allowable Dissipation | P _d | - | - | 880 | - | mW |