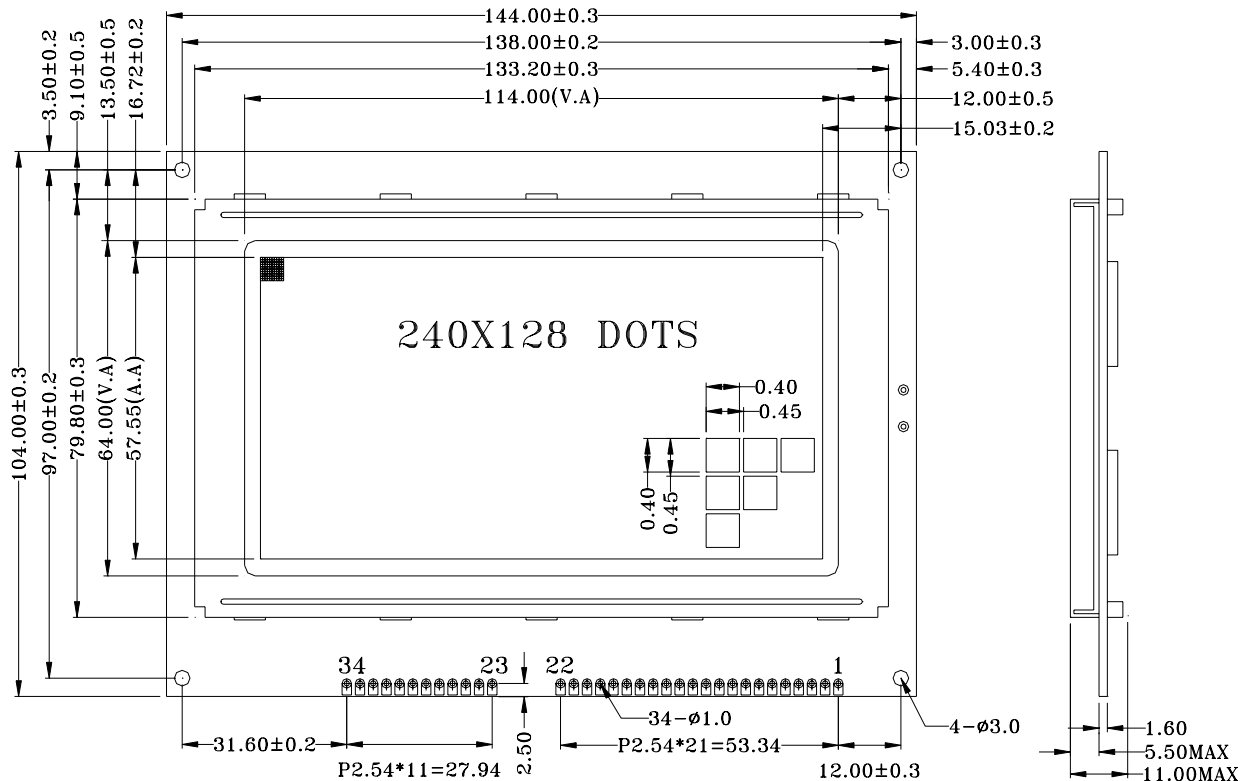


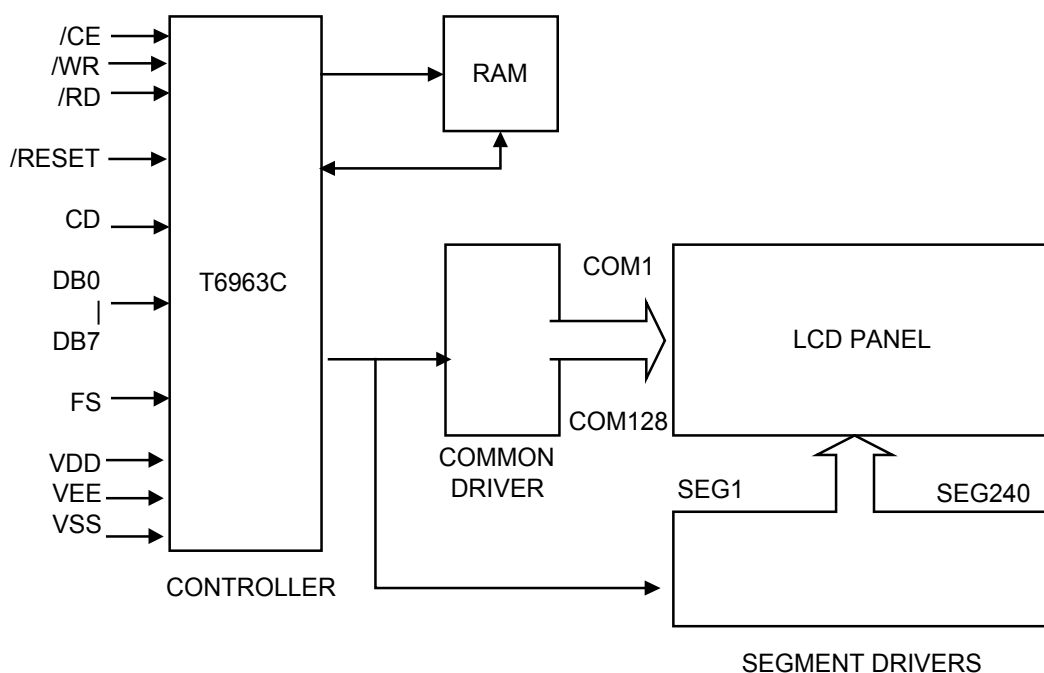
1 OUTLINE DIMENSION



2 PIN CONNECTIONS

| NO. | SYMBOL | FUNCTION |
|-------|-----------|---|
| 1 | FG | Frame Ground |
| 2 | VSS | Ground (0V) |
| 3 | VDD | Logic Supply Voltage(+5V) |
| 4 | VO | LCD Power Supply |
| 5 | /WR | Write data when WR = L |
| 6 | /RD | Read data when RD = L |
| 7 | /CE | Chip Enable |
| 8 | C/D | WR = L --- C/D = H : Command Write C/D = L : Data Write RD = L --- C/D = H : Status Read C/D = L : Data Read |
| 9 | NC | No Connection |
| 10 | /RES | H --- Normal L --- Initialize T6963C |
| 11-18 | DB0 - DB7 | Data Bus Line |
| 19 | FS | FS : Pin for selection of font H -- Font 6x8 (default) L -- Font 8x8 |
| 20 | VEE | Negative Power Supply (-20V) |
| 21 | LEDA | LED Supply Voltage + (5V) |
| 22 | LEDK | LED Supply Voltage - (0V) |

3 BLOCK DIAGRAM & INTERFACE



4 ELECTRO-OPTICAL CHARACTERISTICS

| Parameter | Symbol | Condition | Min | Typ | Max | Unit | Note |
|--|---------|-----------------|---------|------|---------|-------------------|------|
| ----- Electronic Characteristics ----- | | | | | | | |
| Logic Circuit Supply Voltage | VDD-VSS | -- | 4.5 | 5.0 | 5.5 | V | |
| LCD Driving Voltage (Normal Temp. type) | VDD-VO | 0 °C | -- | -- | -- | V | |
| | | 25 °C | -- | 18.2 | -- | | |
| | | 50 °C | -- | -- | -- | | |
| Input Voltage | VIH | -- | 0.7 VDD | -- | VDD | V | |
| | VIL | -- | VSS | -- | 0.3 VDD | V | |
| Logic Supply Current | IDD | VDD = 5V | -- | 25 | -- | mA | |
| ----- Temperature Characteristics ----- | | | | | | | |
| Normal temp. type | TOP | Operating Temp. | 0 | | 50 | °C | |
| | TSTG | Storage Temp. | -10 | | 60 | °C | |
| Extended temp. type | TOP | Operating Temp. | -20 | | 70 | °C | |
| | TSTG | Storage Temp. | -30 | | 80 | °C | |
| ----- LED Back-light Characteristics ----- | | | | | | | |
| Forward Voltage | VF | -- | 3.8 | 4.2 | 4.5 | V | |
| Forward Current | IF | VF=4.05V | -- | 660 | -- | mA | |
| Bare LED Luminous intensity | | VF=4.05V | -- | 110 | -- | cd/m ² | |
| LCM Luminous intensity | | VF=4.05V | -- | 30 | -- | cd/m ² | |