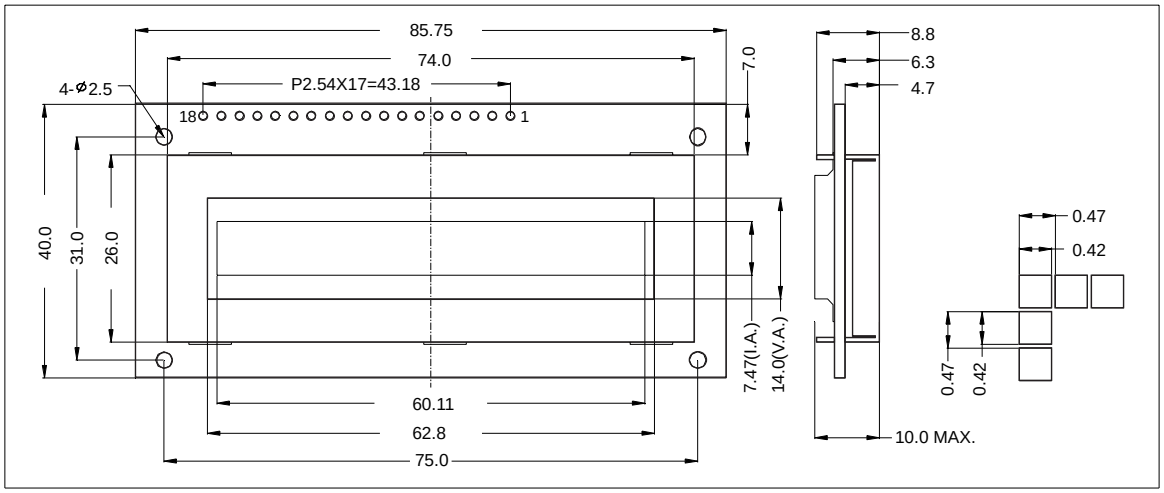
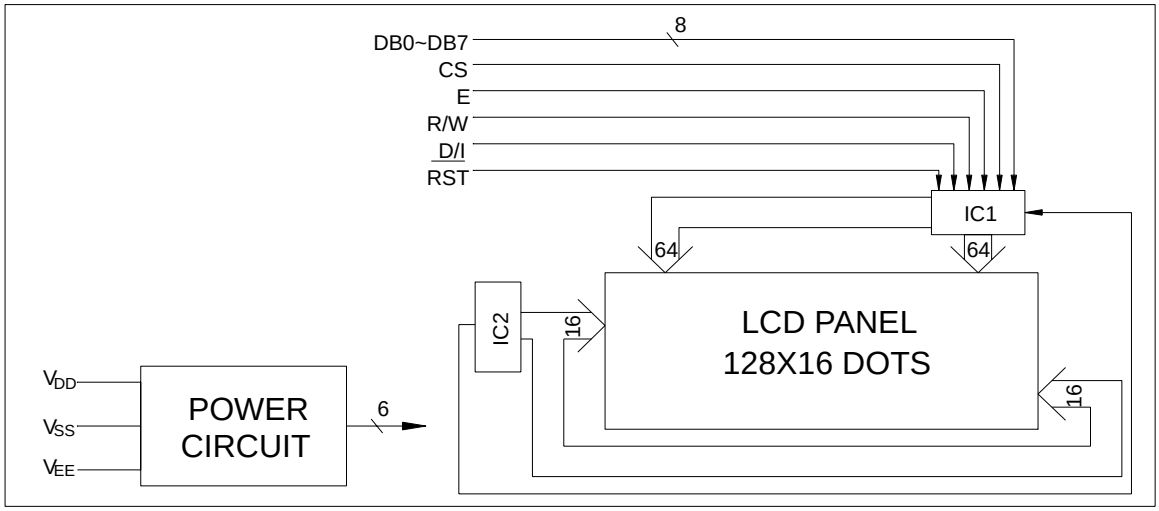
## 1. 0 Features

* Display Mode: Reflective/Transflective/Transmissive and Positive Type STN
* Input Data: 8-Bits Parallel Data Input from a MPU
* Assembly: EDM12816B -- SMT ; DFMG12816-01 -- COB
* Backlight: Optional

## 2. 0 External Dimensions




## 3. 0 Block Diagram



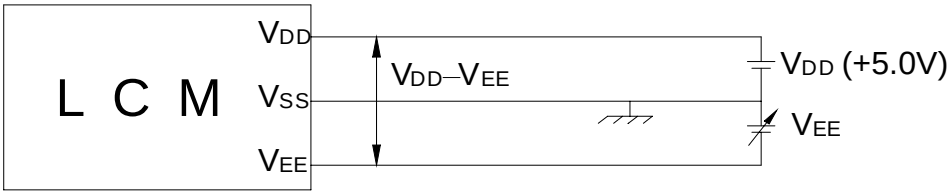

## 4. 0 Maximum Rating

| Item | Symbol | Test Condition | Standard Value | | Unit |
|---|---|---|---|---|---|
| | | | Min. | Max. | |
| Supply Voltage for Logic | $V_{DD}$–$V_{SS}$ | Ta=25 ˚C | 0 | 6.7 | V |
| Supply Voltage for LCD | $V_{DD}$–$V_{EE}$ | | 0 | 7.0 | V |
| Input Voltage | $V_I$ | | 0 | $V_{DD}$ | V |
| Operating Temperature | Topr | — | 0 | +50 | ˚C |
| Storage Temperature | Tstg | — | –10 | +60 | ˚C |

## 5. 0 Electro-Optical Characteristics

| Item | | Symbol | Conditions | Standard Value | | | Unit |
|---|---|---|---|---|---|---|---|
| | | | | Min. | Typ. | Max. | |
| Power Supply for Logic | Logic | Vdd | — | 4.75 | 5.0 | 5.25 | V |
| | LCD Drive | Vdd-Vee | | — | — | 5.5 | |
| Frame Frequency | | f FLM | Vdd=5.0V | 65 | 70 | 75 | Hz |
| Current Consumption | | Idd | Vdd=5.0V, Vdd-V0=5.0 V/R=160Kohm | — | 0.8 | 1.5 | mA |
| LCD Driving Voltage(Recommended) | | Vdd-V0 | Ta=25℃; Ø, θ=0° | — | 5.0 | — | V |
| Response Time(Rising) | | Tr | Ta=25℃ Ø, θ=0° | — | 200 | 250 | ms |
| Response Time(Decay) | | Td | | — | 250 | 300 | ms |
| Viewing Angle | | Ø2-Ø1 | K≥2 | -10 | — | 45 | DEG. |
| Contrast Ratio | | K | Ø=0°, θ=0° | 2.0 | 5.0 | — | — |

## 6. 0 Power Supply for LCM




VDD –VEE: LCD Driving Voltage

## 7. 0 I/O Connection

| Pin No | Symbol | Level | Description |
|---|---|---|---|
| 1 | BL+ | — | Back light |
| 2 | BL- | — | Back light |
| 3 | VEE | 0V | Power supply for LCD |
| 4 | VDD | 5.0V | Power supply for logic and LCD |
| 5 | VSS | — | Ground |
| 6 | E | H,H/L | Chip enable signal |
| 7 | D/I | H/L | H: Data L: Instruction code |
| 8 | R/W | H/L | H: Read L: Write |
| 9 | RST | L | Reset signal |
| 10 | NC | — | No connection |
| 11 | DB7 | H/L | Data bit 7 |
| 12 | DB6 | H/L | Data bit 6 |
| 13 | DB5 | H/L | Data bit 5 |
| 14 | DB4 | H/L | Data bit 4 |
| 15 | DB3 | H/L | Data bit 3 |
| 16 | DB2 | H/L | Data bit 2 |
| 17 | DB1 | H/L | Data bit 1 |
| 18 | DB0 | H/L | Data bit 0 |