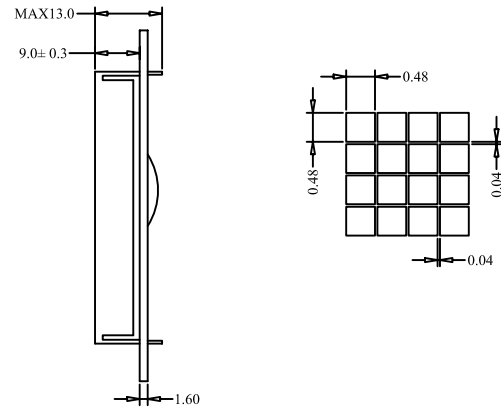
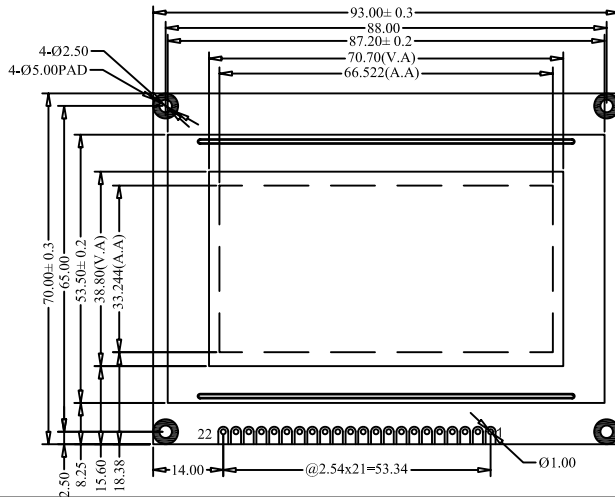


1. DIMENSION OUTLINE



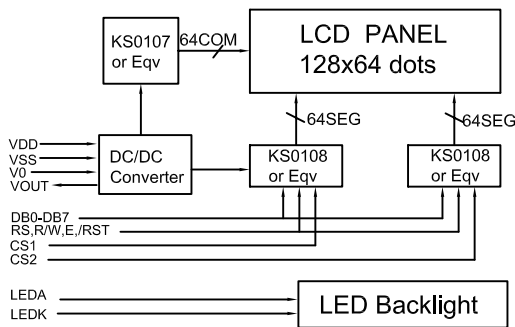
2. MECHANICAL SPECIFICATIONS

| ITEM | SPECIFICATIONS | ITEM | REMARK |
|-------------------------|----------------|------|-------------------------------|
| Module Size(L×W×H) | 93.0×70.0×13.0 | mm | Reference Dimensional Outline |
| View Area(W×H) | 70.7×38.8 | mm | |
| Effective V/Area | 66.52×33.24 | mm | |
| Number of Characters | 128×64 | - | |
| Dot Pitch(W×H) | 0.52×0.52 | mm | |
| Dot Size(W×H) | 0.48×0.48 | mm | |
| Weight (Reflective/Led) | - | g | |

3. ABSOLUTE MAXIMUM RATINGS

| ITEM | SYMBOL | CONDITION | STANDARD | |
|-----------------------|------------------|-----------|----------|-----------------------|
| | | | MIN | MAX |
| Logic Voltage | V _{DD} | Ta=25°C | -0.3V | 7V |
| LCD Voltage | V _{LCD} | | -0.3V | 17.5V |
| Input Voltage | V _I | | -0.3V | V _{DD} +0.3V |
| Operation Temperature | T _{OP} | — | -20°C | 70°C |
| Storage Temperature | T _{St} | — | -30°C | 80°C |

4. BLOCK DIAGRAMMECHANICAL



5. LED BACKLIGHT SPECIFICATIONS

| ITEM | SYMBOL | TYPE | MAX | UNIT |
|----------------------|----------------|------|-----|------|
| Ta=25°C | | | | |
| Forward Voltage | V _f | 4.1 | 4.3 | V |
| Forward Current | I _f | 360 | — | mA |
| Emission Vave Length | λ _P | 568 | — | nm |

6. INTERFACE PIN CONNECTIONS

| ITEM | SYMBOL | LEVEL | FUNCTIONS | |
|------|---------|-------|--------------------------------|--------------------------------|
| 1 | CS1 | L | Chip selection signal 1 | When CSA and CSB were not used |
| 2 | CS2 | L | Chip selection signal 2 | |
| 3 | VSS | 0V | Power Ground | |
| 4 | VDD | +5V | Power supply for logic | |
| 5 | V0 | — | Contrast adjust | |
| 6 | RS | H/L | H:data L:command | |
| 7 | R/W | H/L | H:read L:write | |
| 8 | E | H.H→L | Enable signal | |
| 9-16 | DB0-DB7 | H/L | Data Bus | |
| 17 | CSA | H | Chip selection signal 1 | When CS1 and CS2 were not used |
| 18 | CSB | H | Chip selection signal 2 | |
| 19 | /RST | L | Reset signal | |
| 20 | VOUT | — | Output voltage for LCD driving | |
| 21 | LEDA | +5V | Power supply for LED backlight | |
| 22 | LEDK | 0V | | |

7. ELECTRICAL CHARACTERISTICS

| ITEM | SYMBOL | MIN | TYPE | MAX | UNIT |
|---------------------------|---------------------------------|--------------------|------|-----------------|------|
| Ta=25°C | | | | | |
| Logic Power | V _{DD} | 4.5 | 5 | 5.5 | V |
| Input High Voltage | V _{IH} | 0.8V _{DD} | — | V _{DD} | V |
| Input Low Voltage | V _{IL} | VSS | — | 0.8 | V |
| Output High Voltage | V _{OH} | 2.4 | — | — | V |
| Output Low Voltage | V _{OL} | 0 | — | 0.4 | V |
| Logic Current | I _{DD} | — | 6 | 8 | mA |
| Operation Voltage For LCD | V _{DD} -V ₀ | — | 9 | — | V |