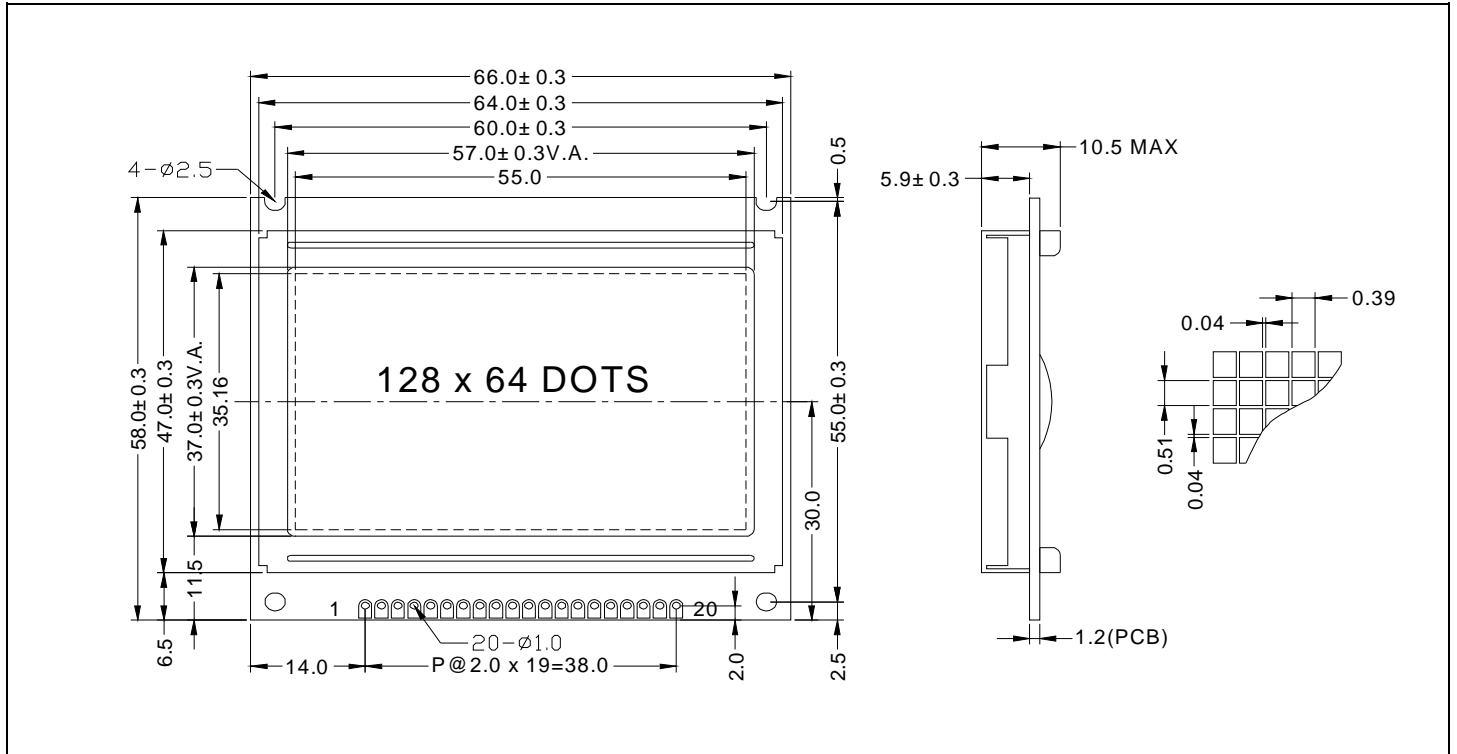


128 x 64 dots + white LED backlight



ABSOLUTE MAXIMUM RATINGS

| Item | Symbol | Min. | Max. | Unit |
|-----------------------|---------|------|---------|------|
| Supply Voltage(Logic) | VDD-VSS | -0.3 | 7.0 | V |
| Supply Voltage(LCD) | VDD-VO | -0.3 | 19.0 | V |
| Input Voltage | VI | -0.3 | VDD+0.3 | V |
| Operating Temp. | Topr | -20 | 70 | °C |
| Storage Temp. | Tstg | -30 | 80 | °C |

MECHANICAL DATA

| Item | Nominal Dimensions | Unit |
|------------------------|--------------------|------|
| Module Size(W x H x T) | 66.0 x 58.0 x 10.5 | mm |
| Viewing Area(W x H) | 57.0 x 37.0 | mm |
| Dot Pitch(W x H) | 0.43 x 0.55 | mm |
| Dot Size(W x H) | 0.39 x 0.51 | mm |
| Weight | Approx. 40 | g |

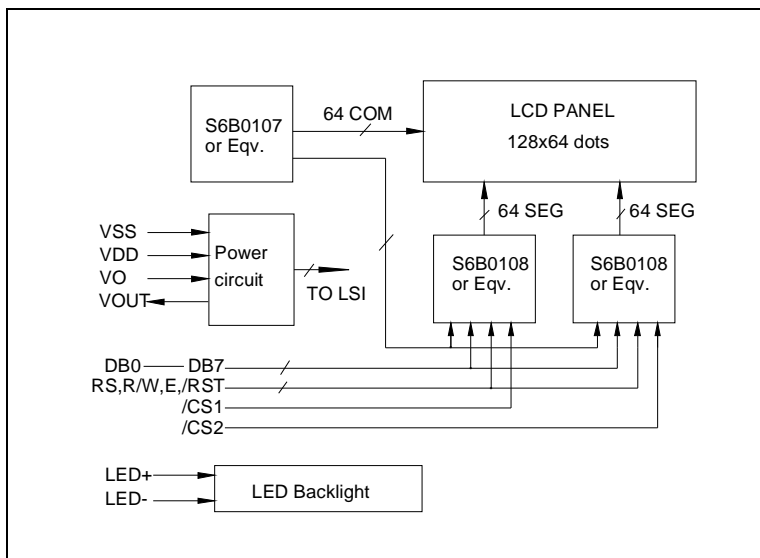
ELECTRICAL CHARACTERISTICS (VDD=5V±5%)

| Item | Symbol | TEST Condition | Min. | Typ. | Max. | Unit |
|---------------------|--------|----------------|------|------|------|------|
| Input High Voltage | VIH | -- | 2.0 | -- | VDD | V |
| Input Low Voltage | VIL | -- | -0.3 | -- | 0.8 | V |
| Output High Voltage | VOH | IOH=-0.2mA | 2.4 | -- | VDD | V |
| Output Low Voltage | VOL | IOL=1.6mA | 0 | -- | 0.4 | V |
| Supply Current | IDD | VDD=5.0v | -- | 6 | 8 | mA |
| LCD Driving Voltage | VDD-VO | Ta=25°C | -- | 12.2 | -- | V |

PIN CONNECTIONS

| PIN | Symbol | Level | Function |
|-----|--------|-------|------------------------------------|
| 1 | VSS | 0V | GND |
| 2 | VDD | +5V | Power supply for logic |
| 3 | VO | -- | Contrast adjusting |
| 4 | RS | H/L | H:Data L:Instruction code |
| 5 | R/W | H/L | H:Read L:Write |
| 6 | E | H,H→L | Enable signal |
| 7 | DB0 | H/L | Data bus line |
| 8 | DB1 | H/L | |
| 9 | DB2 | H/L | |
| 10 | DB3 | H/L | |
| 11 | DB4 | H/L | |
| 12 | DB5 | H/L | |
| 13 | DB6 | H/L | |
| 14 | DB7 | H/L | |
| 15 | /CS1 | H | Chip selection for IC1, active "H" |
| 16 | /CS2 | H | Chip selection for IC2, active "H" |
| 17 | /RST | L | Reset signal, active "L" |
| 18 | VOOUT | -10V | Output voltage for LCD driving |
| 19 | LED+ | +5V | Power supply for LED backlight |
| 20 | LED- | 0V | |

BLOCK DIAGRAM



LED BACKLIGHT SPECIFICATIONS (Ta=25°C)

| Item | Symbol | Typ. | Max. | Unit |
|-----------------|--------|-------|------|------|
| Forward Voltage | Vf | 3.1 | 3.3 | V |
| Forward Current | If | 60 | -- | mA |
| LED Color | | White | | |