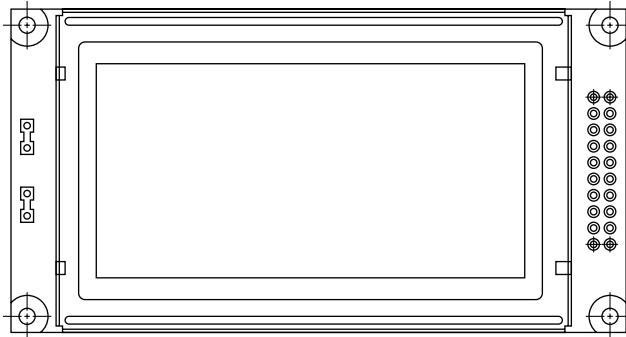


128 x 64 Graphic LCD



FEATURES

- Type: Graphic
- Display format: 128 x 64 dots
- Built-in controller: Samsung KS 0107/KS 0108 (or equivalent)
- Duty cycle: 1/64
- + 5 V power supply
- N.V. built-in
- Compliant to RoHS directive 2002/95/EC


RoHS
COMPLIANT

| MECHANICAL DATA | | |
|------------------|----------------|------|
| ITEM | STANDARD VALUE | UNIT |
| Module Dimension | 95.5 x 50.2 | mm |
| Viewing Area | 72.0 x 40.0 | |
| Dot Size | 0.48 x 0.48 | |
| Dot Pitch | 0.52 x 0.52 | |
| Mounting Hole | 90.5 x 45.2 | |
| Character Size | N/a | |

| ABSOLUTE MAXIMUM RATINGS | | | | | |
|--------------------------|----------------------|----------------|------|----------|------|
| ITEM | SYMBOL | STANDARD VALUE | | | UNIT |
| | | MIN. | TYP. | MAX. | |
| Power Supply | V_{DD} to V_{SS} | 4.75 | 5.0 | 5.25 | V |
| Input Voltage | V_I | - 0.3 | - | V_{DD} | |

Note

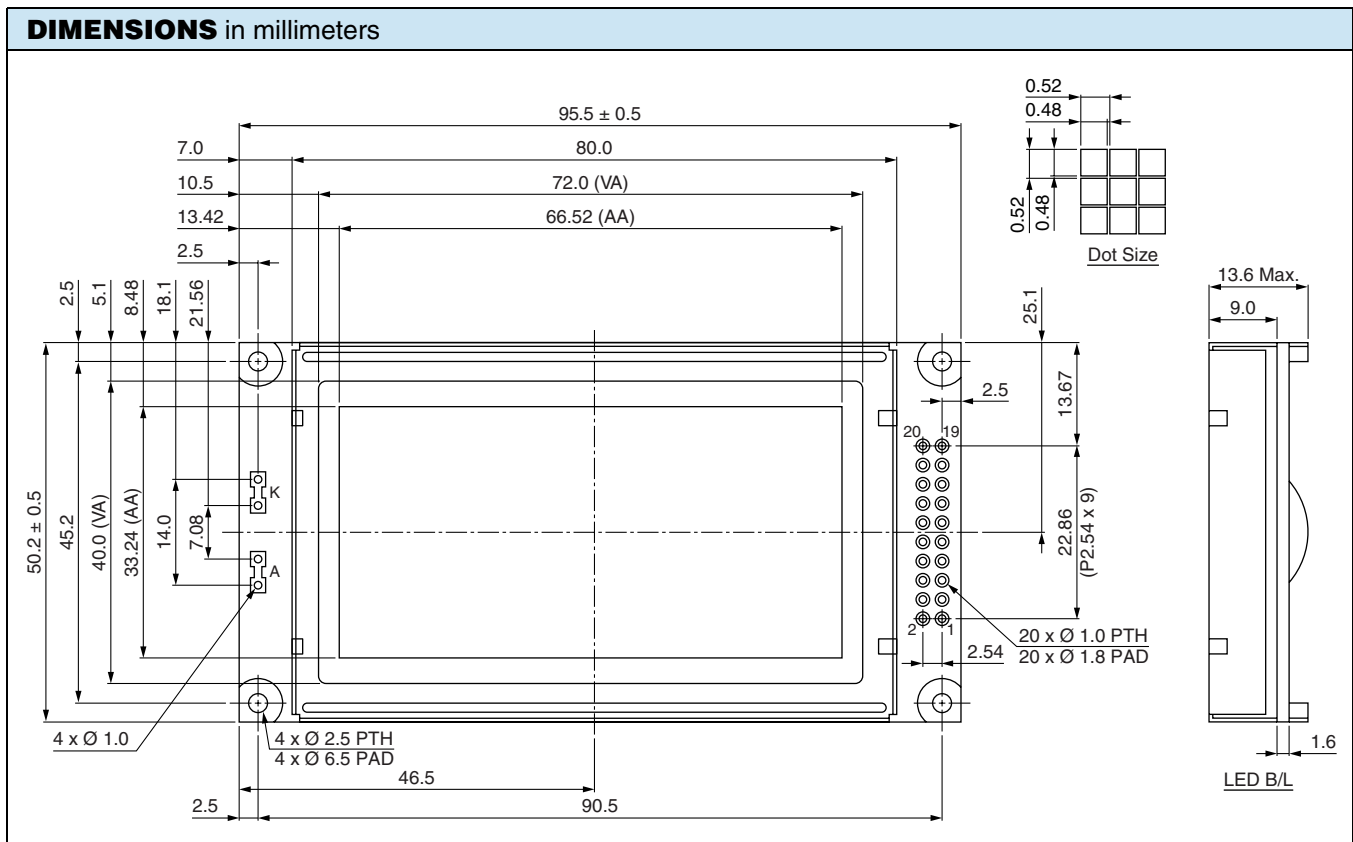
- $V_{SS} = 0$ V, $V_{DD} = 5.0$ V

| ELECTRICAL CHARACTERISTICS | | | | | | |
|--|-------------------|---|----------------|------|--------------|------|
| ITEM | SYMBOL | CONDITION | STANDARD VALUE | | | UNIT |
| | | | MIN. | TYP. | MAX. | |
| Input Voltage | V_{DD} | L level | 0.7 V_{DD} | - | V_{DD} | V |
| | V_{IO} | H level | 0 | - | 0.3 V_{DD} | V |
| Supply Current | I_{DD} | $V_{DD} = +5$ V | - | 2.5 | 7.5 | mA |
| Recommended LC Driving Voltage for Normal Temperature Version Module | V_{DD} to V_0 | - 20 °C | 9.9 | 10.4 | 10.9 | V |
| | | 0 °C | 9.7 | 10.2 | 10.7 | |
| | | 25 °C | 8.9 | 9.4 | 9.9 | |
| | | 50 °C | 8.6 | 9.1 | 9.6 | |
| | | 70 °C | 8.4 | 8.9 | 9.4 | |
| LED Forward Voltage | V_F | 25 °C | - | 4.2 | 4.6 | V |
| LED Forward Current - Array | I_F | 25 °C | - | 330 | 660 | mA |
| LED Forward Current - Edge | | | - | 120 | 240 | |
| EL Power Supply Current | I_{EL} | $V_{EL} = 110$ V _{AC} , 400 Hz | - | - | 5.0 | mA |

| OPTIONS | | | | | | | | | |
|---------------|----------|------------|----------|----------|-----------|-----------|-----|----|------|
| PROCESS COLOR | | | | | | BACKLIGHT | | | |
| TN | STN Gray | STN Yellow | STN Blue | FSTN B&W | STN Color | None | LED | EL | CCFL |
| | x | x | x | x | | x | x | x | |

For detailed information, please see the "Product Numbering System" document.

| INTERFACE PIN FUNCTION | | | |
|------------------------|-----------------|---------|--|
| PIN NO. | SYMBOL | PIN NO. | FUNCTION |
| 1 | V _{SS} | | Ground |
| 2 | V _{DD} | | Power supply |
| 3 | V ₀ | | Contrast adjustment |
| 4 | D/I | | Data/instruction |
| 5 | R/W | | Data read/write |
| 6 | E | | H → L enable signal |
| 7 | DB0 | | Data bus line |
| 8 | DB1 | | Data bus line |
| 9 | DB2 | | Data bus line |
| 10 | DB3 | | Data bus line |
| 11 | DB4 | | Data bus line |
| 12 | DB5 | | Data bus line |
| 13 | DB6 | | Data bus line |
| 14 | DB7 | | Data bus line |
| 15 | CS1 | | Chip select for IC1 |
| 16 | CS2 | | Chip select for IC2 |
| 17 | RST | | Reset |
| 18 | V _{EE} | | Negative voltage output |
| 19 | A | | Power supply for LED (+ 4.2 V), R _A = 0 Ω |
| 20 | K | | Power supply for LED (0 V) |





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