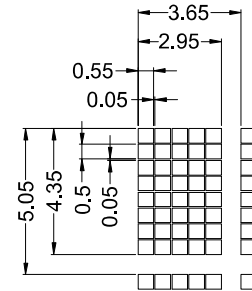
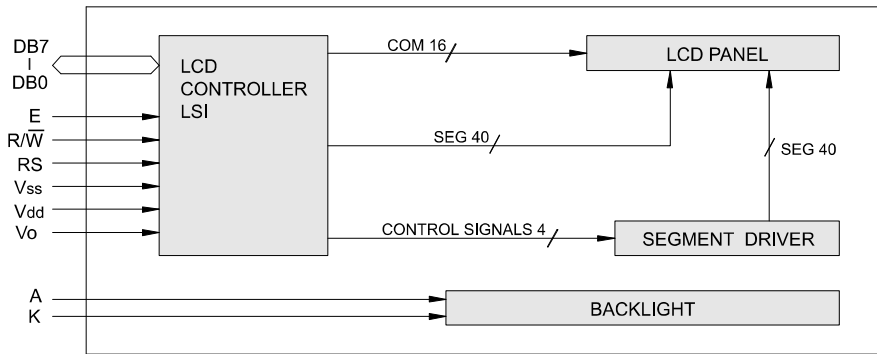
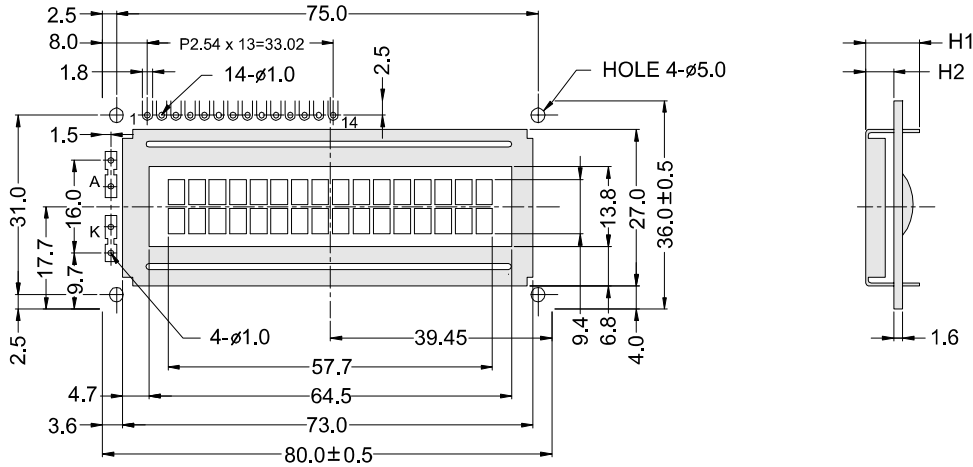




OUTLINE DIMENSION & BLOCK DIAGRAM



The tolerance unless classified $\pm 0.3\text{mm}$

| MECHANICAL SPECIFICATION | | | |
|--------------------------|-------------|-----------|------------|
| Overall Size | 80.0 x 36.0 | Module | H2 / H1 |
| View Area | 64.0 x 13.8 | W / O B/L | 5.0 / 9.6 |
| Dot Size | 0.55 x 0.50 | EL B/L | 5.0 / 9.6 |
| Dot Pitch | 0.60 x 0.55 | LED B/L | 9.0 / 13.6 |

| PIN ASSIGNMENT | | |
|----------------|--------|------------------------|
| Pin no. | Symbol | Function |
| 1 | Vss | Power supply(GND) |
| 2 | Vdd | Power supply(+) |
| 3 | Vo | Contrast Adjust |
| 4 | RS | Register select signal |
| 5 | R/W | Data read / write |
| 6 | E | 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 |

| ABSOLUTE MAXIMUM RATING | | | | | | | | | |
|----------------------------------|-----------|-----------|-------|---------|-------|-------|-----|-----|---|
| Item | Symbol | Condition | Min. | Max. | Units | | | | |
| Supply for logic voltage | Vdd-Vss | 25°C | -0.3 | 7 | V | | | | |
| LCD driving supply voltage | Vdd-Vee | 25°C | -0.3 | 13 | V | | | | |
| Input voltage | Vin | 25°C | -0.3 | Vdd+0.3 | V | | | | |
| ELECTRICAL CHARACTERISTICS | | | | | | | | | |
| Item | Symbol | Condition | Min. | Typical | Max. | Units | | | |
| Power supply voltage | Vdd-Vss | 25°C | 2.7 | - | 5.5 | V | | | |
| LCD operation voltage | Vop | Top | N | W | N | W | V | | |
| | | -20°C | - 7.1 | - 7.5 | - 7.9 | - | V | | |
| | | 0°C | 4.5 | - 4.8 | - 5.1 | - | V | | |
| | | 25°C | 4.1 | 6.1 | 4.4 | 6.4 | 4.7 | 6.7 | V |
| | | 50°C | 3.8 | - 4.1 | - 4.4 | - | V | | |
| | | 70°C | - 5.7 | - 6 | - 6.3 | V | | | |
| LCM current consumption (No B/L) | Idd | Vdd=5V | - | 2 | 3 | mA | | | |
| Backlight current consumption | LED/edge | VB/L=4.2V | - | 40 | - | mA | | | |
| | LED/array | VB/L=4.2V | - | 120 | - | mA | | | |

REMARK

LCD option: STN, TN, FSTN

Backlight Option: LED,EL Backlight feature, other Specs not available on catalog is under request.





Products

- Mono Type Part Numbering System
- Color Type Part Numbering System
- COG Part Numbering System
- Mono COG Part Numbering System
- EMS Part Numbering System
- Self-made product Part Numbering System

Mono Type Part Numbering System

P C 16 02 * * * - * ** - * - *
1 2 3 4 5 6 7 8 9 10 11

| No | Code value | Description | Remark |
|----|-----------------|--|---------------------------------|
| 1 | P | Powertip products | Brand |
| 2 | C | Character type | Module type |
| | G | Graphic type | |
| 3 | 08,16,20,24... | Character per line (for character modules) | Characters per line or row dots |
| | 120,122,128... | Row dots (for graphic modules) | |
| 4 | 01,02,03,04,... | Lines (for graphic modules) | Lines or column dots |
| | 32,240... | Column dots (for graphic modules) | |
| 5 | A | Without backlight | |
| | B | EL backlight blue-green | |
| | D | EL backlight yellow-green | |
| | E | EL backlight white | |
| | F | CCFL backlight white | |
| | L | LED backlight yellow-green | |
| | M | LED backlight amber | |
| | N | LED backlight red | Backlight mode |
| | O | LED backlight orange | (Type+Color) |
| | P | LED backlight pure-green | |
| | S | LED backlight green | |
| | T | Double LED backlight | |
| | U | LED backlight blue | |
| | V | LED backlight blue white | |
| | W | LED backlight white | |
| | R | Triple LED backlight | |
| 6 | R | Standard (Through hole, cable, connector and etc.) | Connecting type |
| | Y | Straight pin-header | |
| | Z | Right angle pin-header | |
| 7 | None | TN positive gray | |
| | N | TN negative blue | |
| | P | PBT(Pure Black Tech.) | |
| | Q | E-TN(Enhanced TN) | |
| | H | HTN Positive Gray | |
| | J | HTN Negative (Black/Blue) | |
| | S | STN positive gray | I CD Mode |

| | | |
|----|---------------------------|--|
| U | STN positive yellow-green | |
| M | STN negative blue | |
| G | ASTN(Automotive STN) | |
| W | E-STN(Enhanced STN) | |
| F | FSTN positive white | |
| T | FSTN negative black | |
| Y | E-FSTN(Enhanced FSTN) | |
| 8 | 0~Z | Series number Model name |
| 9 | 00~ZZ | IC manufacturer/character pattern /total solution series number Table A |
| | NN | Without controller |
| 10 | A~Z | Refer to display viewing features system Table B |
| 11 | No Code value | Standard product Version |
| | 01~ZZ | Special code |

Table A

| | | | | | |
|----|---------------|----|--------------|----|-------------|
| S* | SUMSUNG LSI | T* | TOSHIBA LSI | Y* | SANYO LSI |
| M* | MOTOROLA LSI | E* | EPSON LSI | H* | HITACHI LSI |
| N* | NOVATEK | W* | SITRONIX LSI | A* | APANPEC LSI |
| R* | SHARP LSI | P* | PHILIPS LSI | J* | JRC LSI |
| U* | UMC GROUP LSI | Z* | HOTEK LSI | O* | OKI LSI |
| B* | RAIO | C* | ASLIC | F* | TOMATO LSI |
| G* | AVANT | L* | SUNPLUS LSI | | |

Table B

| Operation Temperature | | Normal Temp.(NT):0°C~50°C | | Wide Temp.(WT):-20°C~70°C | |
|-----------------------|---------------|---------------------------|-------|---------------------------|-------|
| Viewing direction | | 6:00 | 12:00 | 6:00 | 12:00 |
| Polarizer | Reflective | A | D | G | J |
| | Transflective | B | E | H | K |
| | Transmissive | C | F | I | L |

TOP

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