

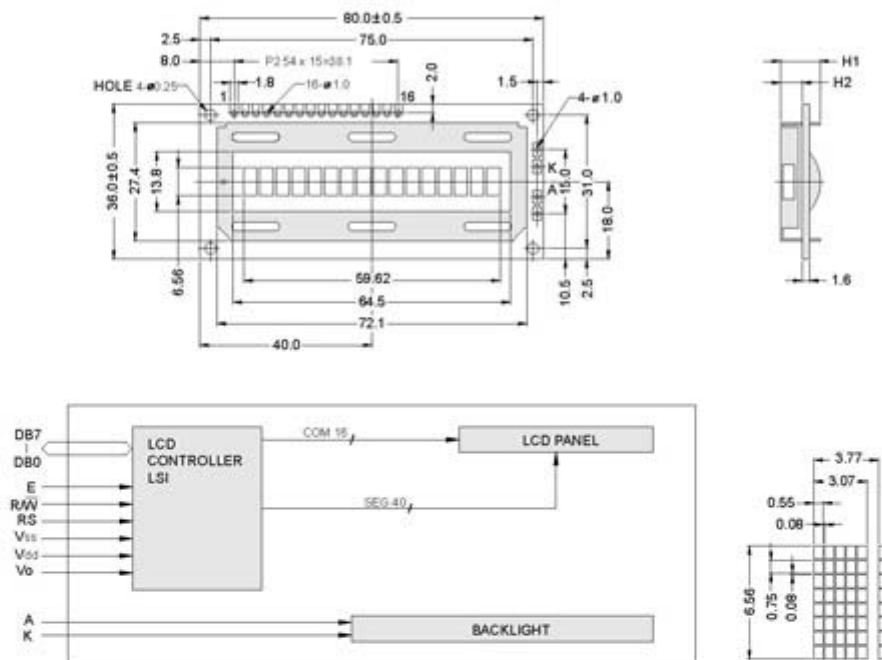
## PC1601-A

**POWERTIP**

**PC 1601-A**



\*\*\*\*\* OUTLINE DIMENSION & BLOCK DIAGRAM



The tolerance unless classified ±0.3mm

| MECHANICAL SPECIFICATION |             |         |            |
|--------------------------|-------------|---------|------------|
| Overall Size             | 80.0 x 36.0 | Module  | H2 / H1    |
| View Area                | 64.5 x 13.8 | W/O B/L | 5.1 / 9.2  |
| Dot Size                 | 0.55 x 0.75 | EL B/L  | 5.1 / 9.2  |
| Dot Pitch                | 0.63 x 0.83 | LED B/L | 9.4 / 14.0 |

| 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                |
| 15             | A      | Power supply for LED B/L (+) |
| 16             | K      | Power supply for LED B/L (-) |

| 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     | — 5.2 | — 5.4   | — 5.7 V           |
|                                  |           | 0°C       | 4.5   | — 4.8   | — 5.1 V           |
|                                  |           | 25°C      | 4.1   | 4.2     | 4.5 4.5 4.7 4.9 V |
|                                  |           | 50°C      | 3.8   | — 4.1   | — 4.4 V           |
|                                  |           | 70°C      | — 3.9 | — 4.0   | — 4.5 V           |
| LCM current consumption (No B/L) | Idd       | Vdd=5V    | —     | 1.5     | 2.5 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**  
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**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                                  | LCD Mode                        |

|    |               |                                                                 |                           |
|----|---------------|-----------------------------------------------------------------|---------------------------|
|    | U             | STN positive yellow-green                                       | 200 10000<br>(Type+Color) |
|    | 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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