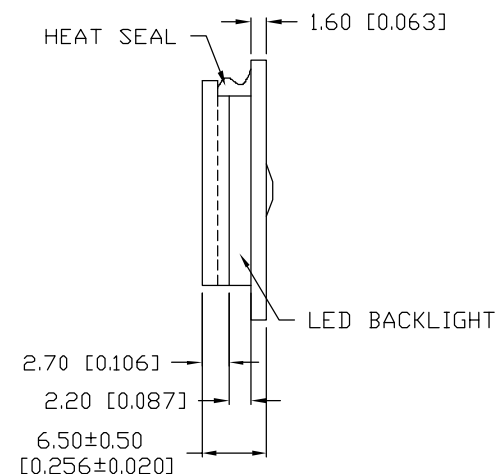
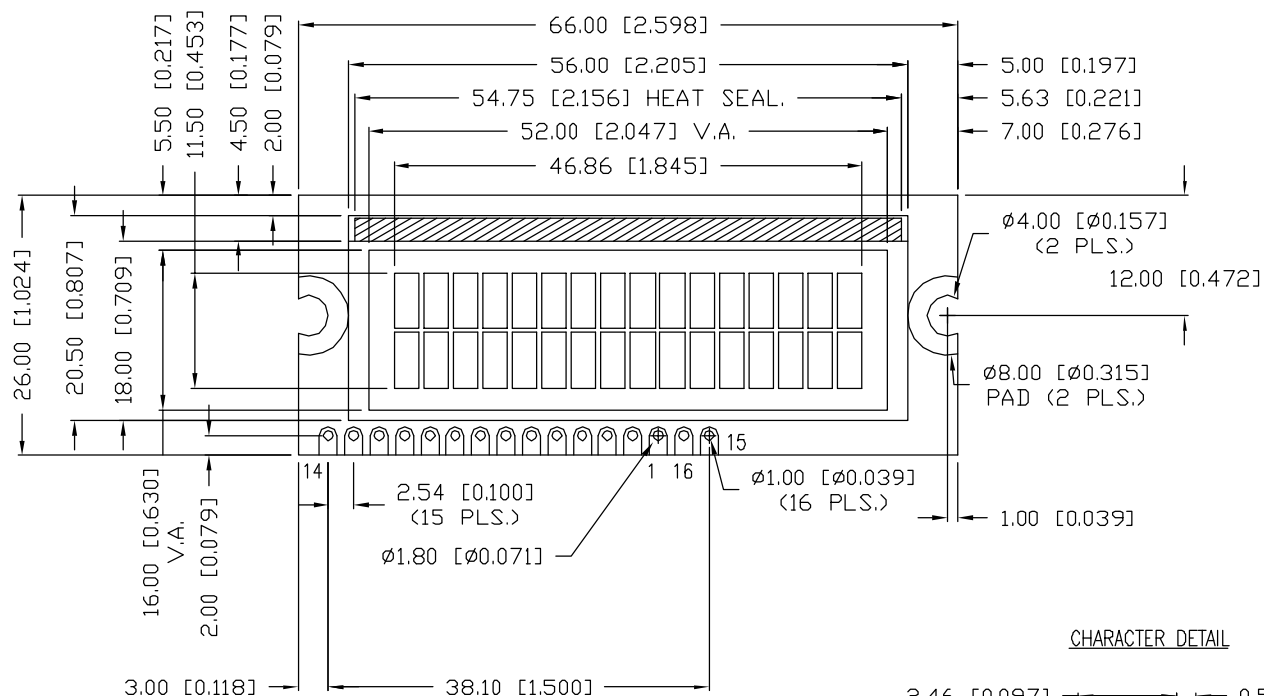
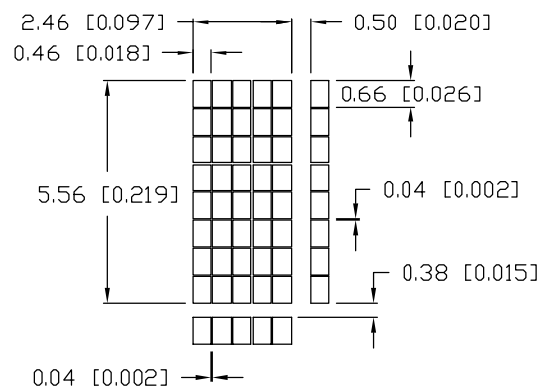




## CHARACTER DETAIL



\*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), X.X=±0.5 (±0.020), X.XX=±0.25 (±0.010), X.XXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN.= +DECIMAL PRECISION MAX.= +0.00 -DECIMAL PRECISION

REV.

PART NUMBER

LCM-S01602DTF/M

16 x 2 CHARACTER LCD MODULE, TN, REFLECTIVE.  
1/16 DUTY, 1/5 BIAS, WITH LED BACKLIGHT.

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## RELIABILITY NOTE

OUR MANY YEARS OF EXPERIENCE DATA ACCUMULATION INDICATE THAT SOLDER HEAT IS A MAJOR CAUSE OF EARLY AND FUTURE FAILURE. PLEASE PAY ATTENTION TO YOUR SOLDERING PROCESS.



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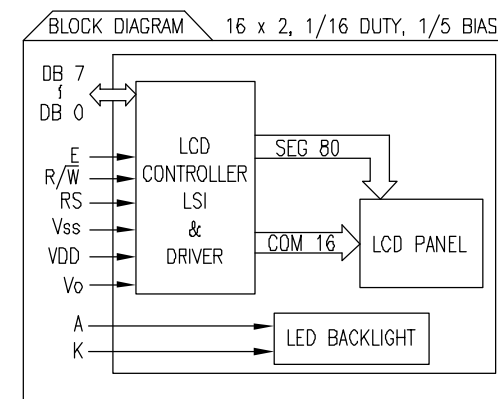
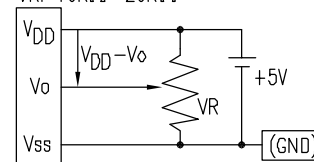
CT

PAGE: 1 OF 2

SCALE: N/A

| PIN CONFIGURATION |                   |                     |                                                                                    |               |
|-------------------|-------------------|---------------------|------------------------------------------------------------------------------------|---------------|
| PIN NO.           | SYMBOL            | LEVEL               | FUNCTION                                                                           |               |
| 1                 | V <sub>SS</sub>   | —                   | POWER SUPPLY                                                                       | GND (0V)      |
| 2                 | V <sub>DD</sub>   | —                   |                                                                                    | 5V            |
| 3                 | V <sub>0</sub>    | —                   |                                                                                    | FOR LCD DRIVE |
| 4                 | RS                | H/L                 | REGISTER SELECT SIGNAL<br>H: DATA INPUT<br>L: INSTRUCTION INPUT                    |               |
| 5                 | R/ $\overline{W}$ | H/L                 | H: DATA READ (MODULE $\rightarrow$ MPU)<br>L: DATA WRITE (MODULE $\leftarrow$ MPU) |               |
| 6                 | E                 | H,H $\rightarrow$ L | ENABLE                                                                             |               |
| 7~14              | DB0~DB7           | H/L                 | DATA BUS—SOFTWARE SELECTABLE 4 OR 8 BIT MODE.                                      |               |
| 15                | A                 | —                   | ANODE                                                                              | LED BACKLIGHT |
| 16                | K                 | —                   | CATHODE                                                                            | LED BACKLIGHT |

V<sub>DD</sub>-V<sub>O</sub>: LCD DRIVING VOLTAGE  
VR: 10KΩ-20KΩ



| ELECTRICAL CHARACTERISTICS |                                  | V <sub>DD</sub> =4.7V to 5.3V, T <sub>A</sub> =25°C |                |      |      |                   |
|----------------------------|----------------------------------|-----------------------------------------------------|----------------|------|------|-------------------|
| ITEM                       | SYMBOL                           | CONDITION                                           | STANDARD VALUE |      |      | UNIT              |
| SUPPLY VOLTAGE FOR LOGIC   | V <sub>DD</sub> -V <sub>SS</sub> | -                                                   | MIN.           | TYP. | MAX. |                   |
| SUPPLY CURRENT FOR LOGIC   | I <sub>DD</sub>                  | V <sub>DD</sub> =5V                                 | -              | 2.0  | 3.0  | mA                |
| INPUT VOLTAGE              | HIGH                             | V <sub>IH</sub>                                     | -              | 2.2  | -    | V <sub>DD</sub>   |
|                            | LOW                              | V <sub>IL</sub>                                     | -              | 0    | -    | 0.6               |
| OUTPUT VOLTAGE             | HIGH                             | V <sub>OH</sub>                                     | -              | 2.4  | -    | V                 |
|                            | LOW                              | V <sub>OL</sub>                                     | -              | -    | -    | 0.4               |
| *LED BACKLIGHT             | VOLTAGE                          | V <sub>f</sub>                                      | If=40mA        | 4.0  | 4.2  | V                 |
|                            | CURRENT                          | If                                                  | -              | 40   | 80   | mA                |
|                            | POWER CONSUMPTION                | PD                                                  | -              | -    | 336  | mW                |
|                            | LUMINOUS                         | L                                                   | If=40mA        | 50   | -    | cd/m <sup>2</sup> |
|                            | COLOR                            | -                                                   | -              | -    | -    | nm                |

\*ONLY APPLIES TO MODULES WITH BACKLIGHT

## ABSOLUTE MAXIMUM RATINGS

| ITEM                         | SYMBOL                           | TEST CONDITION       | STANDARD VALUE  |                 | UNIT |
|------------------------------|----------------------------------|----------------------|-----------------|-----------------|------|
| SUPPLY VOLTAGE FOR LOGIC     | V <sub>DD</sub> -V <sub>SS</sub> | T <sub>a</sub> =25°C | 4.7             | 5.3             | V    |
| SUPPLY VOLTAGE FOR LCD DRIVE | V <sub>DD</sub> -V <sub>O</sub>  | -                    | 4.2@50°C        | 4.8@0°C         | V    |
| INPUT VOLTAGE                | V <sub>I</sub>                   | T <sub>a</sub> =25°C | V <sub>SS</sub> | V <sub>DD</sub> | V    |
| OPERATING TEMPERATURE        | T <sub>opr</sub>                 | LCM-S                | 0               | 50              | °C   |
| STORAGE TEMPERATURE          | T <sub>stg</sub>                 | LCM-S                | -20             | 70              | °C   |

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