

UNCONTROLLED DOCUMENT

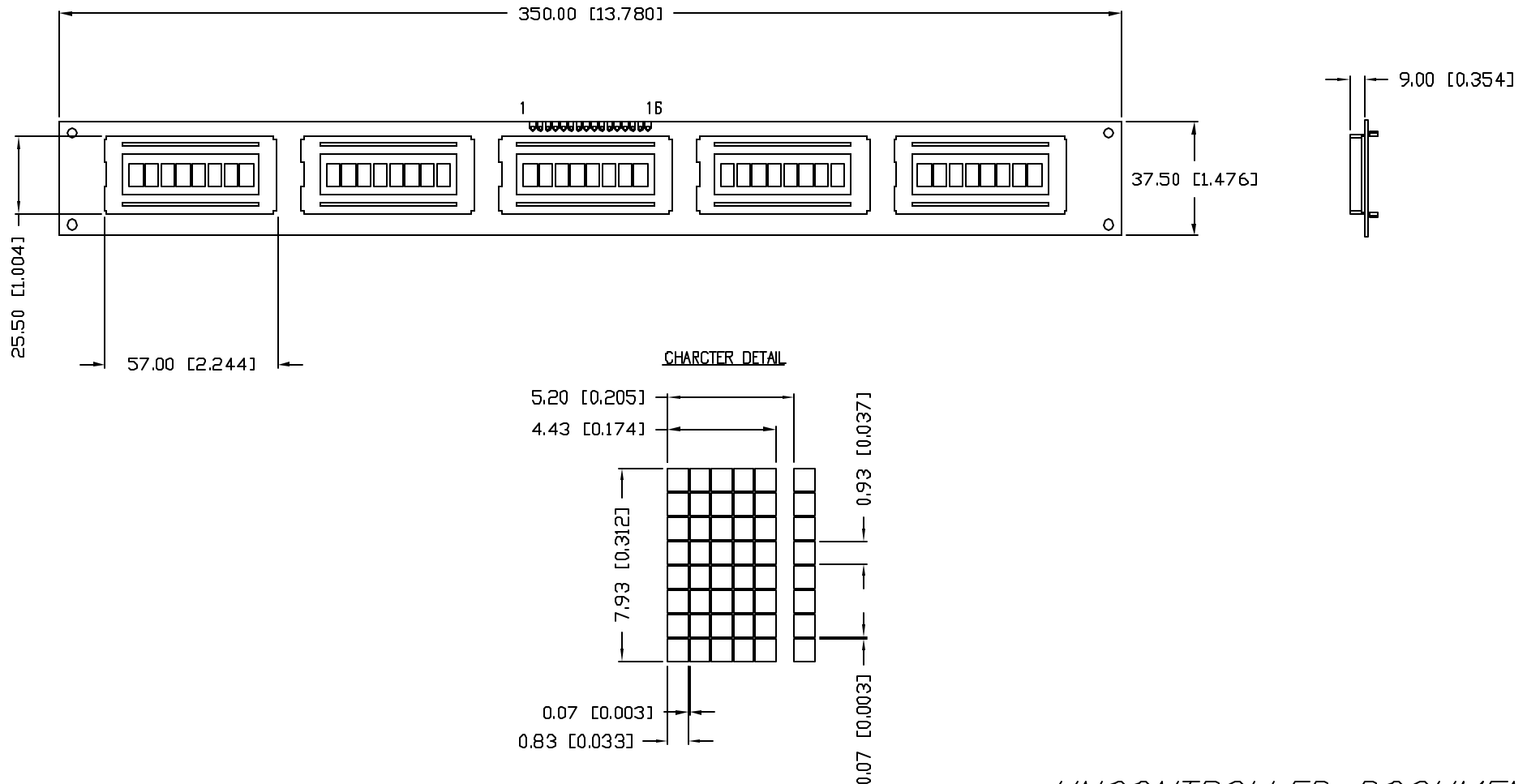
SC:2

PART NUMBER

REV.

LCM-S04001DSF/F

PRELIMINARY IN P/N DIR



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\*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-S04001DSF/F

40 x 1 CHARACTER LCD MODULE, STN YELLOW,  
TRANSFLECTIVE, LED BACKLIGHT.

CONFIDENTIAL INFORMATION

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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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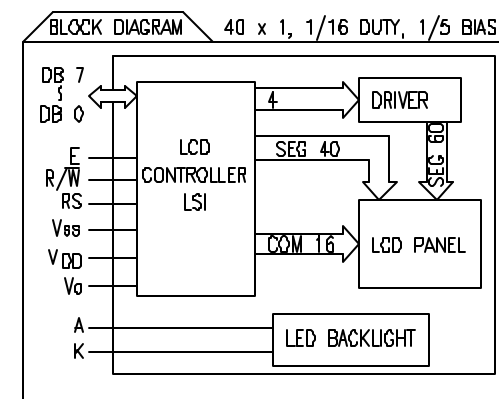
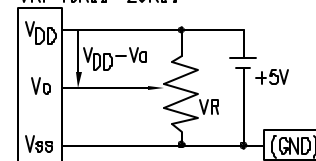
SCALE: N/A

LCM-S04001DSF/F

PRELIMINARY IN P/N DIR

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

V<sub>DD</sub>-V<sub>0</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 | APPLICABLE TERMINAL |
| SUPPLY VOLTAGE FOR LOGIC   | V <sub>DD</sub> -V <sub>SS</sub> | -                                                   | MIN.                      | TYP. | MAX. | V    | V <sub>DD</sub>     |
| SUPPLY CURRENT FOR LOGIC   | I <sub>DD</sub>                  | V <sub>DD</sub> =5V                                 | -                         | 2.0  | 3.0  | mA   | V <sub>DD</sub>     |
| INPUT VOLTAGE              | HIGH                             | V <sub>IH</sub>                                     | -                         | 2.2  | -    | V    | RS,R/W,E            |
|                            | LOW                              | V <sub>IL</sub>                                     | -                         | 0    | 0.6  | V    | DB0~DB7             |
| OUTPUT VOLTAGE             | HIGH                             | V <sub>OH</sub>                                     | I <sub>OH</sub> =-0.205mA | 2.4  | -    | V    | DB0~DB7             |
|                            | LOW                              | V <sub>OL</sub>                                     | I <sub>OL</sub> =1.6ma    | -    | 0.4  | V    | RS,R/W,E            |
| *LED BACKLIGHT             | VOLTAGE                          | V <sub>f</sub>                                      | I <sub>f</sub> =350mA     | -    | 4.2  | 4.6  | V                   |
|                            | CURRENT                          | I <sub>f</sub>                                      | -                         | -    | 350  | 550  | mA                  |
|                            | POWER CONSUMPTION                | PD                                                  | -                         | -    | 1470 | -    | mW                  |
|                            | LUMINOUS                         | L                                                   | I <sub>f</sub> =350mA     | 70   | -    | -    | 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>0</sub>  | -                    | 4.2@50°C        | 4.8@0°C         | V    |
| INPUT VOLTAGE                | V <sub>I</sub>                   | -                    | 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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