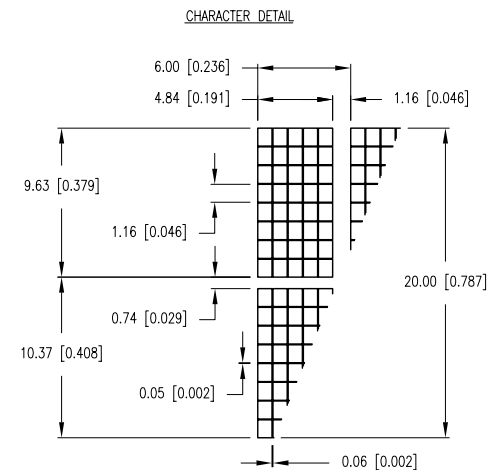
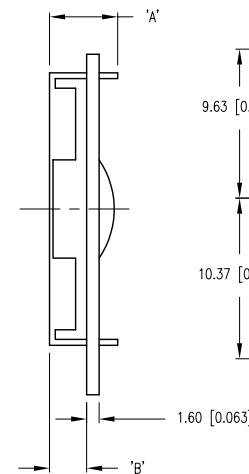


| TYPE | DIM. | A | B |
|----------------|------|------|-----|
| WITH BACKLIGHT | | 13.0 | 9.0 |
| NO BACKLIGHT | | 8.8 | 4.8 |

Technical drawing of the front view of a rectangular electronic component. The drawing shows a central array of 14 rectangular components (likely LEDs) arranged in two rows of 7. The overall dimensions are as follows:

- Overall Width:** 122.00 ± 0.50 [4.803 ± 0.020]
- Overall Height:** 44.00 ± 0.50 [1.732 ± 0.020]
- Top Margin:** 3.50 [0.138] (4 PLS.)
- Bottom Margin:** 2.50 [0.098]
- Left Margin:** 10.98 [0.432]
- Right Margin:** 1.50 [0.059]
- Internal Widths:** 106.20 [4.181], 99.00 [3.898] V.A., 94.84 [3.734]
- Internal Heights:** 20.00 [0.787], 37.00 [1.457], 20.00 [0.787], 24.00 [0.945] V.A., 35.20 [1.386]
- Component Spacing:** 2.54 [0.100] (13 PLS.)
- Component Dimensions:** 14-Ø1.00 [Ø0.039] (PAD Ø1.80), Ø3.50 [Ø0.138] (4 PLS.)
- Mounting Holes:** 14-Ø1.00 [Ø0.039] (5 PLS.), Ø1.00 [Ø0.039] (5 PLS.)

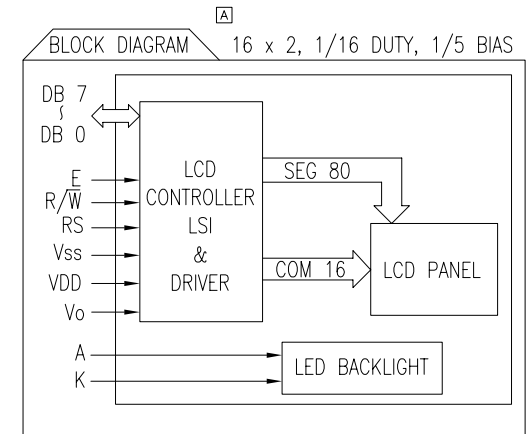
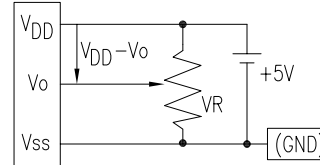


*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), X.X=±0.5 (±0.020), X.XX=±0.25 (±0.010), X.XXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN.= $\begin{matrix} +\text{DECIMAL PRECISION} \\ -0.00 \end{matrix}$ MAX.= $\begin{matrix} +0.00 \\ -\text{DECIMAL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

| | | | |
|-------------|-------------------------------------|------|------|
| PART NUMBER | LCM-X01602DXX/D | REV. | A |
| DATE | E.C.N. NUMBER AND REVISION COMMENTS | | REV. |
| 10.09.98 | E.C.N. #10464. | | A |

| PIN CONFIGURATION | | | |
|-------------------|-----------------|-------|---|
| PIN NO. | SYMBOL | LEVEL | FUNCTION |
| 1 | V _{SS} | — | POWER SUPPLY GND (0V) |
| 2 | V _{DD} | — | |
| 3 | V _O | — | |
| 4 | RS | H/L | REGISTER SELECT SIGNAL H: DATA INPUT L: INSTRUCTION INPUT |
| 5 | R/W | H/L | H: DATA READ (MODULE→MPU) 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 LED BACKLIGHT |
| 16 | K | — | CATHODE LED BACKLIGHT |

V_{DD}-V_O: LCD DRIVING VOLTAGE
VR: 10KΩ-20KΩ




| ELECTRICAL CHARACTERISTICS | | [A] V _{DD} =4.7V to 5.3V, T _A =25°C | | | | | |
|----------------------------|----------------------------------|---|-----------------------|------|------|------|-------------------|
| ITEM | SYMBOL | CONDITION | STANDARD VALUE | | | UNIT | |
| SUPPLY VOLTAGE FOR LOGIC | V _{DD} -V _{SS} | — | MIN. | TYP. | MAX. | | |
| SUPPLY CURRENT FOR LOGIC | I _{DD} | V _{DD} =5V | — | 2.0 | 3.0 | mA | |
| INPUT VOLTAGE | HIGH | V _{IH} | — | 2.2 | — | 4.7 | V |
| | LOW | V _{IL} | — | 0 | — | 0.6 | V |
| OUTPUT VOLTAGE | HIGH | V _{OH} | — | 2.4 | — | — | V |
| | LOW | V _{OL} | — | — | — | 0.4 | V |
| *LED BACKLIGHT | VOLTAGE | V _f | I _f =220mA | — | 4.2 | 4.6 | V |
| | CURRENT | I _f | — | — | 220 | 480 | mA |
| | POWER CONSUMPTION | PD | — | — | 924 | — | mW |
| | LUMINOUS | L | I _f =220mA | 70 | — | — | cd/m ² |
| | COLOR | — | — | — | — | — | nm |

*ONLY APPLIES TO MODULES WITH BACKLIGHT

| ABSOLUTE MAXIMUM RATINGS | | | | | |
|------------------------------|----------------------------------|----------------------|-----------------|-----------------|------|
| ITEM | SYMBOL | TEST CONDITION | STANDARD VALUE | | UNIT |
| SUPPLY VOLTAGE FOR LOGIC | V _{DD} -V _{SS} | T _a =25°C | 4.7 | 5.3 | V |
| SUPPLY VOLTAGE FOR LCD DRIVE | V _{DD} -V _O | — | 4.2V@50°C | 4.8@0°C | V |
| INPUT VOLTAGE | V _r | T _a =25°C | V _{SS} | V _{DD} | V |
| OPERATING TEMPERATURE | T _{opr} | LCM-S | 0 | 50 | °C |
| | | LCM-H | -20 | 70 | °C |
| STORAGE TEMPERATURE | T _{stg} | LCM-S | -20 | 70 | °C |
| | | LCM-H | -30 | 85 | °C |

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UNCONTROLLED DOCUMENT

| | | | | |
|--|--|---|-----------------|--------------|
|  | 290 E. HELEN ROAD PALATINE, IL 60067-6976 PHONE: +1.847.359.2790 FAX: +1.847.359.6538 WEB: WWW.LUMEX.COM | 9.63mm CHARACTER HEIGHT, 16x2 CHARACTERS, 5x8 DOT MATRIX LCD MODULE, 1/16 DUTY, 1/5 BIAS. | DATE: 01.28.11 | DRAWN BY: AB |
| | | | PAGE: 1 OF 2 | CHKD BY: YA |
| | | | SCALE: NTS | APRVD BY: BC |
| | | | UNIT: mm [INCH] | Ⓢ |

THE SPECIFICATIONS MAY CHANGE AT ANY TIME WITHOUT NOTICE DUE TO NEW MATERIALS OR PRODUCT IMPROVEMENT.

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