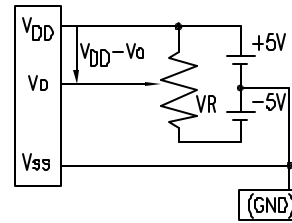


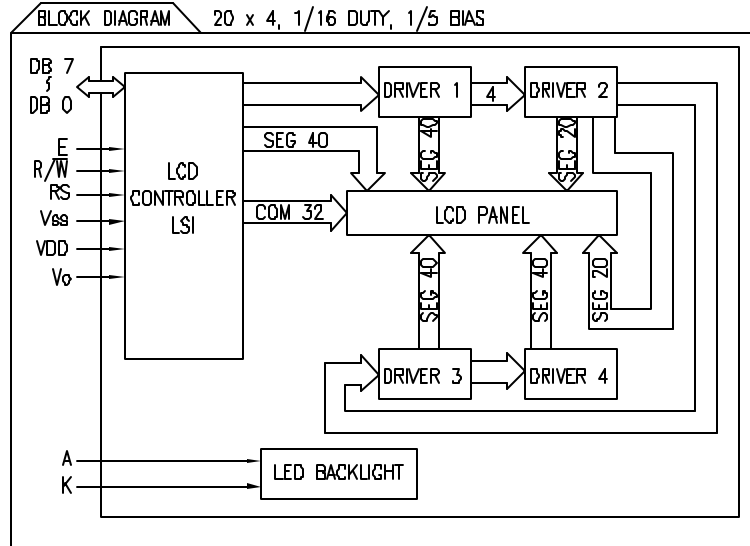
| | | |
|------|-------------------------------------|------|
| REV. | E.C.N. NUMBER AND REVISION COMMENTS | DATE |
| | SEE PAGE 1. | |

| PIN CONFIGURATION | | | | | |
|-------------------|-----------------|--------|---|---------------------------------------|--|
| PIN NO. | SYMBOL | LEVEL | FUNCTION | | |
| 1 | V _{SS} | - | POWER SUPPLY | GND (0V) | |
| 2 | V _{DD} | - | | 5V | |
| 3 | V _O | - | | FOR LCD DRIVE | |
| 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



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| ELECTRICAL CHARACTERISTICS | | V _{DD} =4.7V to 5.3V, T _A =25°C | | | | |
|----------------------------|----------------------------------|---|---------------------------|------|------|-----------------|
| ITEM | SYMBOL | CONDITION | STANDARD VALUE | | | UNIT |
| | | | MIN. | TYP. | MAX. | |
| SUPPLY VOLTAGE FOR LOGIC | V _{DD} -V _{SS} | - | - | 5.0 | - | V |
| SUPPLY CURRENT FOR LOGIC | I _{DD} | V _{DD} =5V | - | 2.0 | 3.0 | mA |
| INPUT VOLTAGE | HIGH | V _{IH} | - | 2.2 | - | V _{DD} |
| | LOW | V _{IL} | - | 0 | - | 0.6 |
| OUTPUT VOLTAGE | HIGH | V _{OH} | I _{OH} =-0.205mA | 2.4 | - | V |
| | LOW | V _{OL} | I _{OL} =1.6mA | - | - | 0.4 |
| *LED BACKLIGHT | VOLTAGE | V _f | I _f =550mA | - | 4.2 | 4.5 |
| | CURRENT | I _f | - | - | 550 | 600 |
| | POWER CONSUMPTION | PD | - | - | 2310 | - |
| | LUMINOUS | L | I _f =550mA | 70 | - | - |
| | COLOR | - | - | - | - | - |

*ONLY APPLIES TO MODULES WITH BACKLIGHT

| ABSOLUTE MAXIMUM RATINGS | | | | | |
|------------------------------|----------------------------------|----------------------|-----------------|-----------------|------|
| ITEM | SYMBOL | TEST CONDITION | STANDARD VALUE | | UNIT |
| | | | MIN | MAX | |
| 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 | - | 0.5 | 10.0 | V |
| INPUT VOLTAGE | V _I | T _a =25°C | V _{SS} | V _{DD} | V |
| OPERATING TEMPERATURE | T _{opr} | LCM-H | -20 | 80 | °C |
| STORAGE TEMPERATURE | T _{stg} | LCM-H | -30 | 85 | °C |

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

| | |
|---|----------------------------------|
| REV. B | PART NUMBER LCM-X02004DXX/D-Y |
| 9.22mm CHARACTER HEIGHT, 20 x 4 CHARACTERS, 5 x 8 DOT MATRIX LCD MODULE, STN YELLOW, 1/16 DUTY, 1/5 BIAS. | |

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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.

| | | |
|--------------------|-------------|---|
| | | 290 E. HELEN ROAD PALATINE, IL 60067-6976 PHONE: +1.847.359.2790 US WEB: www.lumex.com TW WEB: www.lumex.com.tw |
| DRAWN BY: SA-CT | CHECKED BY: | APPROVED BY: |
| DATE: 11.13.00 | | PAGE: 2 OF 2 |
| SCALE: N/A | | |