



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

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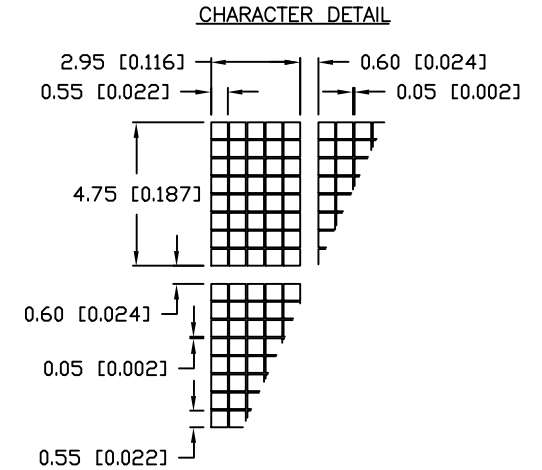
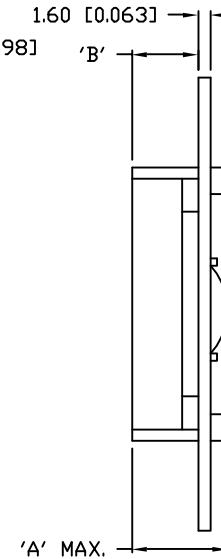
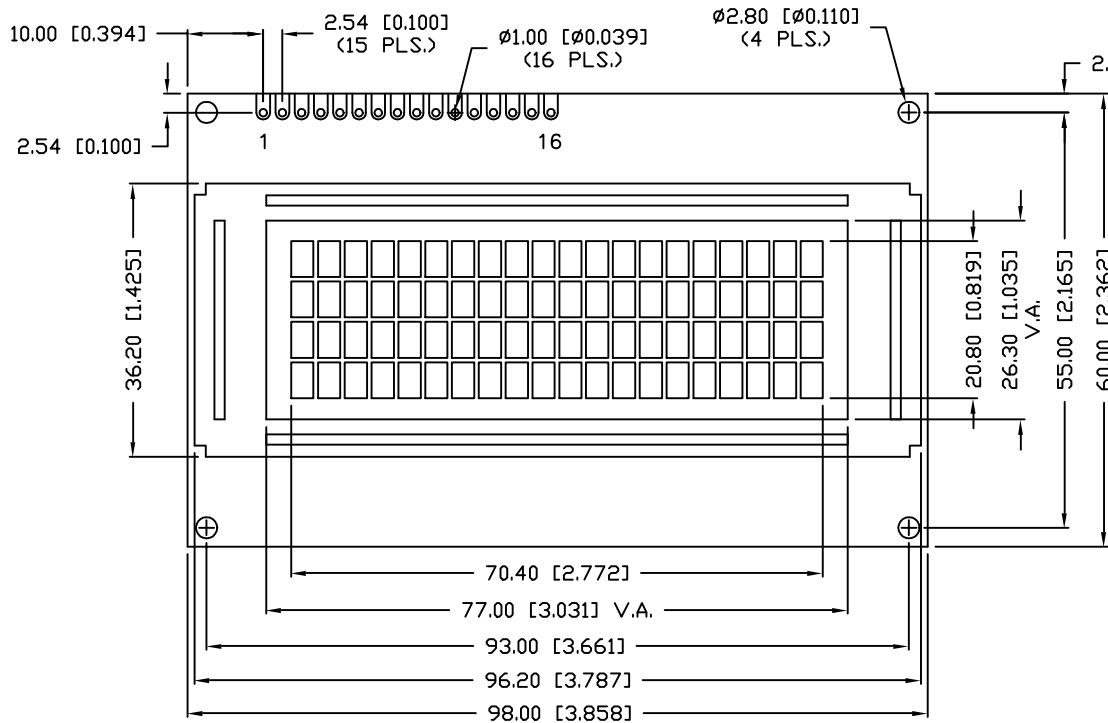
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| P/N PREFIX/SUFFIX TABLE | | |
|-------------------------|-----|-------------------------------------|
| LCM-X | DXX | DESCRIPTION |
| STANDARD | S | SR STN, REFLECTIVE |
| | | SF STN, TRANSFLECTIVE(W/ BACKLIGHT) |
| HIGH TEMP. | H | TR TN, REFLECTIVE |
| | | TF TN, TRANSFLECTIVE(W/ BACKLIGHT) |

CAUTION: STATIC SENSITIVE DEVICE
FOLLOW PROPER E.S.D. HANDLING PROCEDURES
WHEN WORKING WITH THIS PART.

| | | |
|---------------|-------------------------------------|--------|
| PART NUMBER | | REV. |
| LCM-X02004DXX | | A |
| REV. | E.C.N. NUMBER AND REVISION COMMENTS | DATE |
| A | E.C.N. #10BRDR. & REDRAWN. | 9-1-98 |

| TYPE | DIM. | A | B |
|----------------|------|------|-----|
| WITH BACKLIGHT | | 12.7 | 8.7 |
| NO BACKLIGHT | | 8.8 | 4.8 |



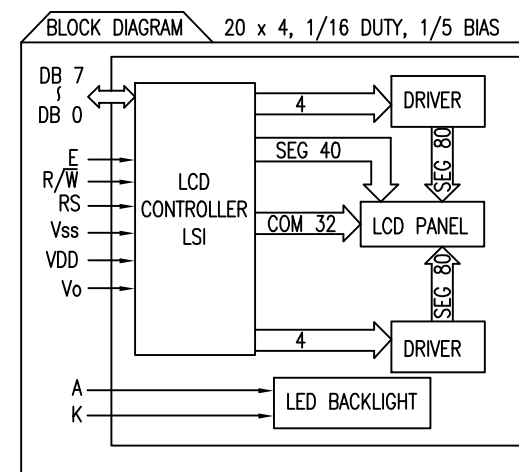
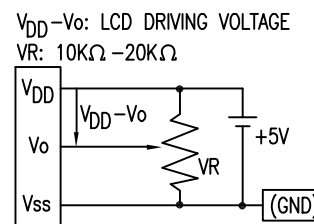
UNCONTROLLED DOCUMENT

*UNLESS OTHERWISE SPECIFIED TOLERANCE IS $\pm 0.25\text{mm}$ ($\pm 0.010''$)

| | | | |
|---|------------------------------|--|--|
| REV. A | PART NUMBER LCM-X02004DXX | CONFIDENTIAL INFORMATION THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF LUMEX INC. EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY LUMEX INC., THE HOLDER OF THIS DOCUMENT SHALL KEEP ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL AND SHALL PROTECT SAME IN WHOLE OR IN PART FROM DISCLOSURE AND DISSEMINATION TO ALL THIRD PARTIES. | 290 E. HELLEN ROAD PALATINE, ILLINOIS 60067 PHONE: 1-847-359-2790 WEB: HTTP://WWW.LUMEX.COM |
| 4.75mm CHARACTER HEIGHT, 5 x 8 DOT MATRIX, 20 x 4 LCD MODULE, 1/16 DUTY, 1/5 BIAS. | | 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. | DATE: 6-18-98 |
| | | DRAWN BY: SA/DU/BC | CHECKED BY: APPROVED BY: DATE: 6-18-98 |
| | | | PAGE: 1 OF 2 SCALE: N/A |

| REV. | E.C.N. NUMBER AND REVISION COMMENTS | DATE |
|------|-------------------------------------|--------|
| A | E.C.N. #10BRDR. & REDRAWN. | 9-1-98 |

| 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 |



| 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} V | |
| | LOW | V _{IL} | - | 0 | 0.6 | V | |
| OUTPUT VOLTAGE | HIGH | V _{OH} | I _{OH} =-0.205mA | 2.4 | - | V | |
| | LOW | V _{OL} | I _{OL} =1.6ma | - | 0.4 | V | |
| *LED BACKLIGHT | VOLTAGE | V _f | I _f =300mA | - | 4.2 | 4.5 | V |
| | CURRENT | I _f | - | - | 300 | 600 | mA |
| | POWER CUNSUMPTION | PD | - | - | 1260 | - | mW |
| | LUMINOUS | L | I _f =300mA | 70 | - | - | cd/m ² |
| | COLOR | - | - | - | - | - | nm |

*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 | - | 4.2@50°C | 4.8@0°C | V |
| INPUT VOLTAGE | V _I | T _a =25°C | V _{SS} | V _{DD} | V |
| | | LCM-S | 0 | 50 | °C |
| OPERATING TEMPERATURE | T _{opr} | LCM-H | -20 | 70 | °C |
| | | LCM-S | -20 | 70 | °C |
| STORAGE TEMPERATURE | T _{stg} | LCM-H | -30 | 85 | °C |

*UNLESS OTHERWISE SPECIFIED TOLERANCE IS ±0.25mm (±0.010")

| | |
|---|------------------------------|
| REV. A | PART NUMBER LCM-X02004DXX |
| 4.75mm CHARACTER HEIGHT, 5 x 8 DOT MATRIX, 20 x 4 LCD MODULE, 1/16 DUTY, 1/5 BIAS. | |

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|-----------------------|-------------|--------------|---------------|
| DRAWN BY: SA/DU/BC | CHECKED BY: | APPROVED BY: | DATE: 6-16-98 |
| | | | PAGE: 2 OF 2 |
| | | | SCALE: N/A |