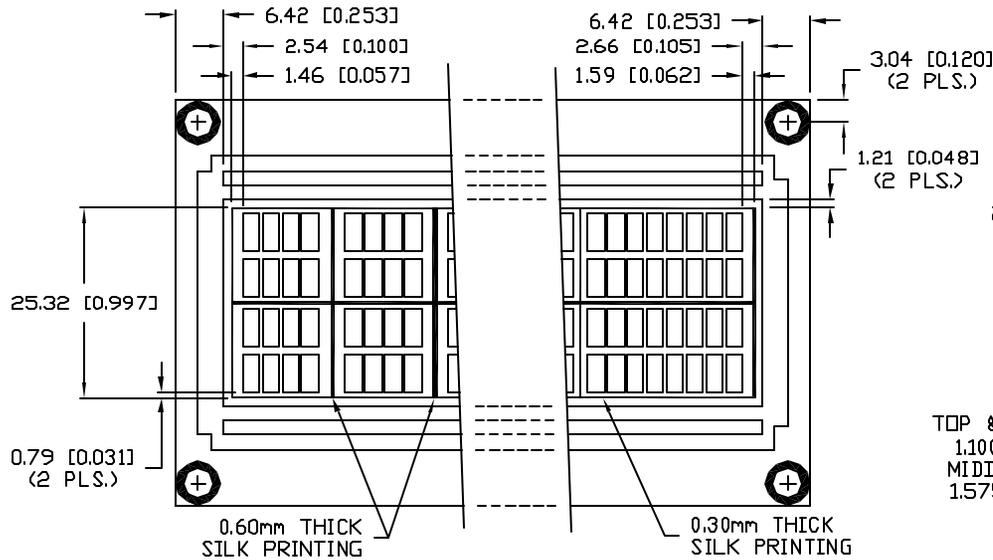


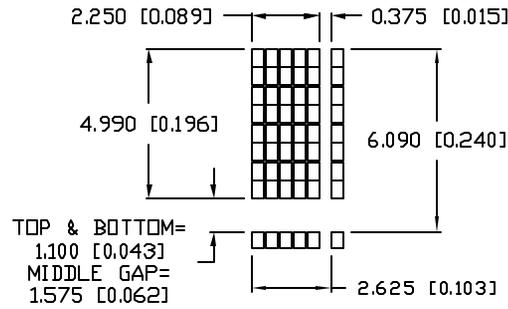
PART NUMBER
LCM-S10404DSF-Y1P

REV.
A

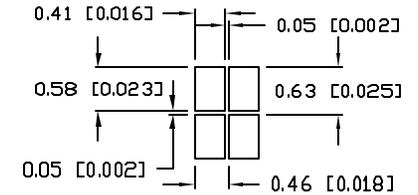
| REV. | E.C.N. NUMBER AND REVISION COMMENTS | DATE |
|------|-------------------------------------|----------|
| A | E.C.N. #10489./ | 12-22-98 |



CHARACTER DETAIL



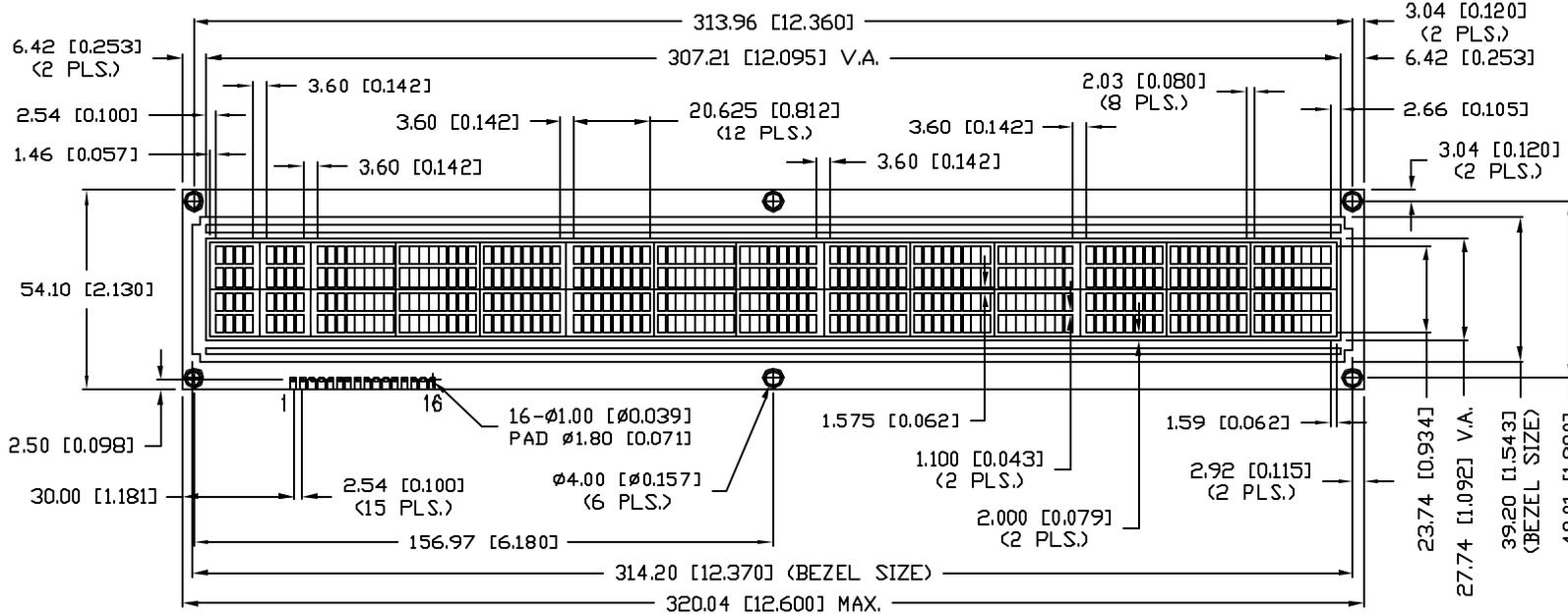
PIXEL DETAIL



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

NOTES:

- 0.3mm THICK SILK SCREEN ON FRONT PANEL UNLESS OTHERWISE SPECIFIED.
- 16 PIN SINGLE ROW HEADER, SAMTEC PART#: MTSW-116-07-S-S-215 OR EQUIVALENT.



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

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

REV. A PART NUMBER LCM-S10404DSF-Y1P

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PHONE: 1-847-359-2790
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4.99mm CHARACTER HEIGHT, 104 x 4 CHARACTER LCD MODULE, TOP VIEW, STN, YELLOW-GREEN BACKGROUND, TRANSFLECTIVE W/LED BACKLIGHT, 1/33 DUTY, 16 PINS.

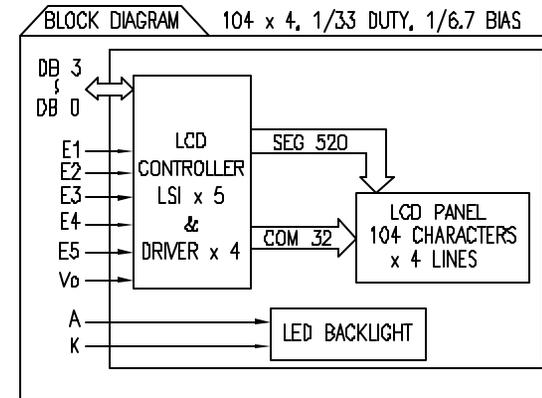
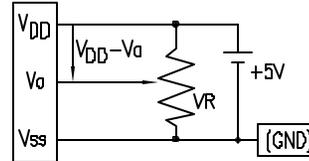
RELIABILITY NOTE
OUR MANY YEARS OF EXPERIENCE DATA ACCUMULATION INDICATE THAT SOLDER HEAT IS A MAJOR CAUSE OF EARLY AND FUTURE FAILURE. PLEASE PAY ATTENTION TO YOUR SOLDERING PROCESS.

| | | | |
|--------------------|-------------|--------------|---------------|
| DRAWN BY: SA/DU/BC | CHECKED BY: | APPROVED BY: | DATE: 9-30-98 |
| | | | PAGE: 1 OF 2 |
| | | | SCALE: N/A |

| | | |
|-------------------|-------------------------------------|------|
| PART NUMBER | | REV. |
| LCM-S10404DSF-Y1P | | A |
| 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 ₀ | - | | FOR LCD DRIVE | |
| 4 | RS | H/L | REGISTER SELECT SIGNAL H: DATA INPUT L: INSTRUCTION INPUT | | |
| 5 | R/ \bar{W} | H/L | H: DATA READ (MODULE \rightarrow MPU) L: DATA WRITE (MODULE \leftarrow MPU) | | |
| 6 | E1 | H,H \rightarrow L | ENABLE 1 | | |
| 7 | E2 | H,H \rightarrow L | ENABLE 2 | | |
| 8 | E3 | H,H \rightarrow L | ENABLE 3 | | |
| 9 | E4 | H,H \rightarrow L | ENABLE 4 | | |
| 10 | E5 | H,H \rightarrow L | ENABLE 5 | | |
| 11~14 | DB0~DB3 | H/L | DATA BUS LINE | | |
| 15 | A | - | ANODE | LED BACKLIGHT | |
| 16 | K | - | CATHODE | LED BACKLIGHT | |

V_{DD}-V₀: LCD DRIVING VOLTAGE
VR: 10K Ω -20K Ω



| ELECTRICAL CHARACTERISTICS | | V _{DD} =4.5V to 5.5V, 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 | - | 2.5 | 3.0 | mA |
| INPUT VOLTAGE | HIGH | V _{IH} | - | 2.2 | - | V _{DD} V |
| | LOW | V _{IL} | - | -0.3 | - | 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 | FORWARD VOLTAGE | V _f | - | 4.3 | 5.0 | V |
| | FORWARD CURRENT | I _f | V _f =5V | - | 1200 | mA |
| | REVERSE VOLTAGE | V _r | - | 8 | - | V |
| | REVERSE CURRENT | I _r | V _r =8V | - | 12000 | μ A |
| | POWER DISSIPATION | PD | - | - | 6 | W |
| | LUMINOUS INTENSITY | I _v | - | 100 | 150 | - |

*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 | 4.5 | 5.5 | V |
| SUPPLY VOLTAGE FOR LCD DRIVE | V ₀ | T _a =25°C | V _{DD} -13.5 | V _{DD} +0.3 | V |
| INPUT VOLTAGE | V _I | T _a =25°C | V _{SS} | V _{DD} | V |
| OPERATING TEMPERATURE | T _{opr} | LGM-S | -10 | 60 | °C |
| | | LGM-H | -20 | 70 | °C |
| STORAGE TEMPERATURE | T _{stg} | LGM-S | -20 | 70 | °C |
| | | LGM-H | -30 | 85 | °C |

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| REV. | PART NUMBER |
| A | LCM-S10404DSF-Y1P |

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4.99mm CHARACTER HEIGHT, 104 x 4 CHARACTER LCD MODULE, TOP VIEW, STN, YELLOW-GREEN BACKGROUND, TRANSLFECTIVE W/LED BACKLIGHT, 1/33 DUTY, 16 PINS.

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| | | | PAGE: 2 OF 2 |
| SA/BC | | | SCALE: N/A |

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