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|----------------------|-------|----------------------|------------|
| MC20803A6W-GPTLY | 2 x 8 | 5mm Character Height | LCD Module |
| Specification | | | |
| Version: 1 | | Date: 29/09/2016 | |
| Revision | | | |
| | | | |

| Display Features | |  | |
|-----------------------|-------------------------|---|--------------|
| Character Count | 2 x 8 | | |
| Appearance | Black on Yellow/Green | | |
| Logic Voltage | 5V | | |
| Interface | Parallel | | |
| Font Set | English / Japanese | | |
| Display Mode | Transflective | | |
| Character Height | 2.595mm | | |
| LC Type | STN | | |
| Module Size | 25.00 x 17.50 x 6.30 mm | | |
| Operating Temperature | 0°C ~ +50°C | | |
| Construction | COB | | Box Quantity |
| LED Backlight | Yellow/Green | --- | --- |

* - For full design functionality, please use this specification in conjunction with the ST7066U specification. (Provided Separately)

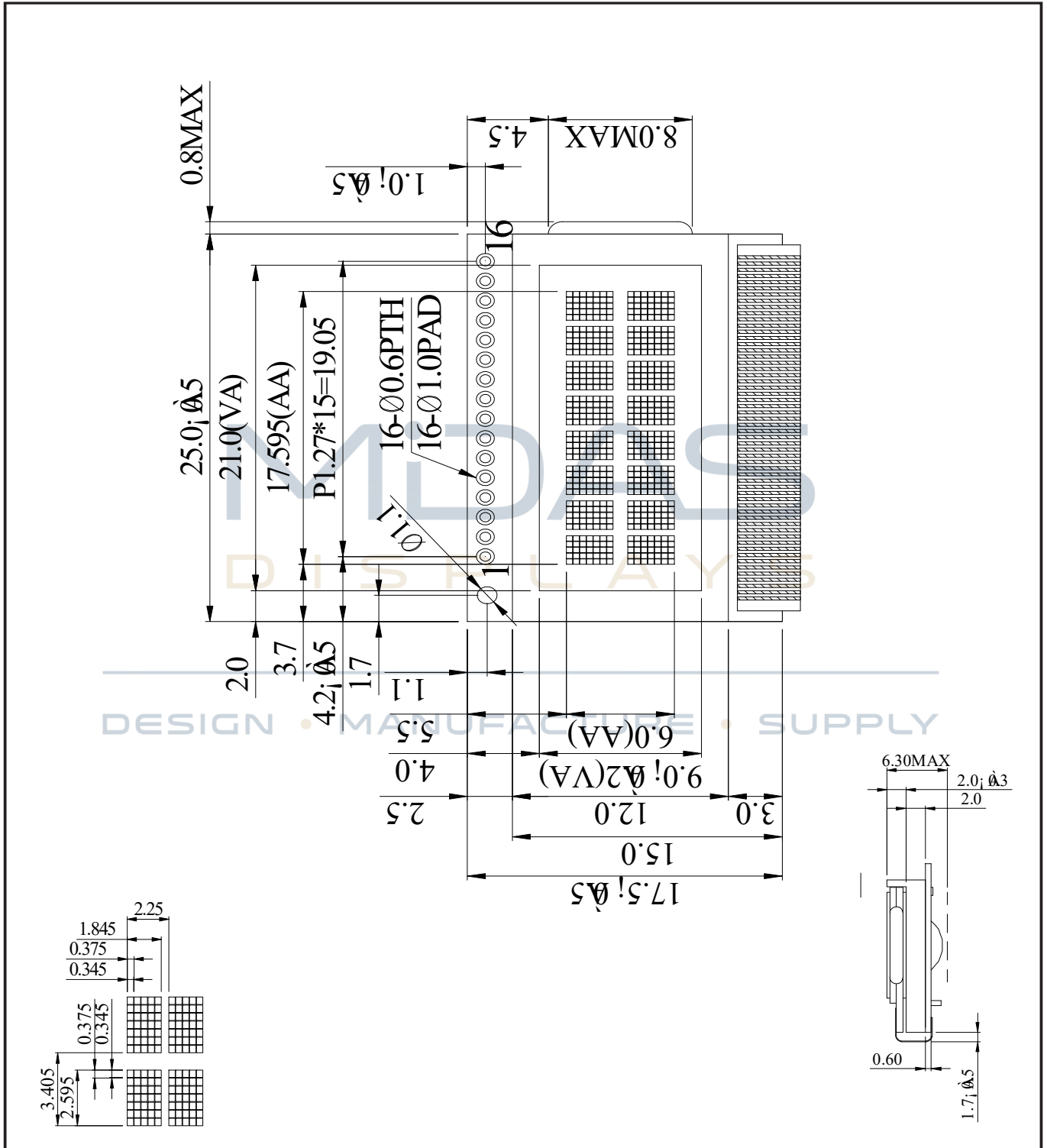
| Display Accessories | |
|--------------------------|--|
| Part Number | Description |
| MCCMDB-16DIL | LCD Interconnect board, can be driven from either a PC or a single Board computer with a USB output. |
| MCCBL1A16SLIP-16DILS-150 | 16 Way, Single in-line to Dual In-line connector Cable. |
| MCCBL1A16SLIP-16SILS-150 | 16 Way, Single in-line to Single In-line connector Cable. |

| Optional Variants | | |
|-------------------|-------------|---------|
| Fonts | Appearances | Voltage |
| | | |



Mechanical Specifications

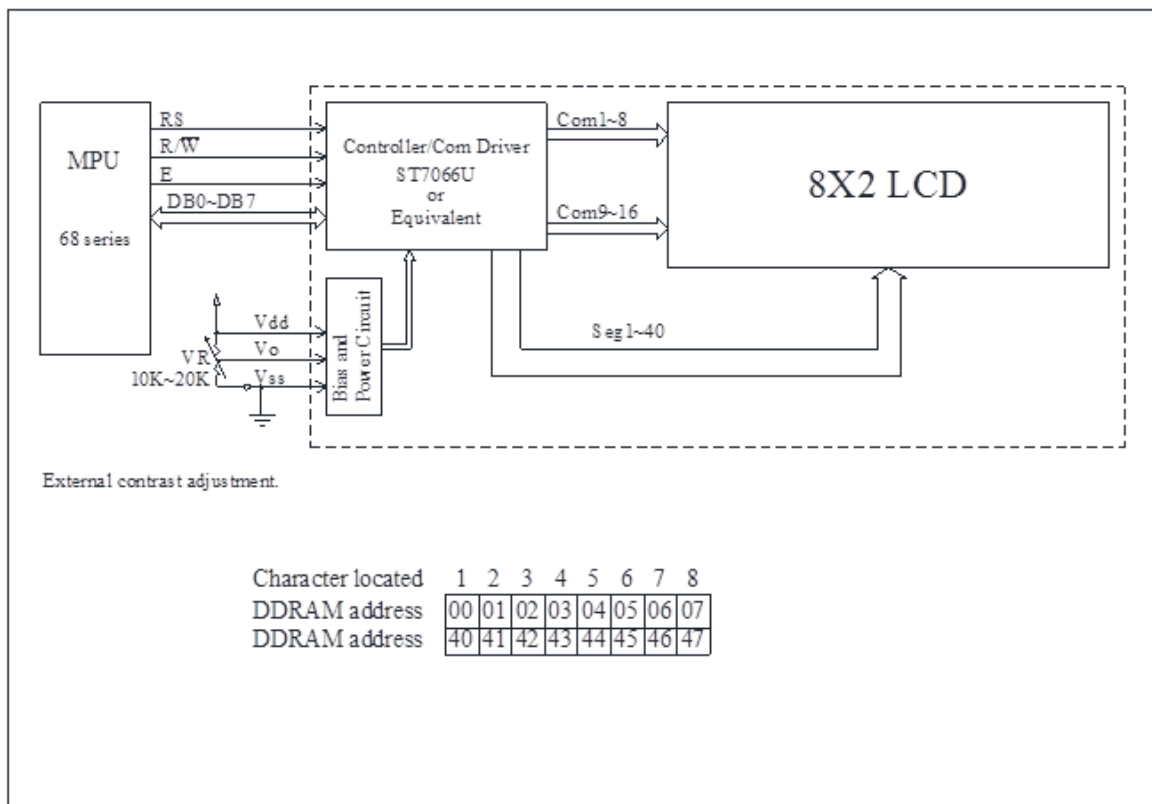
| | | | | | |
|----------------|--|----------|-----------------|---------------|--------------|
| Module Size | 25.00 x 17.50 x 6.30 (With Backlight) | | | | W x H x D mm |
| Viewing Area | 21.0 x 9.00 | W x H mm | Hole-to-Hole | 53.00 x 27.00 | W x H mm |
| Character Size | 1.845 x 2.595 | W x H mm | Character Pitch | 2.250 x 3.405 | W mm |
| Dot Size | 0.345 x 0.345 | W x H mm | Dot Pitch | 0.375 x 0.375 | W x H mm |



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Pin Layout

| PI | SYMBOL | DESCRIPTION | REMARKS |
|----|--------|---------------------------|---------|
| 1 | Vss | GND | |
| 2 | Vdd | Power supply for LCM | 5.0V |
| 3 | V0 | Operating Voltage for LCD | |
| 4 | RS | Instruction Code | |
| 5 | R/W | Data Read / Write | |
| 6 | E | Chip Enable Signal | |
| 7 | DB0 | Data bus line | |
| 8 | DB1 | Data bus line | |
| 9 | DB2 | Data bus line | |
| 10 | DB3 | Data bus line | |
| 11 | DB4 | Data bus line | |
| 12 | DB5 | Data bus line | |
| 13 | DB6 | Data bus line | |
| 14 | DB7 | Data bus line | |
| 15 | LED+ | Power Supply for BKL | |
| 16 | LED- | Power Supply for BKL | |



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Font Map

| Upper 4bit Lower 4bit | LLLL | LLLH | LLHL | LLHH | LHLL | LHLH | LHHL | LHHH | HLLL | HLLH | HLHL | HLHH | HHLL | HHLH | HHHL | HHHH |
|--------------------------------|------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| LLLL | CG RAM (1) | | | | | | | | | | | | | | | |
| LLLH | (2) | | | | | | | | | | | | | | | |
| LLHL | (3) | | | | | | | | | | | | | | | |
| LLHH | (4) | | | | | | | | | | | | | | | |
| LHLL | (5) | | | | | | | | | | | | | | | |
| LHLH | (6) | | | | | | | | | | | | | | | |
| LHHL | (7) | | | | | | | | | | | | | | | |
| LHHH | (8) | | | | | | | | | | | | | | | |
| HLLL | (1) | | | | | | | | | | | | | | | |
| HLLH | (2) | | | | | | | | | | | | | | | |
| HLHL | (3) | | | | | | | | | | | | | | | |
| HLHH | (4) | | | | | | | | | | | | | | | |
| HHLL | (5) | | | | | | | | | | | | | | | |
| HHLH | (6) | | | | | | | | | | | | | | | |
| HHHL | (7) | | | | | | | | | | | | | | | |
| HHHH | (8) | | | | | | | | | | | | | | | |

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| Page 4 of 5 | | | |



Absolute Maximum Ratings

| Item | Symbol | Condition | Min | Typ | Max | Unit |
|-----------------------|--------|-----------|------|-----|-----|------|
| Power Supply (LOGIC) | Vdd | 25 °C | -0.3 | --- | 7.0 | V |
| Power Supply (LCD) | V0 | 25 °C | -0.3 | --- | 13 | V |
| Input Voltage | Vin | 25 °C | Vss | --- | Vdd | V |
| Operating Temperature | Vopr | --- | 0 | --- | 50 | °C |
| Storage Temperature | Vstg | --- | -20 | --- | 70 | °C |

Electronic Characteristics

| Item | Symbol | Condition | Minimum | Typical | Maximum | Unit |
|----------------------|-----------------------------------|-----------------------|-----------------|---------|-----------------|------|
| Input Voltage High | V _{IH} | --- | 0.70 | --- | V _{DD} | V |
| Input Voltage Low | V _{IL} | --- | V _{SS} | --- | 0.60 | V |
| Output Voltage High | V _{OH} | --- | 3.90 | --- | Vdd | V |
| Output Voltage Low | V _{OL} | --- | --- | --- | 0.40 | V |
| Supply Voltage Logic | V _{DD} ~ V _{SS} | --- | 4.50 | 5.00 | 5.50 | V |
| Supply Voltage LCD | V _{DD} ~ V ₀ | Ta=25°C | 3.20 | 3.40 | 3.60 | V |
| Supply Current | I _{DD} | V _{DD} =5.0V | --- | 2.00 | --- | mA |

LCD Characteristics

| For STN/FSTN LCD Panel Types | | | | | | |
|------------------------------|---------------------------------|-----------|---------|---------|---------|--------|
| Item | Symbol | Condition | Minimum | Typical | Maximum | Unit |
| Viewing Angle | Φ ₂ – Φ ₁ | CR ≥ 2 | 20 | --- | --- | ψ=180° |
| | Θ | --- | --- | | | |
| Contrast Ratio | CR | --- | --- | 10 | 15 | --- |
| Response Time (Rise) | TR | --- | --- | 80 | 160 | ms |
| Response Time (Fall) | TF | --- | --- | 100 | 120 | ms |

LED Characteristics

| Item | Symbol | Condition | Minimum | Typical | Maximum | Unit |
|-------------------------|------------------|------------------------|---------|---------|---------|-------------------|
| Supply Current | I _{LED} | V=3.1V | --- | 15 | --- | mA |
| Supply Voltage | V | --- | 2.90 | 3.10 | 3.30 | V |
| Reverse Voltage | VR | --- | --- | --- | 3 | V |
| Luminance (Without LCD) | IV | I _{LED} =15mA | 1600 | 2000 | --- | Cd/m ² |
| Wave Length | λP | I _{LED} =15mA | 565 | 570 | 575 | nm |
| LED Life Time | --- | I _{LED} =15mA | --- | 50K | --- | Hour |

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