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|----------------------|------------------|------------------|
| MC128064A6W-FPTLW-V2 | 128 x 64 | LCD Module |
| Specification | | |
| Version: 1 | Date: 31/10/2016 | |
| Revision | | |
| 1 | 31/10/2016 | Initial Release. |
| 2 | 26/02/2018 | Updated Drawing. |

| Display Features | | | |
|-----------------------|-----------------------|--------------|------------------|
| Resolution | 128 x 64 | | |
| Appearance | Black on White | | |
| Logic Voltage | 5V | | |
| Interface | Parallel | | |
| Font Set | N/A | | |
| Display Mode | Transflective | | |
| LC Type | FSTN | | |
| Module Size | 93.00 x 70.00 x 13.00 | | |
| Operating Temperature | -20°C ~ +70°C | | |
| Construction | COB | Box Quantity | Weight / Display |
| LED Backlight | White | 30 pcs | 75 grams |



RoHS
compliant

* - For full design functionality, please use this specification in conjunction with the NT7107 specification. (Provided Separately)

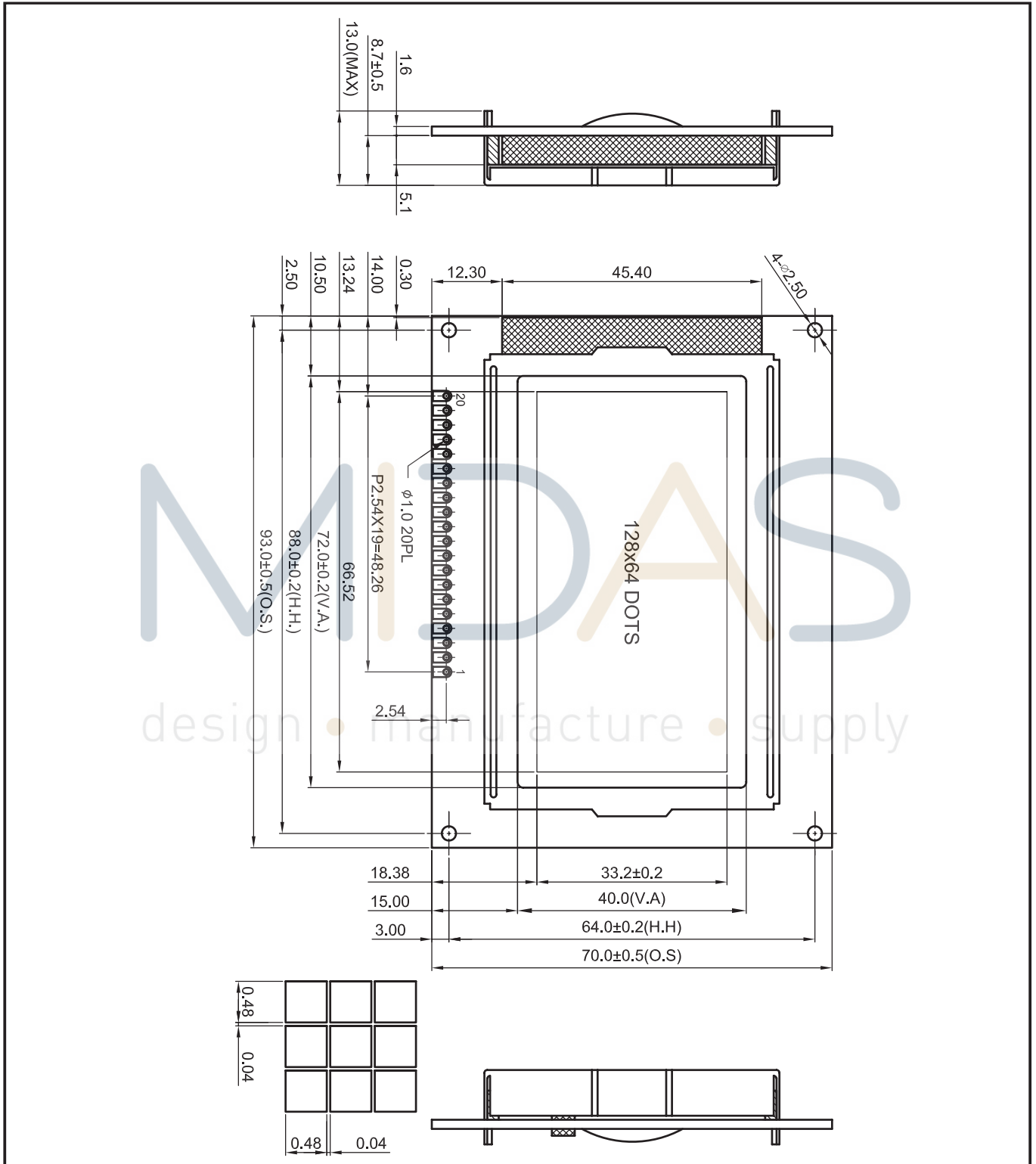
| Display Accessories | |
|---------------------|--|
| Part Number | Description |
| VBWFD1 | USB PIC18F2550 microcontroller board to 20-way Single in-line COB Graphic LCD. |
| | |
| | |

| Optional Variants | |
|--|---------|
| Appearances | Voltage |
| Black on Yellow/Green White on Blue | 3V |
| | |
| | |



Mechanical Specifications

| | | | | | |
|--------------|---|----------|--------------|---------------|--------------|
| Module Size | 93.00 x 70.00 x 13.00 (With Backlight) | | | | W x H x D mm |
| Viewing Area | 72.00 x 40.00 | W x H mm | Hole-to-Hole | 88.00 x 64.00 | W x H mm |
| Dot Size | 0.48 x 0.48 | W x H mm | Dot Pitch | 0.04 x 0.04 | W x H mm |



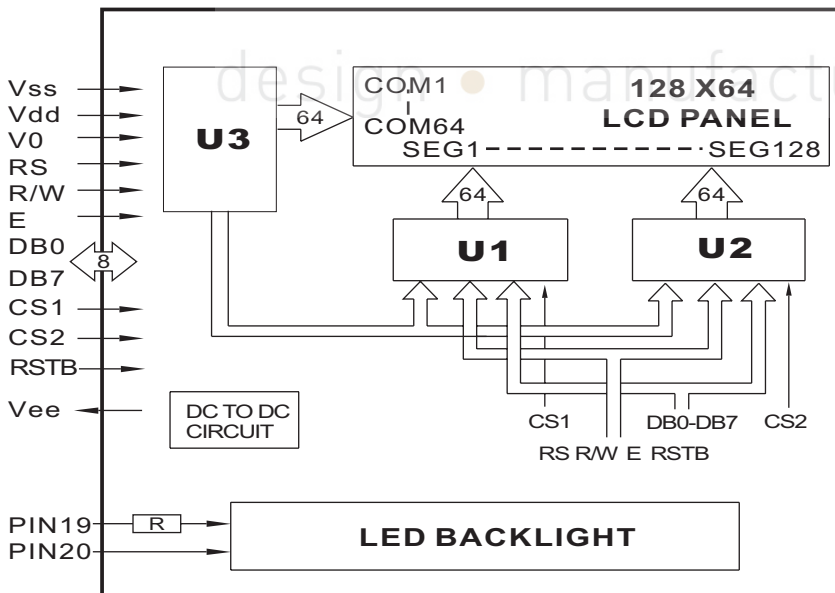
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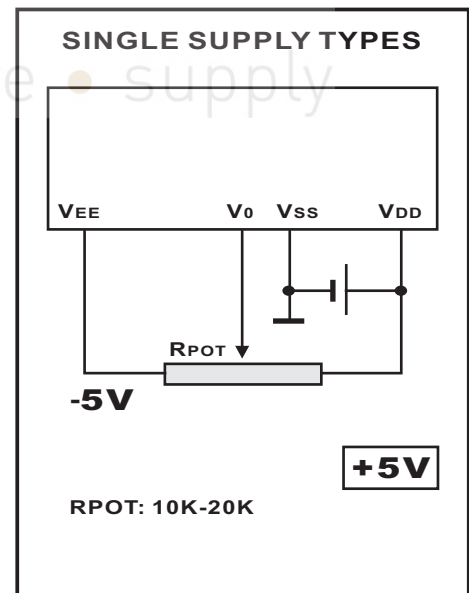
Pin Layout

| Djb | Gra Vc` | 8 YgWjdjcb | FYa Uf_g |
|-----|---------|------------------------------|----------|
| 1 | Vss | GND | |
| 2 | Vdd | Power Supply for LCM | 5.0V |
| 3 | V0 | Contrast Adjust | |
| 4 | RS | Register Select Signal | |
| 5 | R/W | Data Read / Write | |
| 6 | E | 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 | CS1 | When CS1=H, CS2=L, Select U1 | |
| 16 | CS2 | When CS1=L, CS2=H, Select U2 | |
| 17 | RST | Reset Signal | |
| 18 | VEE | Negative Voltage Output | |
| 19 | LED+ | Power Supply for BKL | 5.0V |
| 20 | LED- | Power Supply for BKL | |

Block Diagram



Power Supply Diagram



| | | |
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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 | Vdd -19.00 | --- | Vdd +0.3 | V |
| Input Voltage | Vin | 25°C | -0.3 | --- | Vdd +0.3 | V |
| Operating Temperature | Vopr | --- | -20 | --- | 70 | C |
| Storage Temperature | Vstg | --- | -30 | --- | 80 | C |

Electronic Characteristics

| Item | Symbol | Condition | Min | Typ | Max | Unit |
|-------------------------------|-------------------|-----------|------|-----|------|------|
| Input Voltage | Vlcm = Vdd | --- | 2.7 | 5.0 | 5.5 | v |
| Supply Current | Idd | Vdd=5V | --- | 2.1 | --- | mA |
| Driving Voltage for LCD Panel | Vlcd = (Vdd - V0) | -20°C | 8.90 | --- | 9.15 | v |
| | | 0°C | 8.50 | --- | 8.80 | |
| | | 25°C | 8.40 | --- | 8.70 | |
| | | 50°C | 8.30 | --- | 8.60 | |
| | | 70°C | 7.85 | --- | 8.20 | |

LCD Characteristics

| For STN/FSTN LCD Panel Types | | | | | | |
|------------------------------|-------------------|-----------|-----|-----|-----|------|
| Item | Symbol | Condition | Min | Typ | Max | Unit |
| Viewing Angle | $\Phi 2 - \Phi 1$ | K = 4 | 40° | --- | --- | Deg |
| | Θ | | 60° | | | |
| Contrast Ratio | K | --- | --- | 10 | --- | --- |
| Response Time (Rise) | TR | --- | --- | 150 | 250 | ms |
| Response Time (Fall) | TF | --- | --- | 150 | 250 | ms |

LED Characteristics

| Item | Symbol | Condition | Min | Typ | Max | Unit |
|------------------------------|--------------|--------------|------|-----|------|-------------------|
| LED Forward Voltage | Vf | 25°C If=25mA | --- | 5.0 | --- | V |
| LED Forward Current* | If | 25°C | --- | 25 | --- | mA |
| LED Reverse Current | Ir | 25°C Vr=5.0V | --- | --- | 20 | μA |
| LED Colour Range | X Coordinate | 25°C If=25mA | 0.26 | --- | 0.30 | --- |
| | Y Coordinate | | 0.27 | --- | 0.31 | --- |
| LED Brightness (Without LCD) | Lv | 25°C If=25mA | --- | 310 | --- | cd/m ² |
| LED Brightness Uniformity | Lvmin/Lvmax | 25°C If=25mA | 70 | --- | --- | Ratio |
| LED Life Time | --- | 25°C If=25mA | 9K | --- | --- | Hours |

Attention: It is constant current, not constant voltage, which should be applied when driving the LED backlight, please ensure you adhere to this rule.

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