Displays

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| MCOB050016AV-WP | $50 \times 16$ | White | OLED Module |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Specification |  |  |  | Date: 31/10/2016 |
| Version: 1 | Revision |  |  |  |  |
|  |  |  |  |  |  |


| Display Features |  |  |  |
| :---: | :---: | :---: | :---: |
| Resolution | $50 \times 16$ |  |  |
| Appearance | White on Black |  |  |
| Logic Voltage | 5 V |  |  |
| Interface | Parallel |  | plia |
| Module Size | $58.00 \times 32.00 \times 10.00$ |  |  |
| Operating Temperature | $-40^{\circ} \mathrm{C} \sim+80^{\circ} \mathrm{C}$ | Box Quantity | Weight / Display |
| Construction | COB | --- | --- |

*     - For full design functionality, please use this specification in conjunction with the MC0010 specification. (Provided Separately)

| Display Accessories |  |
| :--- | :--- |
| Part Number | Description |
| MCCMDB-16DIL | LCD Interconnect board, can be <br> driven from either a PC or a <br> single board computer with a <br> USB output. |
| MCCBL1A16DILP <br> -DILS-150 | 16 Way, Dual in-line to Dual in- <br> line connector cable. |
|  |  |


| Optional Variants |  |
| :--- | :--- |
| Appearance | Voltage |
| Yellow on Black |  |
| Red on Black |  |
| Green on Black |  |
| Blue on Black |  |
|  |  |
|  |  |


| Mechanical Specifications |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Module Size | $58.00 \times 32.00 \times 10.00$ ( With Backlight) |  |  |  | $\mathrm{W} \times \mathrm{H} \times \mathrm{D} \mathrm{mm}$ |
| Viewing Area | $38.00 \times 16.00$ | $\mathrm{~W} \times \mathrm{H} \mathrm{mm}$ | Hole-to-Hole | $53.00 \times 27.00$ | $\mathrm{~W} \times \mathrm{H} \mathrm{mm}$ |
| Dot Size | $0.56 \times 0.66$ | $\mathrm{~W} \times \mathrm{H} \mathrm{mm}$ | Dot Pitch | $0.60 \times 0.70$ | $\mathrm{~W} \times \mathrm{H} \mathrm{mm}$ |



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| Pin layout |  |  |  |
| :---: | :---: | :--- | :---: |
| Pin | Symbol | Description | Remarks |
| 1 | VSS | Ground |  |
| 2 | VDD | Supply Voltage for Logic |  |
| 3 | NC | No Connection |  |
| 4 | RS | H: Data L: Instruction Code |  |
| 5 | R/W | H: Read(MPU-->Module) L: Write(MPU-->Module) |  |
| 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 | NC | No Connection |  |
| 16 | NC | No Connection |  |



| $C G A=1$ | $C G A=0$ |  |
| :---: | :---: | :---: |
| $\begin{aligned} & \text { GXA }=10000000 \\ & \text { GYA }=01000001 \end{aligned}$ | $\begin{aligned} & \text { GXA }=10000000 \\ & \text { GYA }=01000000 \end{aligned}$ |  |
| $\begin{aligned} & \text { GXA }=10000001 \\ & \text { GYA }=01000001 \end{aligned}$ | $\begin{aligned} & \text { GXA }=10000001 \\ & \text { GYA }=01000000 \end{aligned}$ | N |
| $\begin{aligned} & \text { GXA }=10000010 \\ & \text { GYA }=01000001 \end{aligned}$ | $\begin{aligned} & \text { GXA }=10000010 \\ & \text { GYA }=01000000 \end{aligned}$ | $\omega$ |
| $\begin{aligned} & \text { GXA }=10000011 \\ & \text { GYA }=01000001 \end{aligned}$ | $\begin{aligned} & \text { GXA }=10000011 \\ & \text { GYA }=01000000 \end{aligned}$ | a |
| ; | $\vdots$ | , |
| ! | $\vdots$ | $\vdots$ |
| $\begin{aligned} & \text { GXA }=10101110 \\ & \text { GYA }=01000001 \end{aligned}$ | $\begin{aligned} & \text { GXA }=10101110 \\ & \text { GYA }=01000000 \end{aligned}$ | $\pm$ |
| $\begin{aligned} & \text { GXA }=10101111 \\ & \text { GYA }=01000001 \end{aligned}$ | $\begin{aligned} & G X A=10101111 \\ & G Y A=01000000 \end{aligned}$ | क |
| $\begin{aligned} & \text { GXA }=10110000 \\ & \text { GYA }=01000001 \end{aligned}$ | $\begin{aligned} & \text { GXA }=10110000 \\ & \text { GYA }=01000000 \end{aligned}$ | ${ }_{6}$ |
| $\begin{aligned} & \text { GXA }=10110001 \\ & \text { GYA }=01000001 \end{aligned}$ | $\begin{aligned} & \text { GXA }=10110001 \\ & \text { GYA }=01000000 \end{aligned}$ | \% |


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| Absolute Maximums Ratings |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Item | Symbol | Minimum | Typical | Maximum | Unit |
| Input Voltage | VI | -0.30 | -- | VDD | V |
| Supply Voltage for Logic | V 0 | -0.30 | -- | 5.30 | V |
| Operating Temperature | Vopr | -40 | -- | 80 | ${ }^{\circ} \mathrm{C}$ |
| Storage Temperature | Vstg | -40 | --- | 80 | ${ }^{\circ} \mathrm{C}$ |

Electronic Characteristics

| Item | Symbol | Condition | Minimum | Typical | Maximum | Unit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Input High Voltage | VIH | --- | 0.80 | --- | VDD | V |
| Input Low Voltage | VIL | --- | GND | --- | 0.20 | V |
| Output High Voltage | VOH | IOH $=-0.5 \mathrm{~mA}$ | 0.80 | --- | VDD | V |
| Output Low Voltage | VOL | IOL $=0.5 \mathrm{~mA}$ | GND | --- | 0.20 | V |
| Supply Voltage for Logic | VDD $\sim$ VSS | --- | 4.80 | 5.00 | 5.30 | V |
| $50 \%$ Checkboard <br> Operating Current. | IDD | VDD $=5 \mathrm{~V}$ | 15 | 19 | 24 | mA |


| OLED Characteristics |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Item | Symbol | Condition | Minimum | Typical | Maximum | Unit |
| Viewing Angle | (V) $\theta$ | --- | 160 | --- | --- | Deg |
|  | (H) $\varphi$ | --- | 160 | --- | --- | Deg |
| Contrast Ratio | CR | Dark | 2000:1 | --- | --- | - |
| Response Time | T Rise | --- | --- | 10 | --- | us |
|  | T Fall | --- | --- | 10 | --- | $\mu \mathrm{s}$ |
| Display with 50\% Checkboard Brightness |  |  | 100 | 120 | --- | $\mathrm{cd} / \mathrm{m}^{2}$ |
| CIEx(Yellow) |  | (CIE1931) | 0.45 | 0.47 | 0.49 | --- |
| CIEy(Yellow) |  | (CIE1931) | 0.48 | 0.50 | 0.52 | --- |


| OLED Life Time |  |  |  |
| :---: | :---: | :---: | :---: |
| Item | Conditions | Typical | Remark |
| Operating Life Time | Ta=25ㅇ. Initial checkboard <br> brightness, 125nits. | 100,000 Hours | --- |


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