


|                      |            |                                   |             |
|----------------------|------------|-----------------------------------|-------------|
| MCOT128064QV-YM      | 128 x 64   | Yellow                            | OLED Module |
| <b>Specification</b> |            |                                   |             |
| Version: 5           |            | Date: 07/06/2017                  |             |
| <b>Revision</b>      |            |                                   |             |
| 0                    | 2015/04/17 | First release                     |             |
| A                    | 2015/05/21 | Modify Life Time.                 |             |
| B                    | 2015/12/08 | Modify Life Time                  |             |
| C                    | 2016/06/01 | Modify Static<br>electricity test |             |
| D                    | 2016/11/02 | Modify thickness.                 |             |

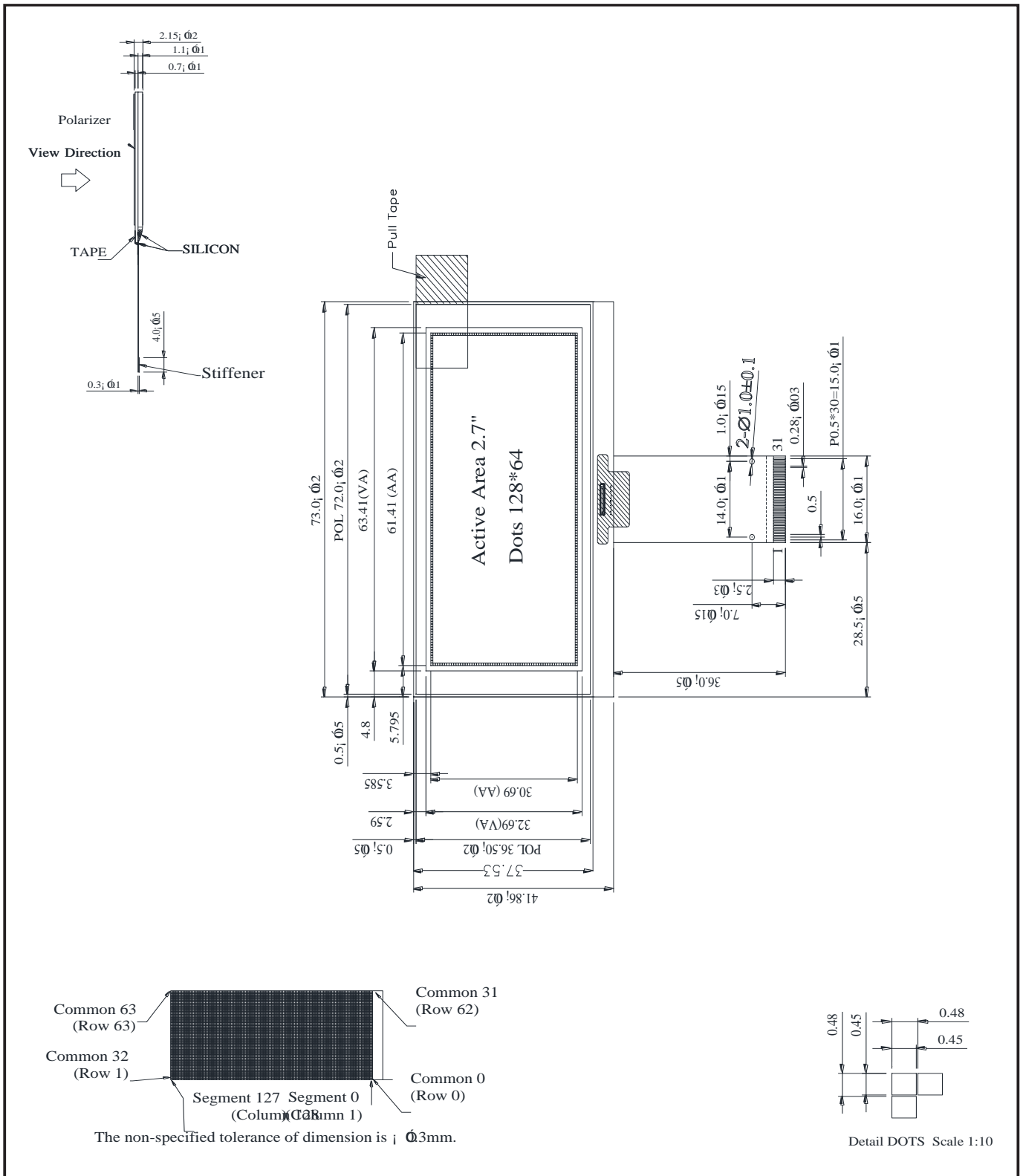
| Display Features      |                         |  | Box Quantity | Weight / Display |
|-----------------------|-------------------------|--|--------------|------------------|
| Resolution            | 128 x 64                |  |              |                  |
| Appearance            | Yellow on Black         |  |              |                  |
| Logic Voltage         | 3V                      |  |              |                  |
| Interface             | Parallel / SPI / I2C    |  |              |                  |
| Module Size           | 73.00 x 41.86 x 2.15 mm |  |              |                  |
| Operating Temperature | -40°C ~ +80°C           | ---  | ---          |                  |
| Construction          | TAB                     | ---  | ---          |                  |

| Display Accessories |  |
|---------------------|--|
| Part Number         | Description  |
| MPBV6               | FFC to cable. Supports up to 40 way. Any driver board that supports 1mm pitch SHDR-40V-S-B receptacle. |
| MCIB12              | UC32 Breakout Board with SD card and LED back light driver. Used in conjunction with MPBV6.            |
|                     |  |

| Optional Variants |         |
|-------------------|---------|
| Appearance        | Voltage |
| Green on Black    |         |
| Blue on Black     |         |
| White on Black    |         |
|                   |         |

# Mechanical Specifications

|              |                                       |          |              |             |              |
|--------------|---------------------------------------|----------|--------------|-------------|--------------|
| Module Size  | 73.00 x 41.86 x 2.15 (With Backlight) |          |              |             | W x H x D mm |
| Viewing Area | 63.41 x 32.69                         | W x H mm | Hole-to-Hole | ---         | W x H mm     |
| Dot Size     | 0.45 x 0.45                           | W x H mm | Dot Pitch    | 0.48 x 0.48 | W x H mm     |



|                 |          |                  |             |
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## Pin layout

| Pin   | Symbol     | Description  | Remarks |
|-------|------------|--|---------|
| 1     | NC(Ground) | No Connection (ground).  |         |
| 2     | VSS        | Ground Pin. Connect to external ground.  |         |
| 3~10  | NC         | No Connection.   |         |
| 11    | VDD        | Power Supply Pin for core logic operation.   |         |
| 12    | BS1        | MCU bus interface selection pins. Select appropriate logic settings:<br>Note: "0" is connected to VSS and "1" is connected to VDD.<br>I2C = BS1: 1 BS2: 0<br>4-Wire SPI = BS1: 0 BS2: 0<br>8-bit 6800 Parallel = BS1:0 BS2:1<br>8-bit 8080 Parallel = BS1: 1 BS2: 1  |         |
| 13    | BS2        |  |         |
| 14    | NC         | No Connection.   |         |
| 15    | CS#        | Chip Select Input, connecting to MCU.<br>Chip is enabled for MCU communication when CS# is pulled Low.   |         |
| 16    | RES#       | Reset Signal Input.<br>Initialisation for chip is executed when pulled Low. Keep pulled High during normal operation.  |         |
| 17    | D/C#       | Data / Command control pin connecting to the MCU.<br>Pin pulled High= Data at D(7:0) will be interpreted as data.<br>Pin pulled Low= Data at D(7:0) will be transferred to a command register.<br>I2C Mode= Pin acts as SA0 for slave address selection.<br>3-wire SPI Serial= This pin must be connected to VSS.  |         |
| 18    | R/W#       | Read / Write control input pin connecting to the MCU interface.<br>6800 Mode= This pin will be used as Read/Write (R/W#). Read will be carried out when pin pulled High and Write mode when pulled Low.<br>8080 Mode= This pin will be the Write (WR#) input. Data Write initiated when on pulled Low and chip selected.<br>I2C or SPI= Must connect to VSS. |         |
| 19    | E/RD#      | MCU Interface Input.<br>6800 Mode= Pin will be used as E (E) signal. Read/Write operation initiated when pin is pulled High and chip selected.<br>8080 Mode= Pin receives Read (RD#) signal. Read operation initiated when pin pulled Low and chip selected.<br>I2C or SPI= Must connect to VSS.   |         |
| 20~27 | D0~D7      | Bi-directional data bus connecting to MCU data bus. Unused pints to tie Low.<br>SPI Mode= D0 will be Serial Clock input (SCLK), D1 will be Serial Data input (DIN) and D2 to be kept NC.<br>I2C Mode= D2 and D1 tied to be tied together and serve as SDAout , SDAin application and D0 is Serial Clock input (SCL).   |         |
| 28    | IREF       | Segment Output Current Reference pin.<br>IREF supplied externally.<br>A Resistor to be connected between this pin and VSS to maintain 10µA current.  |         |
| 29    | VCOMH      | COM Signal deselected voltage Level.<br>Capacitor connected between this pin and VSS.  |         |
| 30    | VCC        | Power Supply for Panel Driving Voltage.  |         |
| 31    | NC(Ground) | No Connection (ground).  |         |

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| Absolute Maximums Ratings  |        |         |         |         |      |
|----------------------------|--------|---------|---------|---------|------|
| Item                       | Symbol | Minimum | Typical | Maximum | Unit |
| Supply Voltage for Display | VI     | 0.00    | ---     | 15.00   | V    |
| Supply Voltage for Logic   | V0     | -0.30   | ---     | 4.00    | V    |
| Operating Temperature      | Vopr   | -40     | ---     | 80      | °C   |
| Storage Temperature        | Vstg   | -40     | ---     | 80      | °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    | ---       | 0.90    | ---     | VDD     | V    |
| Output Low Voltage                | VOL    | ---       | GND     | ---     | 0.10    | V    |
| Supply Voltage for Logic          | VDD    | ---       | 2.80    | 3.00    | 3.30    | V    |
| Supply Voltage for Display        | VCC    | ---       | 12.00   | 13.00   | 14.00   | V    |
| 50% Checkboard Operating Current. | IDD    | VDD=13V   | 20      | 22      | 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      | ---     | $\mu$ s           |
|  | T Fall        | ---       | ---     | 10      | ---     | $\mu$ s           |
| Display with 50% Checkboard Brightness |               |           | 60      | 80      | ---     | cd/m <sup>2</sup> |
| CIEx(Yellow)                           |               | (CIE1931) | 0.45    | 0.47    | 0.49    | ---               |
| CIEx(Yellow)                           |               | (CIE1931) | 0.48    | 0.50    | 0.52    | ---               |

| OLED Life Time      |  |              |        |
|---------------------|--|--------------|--------|
| Item                | Conditions                                   | Typical      | Remark |
| Operating Life Time | Ta=25°C. Initial checkboard brightness, 50%. | 50,000 Hours | ---    |

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