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| MCOT128128RV-BM | 128 x 128 | Blue | OLED Module |
|---|---|---|---|

**Specification**

| Version: 1 | Date: 16/05/2017 |
|---|---|

**Revision**

| | | |
|---|---|---|
| 0 | 29/06/2016 | First release |

| Display Features | |
|---|---|
| Resolution | 128 x 128 |
| Appearance | Blue on Black |
| Logic Voltage | 3V |
| Interface | Parallel / SPI / I2C |
| Module Size | 36.98 x 41.23 x 2.05 mm |
| Operating Temperature | -40°C ~ +80°C |
| Construction | TAB |

RoHS compliant

| Box Quantity | Weight / Display |
|---|---|
| --- | --- |

* - For full design functionality, please use this specification in conjunction with the SSD1327ZB specification. (Provided Separately)

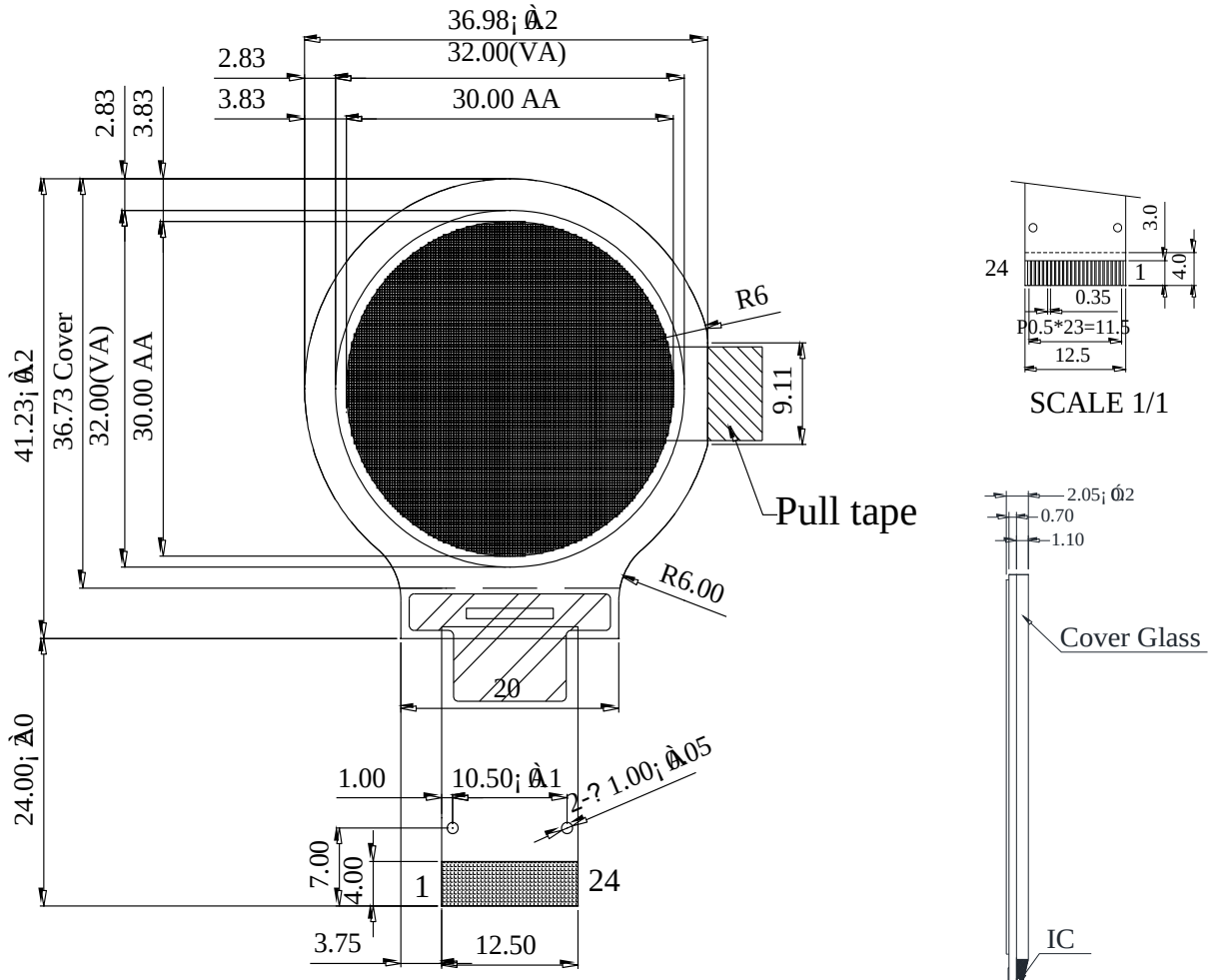
**Display Accessories**

| Part Number | Description |
|---|---|
| | |
| | |
| | |

**Optional Variants**

| Appearance | Voltage |
|---|---|
| White on Black<br>Yellow on Black | |

| Mechanical Specifications | | | | | |
|---|---|---|---|---|---|
| Module Size | 36.98 x 41.23 x 2.05 ( With Backlight) | | | | W x H x D mm |
| Viewing Area | 32.00 x 32.00 | W x H mm | Hole-to-Hole | --- | W x H mm |
| Dot Size | 0.210 x 0.210 | W x H mm | Dot Pitch | 0.235 x 0.235 | W x H mm |

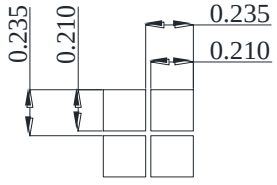






SCALE 1/1




SCALE 1:20

The non-specified tolerance of dimension is ± 0.3mm.

| MCOT128128RV-BM | 128 x 128 | Blue | OLED Module |
|---|---|---|---|
| **Specification** | | | |
| Version: 1 | | Date: 16/05/2017 | |
| **Revision** | | | |
| | | | |

| Pin layout | | | |
|---|---|---|---|
| **Pin** | **Symbol** | **Description** | **Remarks** |
| 1 | VSS | Ground. Connect to external ground. | |
| 2 | VCC | Power Supply for driving voltage. Positive power voltage supply pin. | |
| 3 | VCOMH | COM signal deselected voltage level. Capacitor between here and VSS. | |
| 4 | VCI | Low Voltage power supply. Should match with MCU interface voltage level and must connect to external source.<br>Must always be ≥ VDD. | |
| 5 | VDD | Power Supply pin for core logic operation. | |
| 6 | BS1 | MCU bus interface selection pins. Select appropriate logic setting, as described below: (Note: "0" is connected to VSS and "1" is connected to VCI)<br>I2C = BS1: 1 BS2: 0<br>4-wire SPI = BS1: 0 BS2: 0<br>8-bit 68XX = BS1: 0 BS2: 1<br>8-bit 80XX = BS1: 1 BS2: 1 | |
| 7 | BS2 | | |
| 8 | VSS | Ground Pin, must connect to external ground. | |
| 9 | IREF | Segment output current reference pin. | |
| 10 | CS# | Chip Select Input connecting to MCU.<br>Chip is enabled for MCU communication when CS# is pulled Low. | |
| 11 | RES# | Reset Signal Input.<br>Initialisation is executed when pulled Low. Keep pulled High during normal operation. | |
| 12 | D/C | Data / Command control pin connect to MCU. High= Data at D(7:0) interpreted as data. Low= Data at D(7:0) transferred to command register.<br>I2C mode = SA0 for slave address selection.<br>3-Wire SPI = Connect to VSS | |
| 13 | W/R# | Read / Write input pin, connecting to MCU interface.<br>6800 Mode= R/W (R/W#) selection input, read mode carried out when pulled High, write mode when Low.<br>8080 Mode= WR (W/R#) input, data write initiated when pin is pulled Low and chip is selected. | |
| 14 | RD# | MCU Interface Input.<br>6800 Mode= Enable (E) signal pin, Read/Write initiated when pin is pulled High and chip is selected.<br>8080 Mode= Read (RD#) signal pin, read operation initiated when pin is pulled Low and chip is selected.<br>I2C or SPI selected = Connect to VSS. | |
| 15 | D0 | Bi-directional data bus connecting to MCU data bus. Unused pins to tie low.<br>SPI Mode= D0 will be Serial Clock input (SCLK). D1 will be the Serial Data input (SDIN) and D2 should be kept NC.<br>I2C Mode= D2 and D1 should be tied together and serve as SDAout, SDAin in application and D0 is Serial Clock input (SCL). | |
| 16 | D1 | | |
| 17 | D2 | | |
| 18 | D3 | | |
| 19 | D4 | | |
| 20 | D5 | | |
| 21 | D6 | | |
| 22 | D7 | | |
| 23 | VCC | Power Supply for panel driving voltage. Supplied externally. | |
| 24 | VSS | Ground. | |

## Absolute Maximums Ratings

| Item | Symbol | Minimum | Typical | Maximum | Unit |
|---|---|---|---|---|---|
| Supply Voltage for Display | VCC | -0.50 | --- | 19.00 | V |
| Supply Voltage for Logic | VDD | -0.50 | --- | 2.75 | V |
| Supply Voltage for Operation | VCI | -0.30 | --- | 4.00 | V |
| Operating Temperature | TOP | -40 | --- | 80 | °C |
| Storage Temperature | TSTG | -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 | --- | 14.00 | 14.50 | 15.00 | V |
| 50% Checkboard Operating Current. | IDD | VDD=14.5V | 23.00 | 24.00 | 26.00 | mA |

## OLED Characteristics

| Item | Symbol | Condition | Minimum | Typical | Maximum | Unit |
|---|---|---|---|---|---|---|
| Viewing Angle | (V)θ | --- | 160 | --- | --- | Deg |
| | (H)φ | --- | 160 | --- | --- | Deg |
| Contrast Ratio | CR | Dark | 2000:1 | --- | --- | --- |
| Response Time | T Rise | --- | --- | 10 | --- | μs |
| | T Fall | --- | --- | 10 | --- | μs |
| Display with 50% Checkboard Brightness | | | 60 | 80 | --- | cd/m$^2$ |
| CIEx(Blue) | | (CIE1931) | 0.12 | 0.16 | 0.20 | --- |
| CIEy(Blue) | | (CIE1931) | 0.22 | 0.26 | 0.30 | --- |

## OLED Life Time

| Item | Conditions | Typical | Remark |
|---|---|---|---|
| Operating Life Time | Ta=25°C. Initial checkboard brightness, 50%. | 20,000 Hours | --- |