


MCOT128064H1V-BM	128 x 64	Blue	OLED Module
<b>Specification</b>			
Version: 3		Date: 07/06/2017	
<b>Revision</b>			
1	08/03/2016	First Release.	
2	01/06/2016	Modify Static Electricity Test.	
3	22/09/2017	Modify Reliability Test.	

Display Features			
Resolution	128 x 64		
Appearance	Blue on Black		
Logic Voltage	3V		
Interface	Parallel / SPI / I2C		
Module Size	60.50 x 37.00 x 2.15 mm		
Operating Temperature	-40°C ~ +80°C		
Construction	TAB	Box Quantity	Weight / Display
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\* - For full design functionality, please use this specification in conjunction with the SSD1309Z specification. (Provided Separately)

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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.

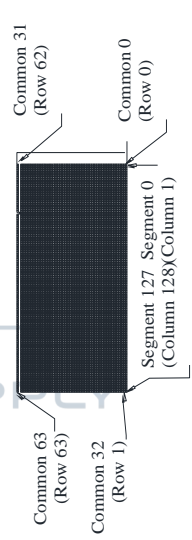
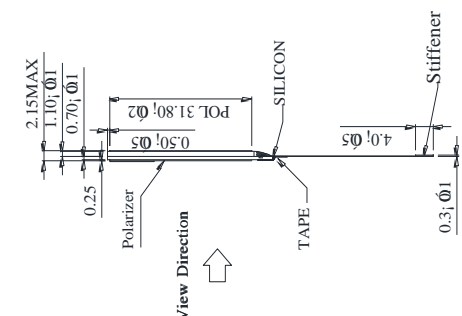
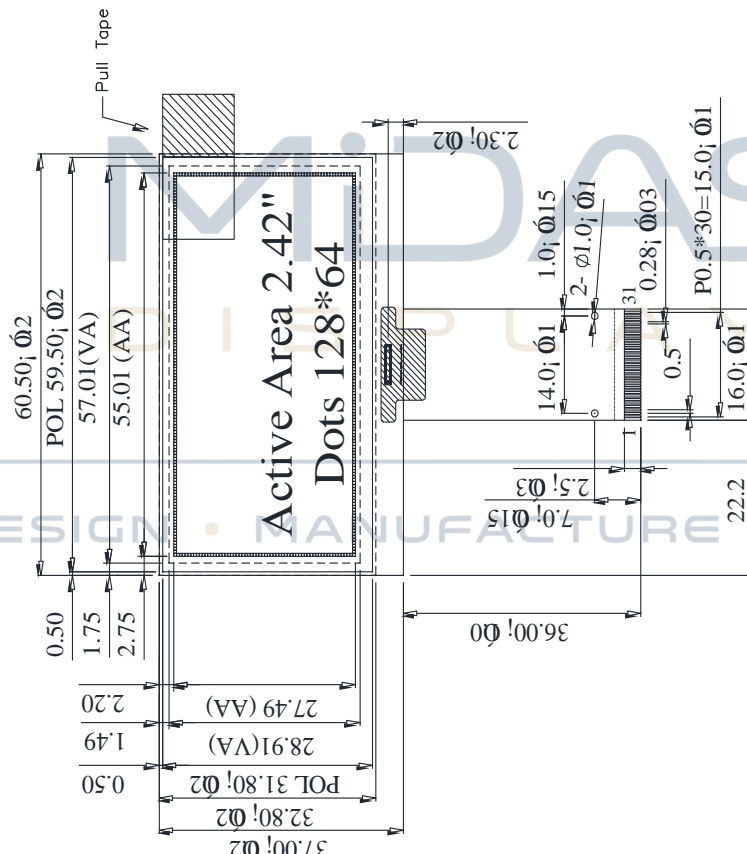
Optional Variants	
Appearance	Voltage
White on Black	
Green on Black	
Yellow on Black	



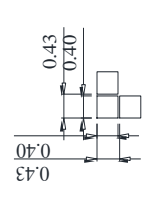
# Mechanical Specifications

Module Size	60.50 x 37.00 x 2.15 (Without Backlight)				W x H x D mm
Active Area	55.01 x 27.49	W x H mm	Hole-to-Hole	---	W x H mm
Dot Size	0.40 x 0.40	W x H mm	Dot Pitch	0.43 x 0.43	W x H mm

PIN NO.	SYMBOL	PIN NO.	SYMBOL
1	NC(GND)	17	D/C#
2	VSS	18	R/W#
3	NC	19	E/RD#
4	NC	20	D0
5	NC	21	D1
6	NC	22	D2
7	NC	23	D3
8	NC	24	D4
9	NC	25	D5
10	NC	26	D6
11	VDD	27	D7
12	BS1	28	IREF
13	BS2	29	VCOMH
14	NC	30	VCC
15	CS#	31	NC(GND)
16	RES#		



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



Detail DOTS Scale 1:10

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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: Note: "0" is connected to VSS and "1" is connected to VDD.	
13	BS2	I2C = BS1: 1 BS2: 0 4-Wire SPI = BS1: 0 BS2: 0 8-bit 6800 Parallel = BS1:0 BS2:1 8-bit 8080 Parallel = BS1: 1 BS2: 1	
14	NC	No Connection.	
15	CS#	Chip Select Input, connecting to MCU. Chip is enabled for MCU communication when CS# is pulled Low.	
16	RES#	Reset Signal Input. 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. Pin pulled High= Data at D(7:0) will be interpreted as data. Pin pulled Low= Data at D(7:0) will be transferred to a command register. I2C Mode= Pin acts as SA0 for slave address selection. 3-wire SPI Serial= This pin must be connected to VSS.	
18	R/W#	Read / Write control input pin connecting to the MCU interface. 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. 8080 Mode= This pin will be the Write (WR#) input. Data Write initiated when on pulled Low and chip selected. I2C or SPI= Must connect to VSS.	
19	E/RD#	MCU Interface Input. 6800 Mode= Pin will be used as E (E) signal. Read/Write operation initiated when pin is pulled High and chip selected. 8080 Mode= Pin receives Read (RD#) signal. Read operation initiated when pin pulled Low and chip selected. 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. SPI Mode= D0 will be Serial Clock input (SCLK), D1 will be Serial Data input (DIN) and D2 to be kept NC. 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. IREF supplied externally. A Resistor to be connected between this pin and VSS to maintain 10µA current.	
29	VCOMH	COM Signal deselected voltage Level. 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 Logic	VDD	-0.30	---	4.00	V
Supply Voltage for Display	VCC	0.00	---	15.00	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	---	0.80xVDD	---	VDD	V
Input Low Voltage	VIL	---	GND	---	0.20xVDD	V
Output High Voltage	VOH	---	0.90xVDD	---	VDD	V
Output Low Voltage	VOL	---	GND	---	0.10xVDD	V
Supply Voltage for Logic	VDD	---	2.80	3.00	3.30	V
Supply Voltage for Display	VCC	---	12.00	13.00	15.00	V
50% Checkboard Operating Current.	IDD	VDD=13V	20	24	26	mA
CIE <sub>x</sub> (Blue)	---	(CIE1931)	0.12	0.16	0.20	---
CIE <sub>y</sub> (Blue)	---	(CIE1931)	0.22	0.26	0.30	---

OLED Characteristics						
Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Viewing Angle	(V) $\theta$	---	160	---	---	Deg
	(H) $\phi$	---	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>

OLED Life Time			
Item	Conditions	Typical	Remark
Operating Life Time	T <sub>a</sub> =25°C. Initial checkboard brightness, 50%.	50,000 Hours	---

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