


MCOB21205AV-EWP	2 x 12	Euro/Jap/Cyrillic	OLED Module
Specification			
Version: 6		Date: 16/05/2017	
Revision			
0	27/09/2013	First release	
A	05/11/2013	Correct R/W Modify Idd	
B	29/04/2014	Modify Brightness	
C	16/06/2014	Update Rev. Add Low Temperature storage.	
D	08/04/2016	Modify Block Diagram.	
E	01/06/2016	Modify Static electricity test	

Display Features			Box Quantity	Weight / Display			
Character Count	2 x 12						
Appearance	White on Black						
Logic Voltage	5V						
Interface	Parallel						
Font Set	English / European / Cyrillic						
Character Height	5.50 mm						
Module Size	55.70 x 32.00 x 11.00 mm						
Operating Temperature	-40°C ~ +80°C						
Construction	COB						

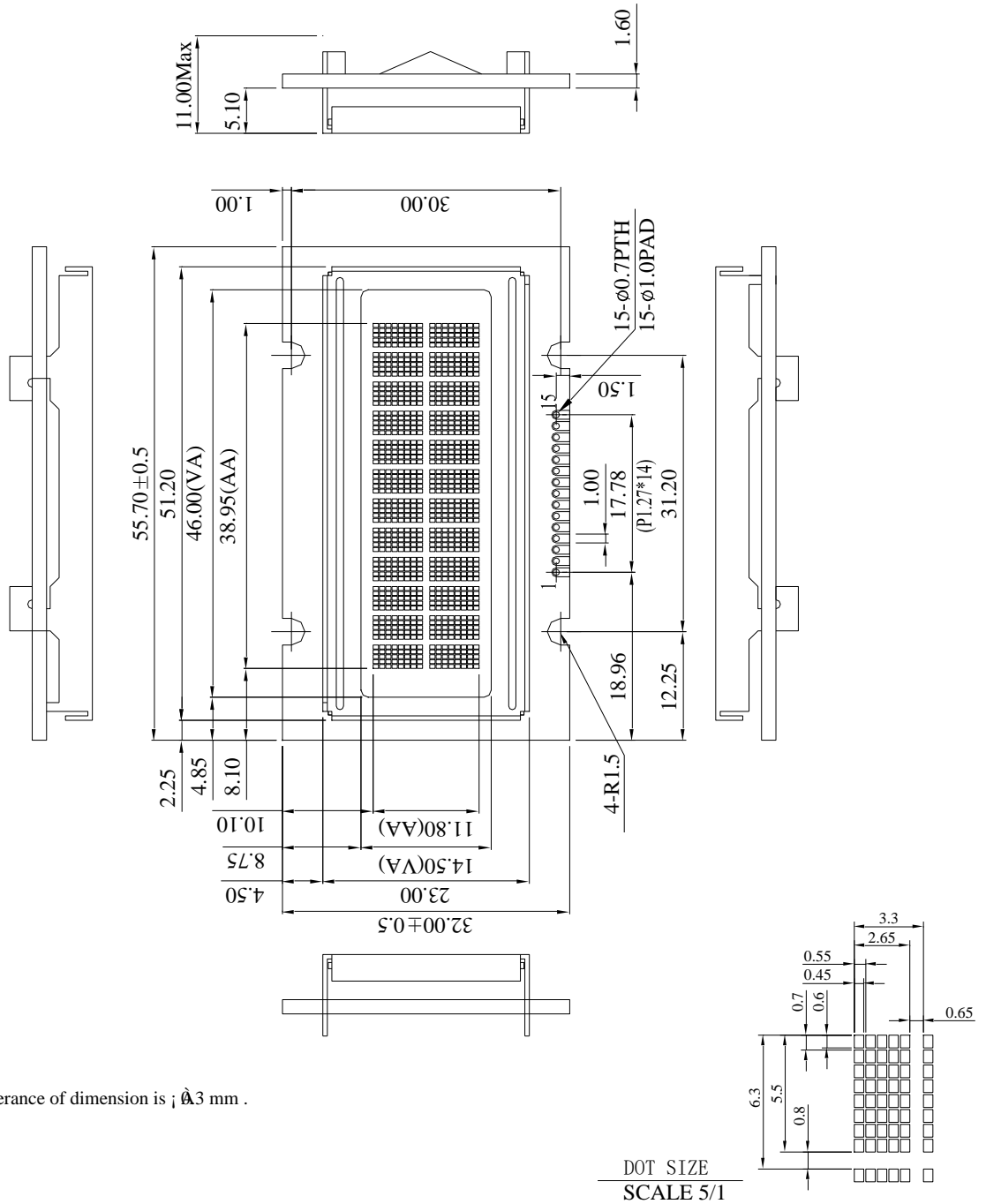
* - For full design functionality, please use this specification in conjunction with the MS0010 specification. (Provided Separately)

Display Accessories	
Part Number	Description

Optional Variants	
Appearance	Voltage
Yellow on Black	
Blue on Black	
Green on Black	
Red on Black	

Mechanical Specifications

Module Size	55.70 x 32.00 x 11.00 (With Backlight)				W x H x D mm
Viewing Area	46.00 x 14.50	W x H mm	Hole-to-Hole	31.20 x 30.00	W x H mm
Character Size	2.65 x 5.50	W x H mm	Character Pitch	3.60 x 6.30	W x H mm
Dot Size	0.45 x 0.60	W x H mm	Dot Pitch	0.55 x 0.70	W x H mm

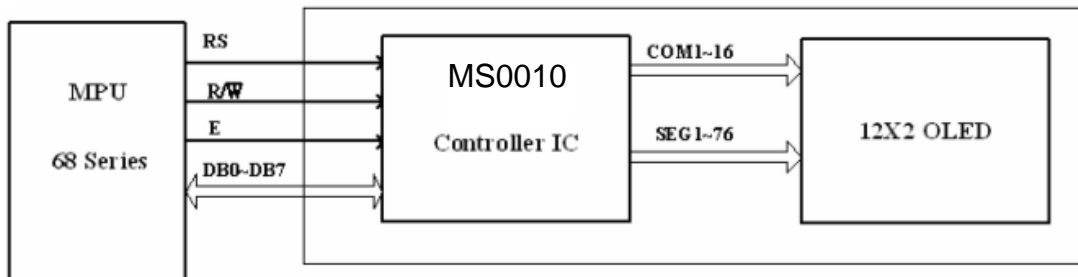


The non-specified tolerance of dimension is ; ± 0.3 mm .

DOT SIZE
SCALE 5/1

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Pin layout			
Pin	Symbol	Description	Remarks
1	VSS	Ground	
2	VDD	Supply Voltage for Logic	5V
3	NC	No Connection	
4	RS	H: Data L: Instruction Code	H/L
5	R/W	H: Read(MPU-->Module) L: Write(MPU-->Module)	H/L
6	E	Chip Enable Signal	H, H -->L
7	DB0	Data Bus Line	H/L
8	DB1	Data Bus Line	H/L
9	DB2	Data Bus Line	H/L
10	DB3	Data Bus Line	H/L
11	DB4	Data Bus Line	H/L
12	DB5	Data Bus Line	H/L
13	DB6	Data Bus Line	H/L
14	DB7	Data Bus Line	H/L
15	NC	No Connection	



Address Format	DB7	DB6	DB5	DB4	DB3	DB2	DB1	DB0
CA (Character Address)	1	ADD6	ADD5	ADD4	ADD3	ADD2	ADD1	ADD0

1	2	3	4	.....	.....	9	10	11	12
CA=10000000b	CA=10000001b	CA=10000010b	CA=10000011b	.....	.....	CA=10001000b	CA=10001001b	CA=10001010b	CA=10001011b
CA=11000000b	CA=11000001b	CA=11000010b	CA=11000011b	CA=11001000b	CA=11001001b	CA=11001010b	CA=11001011b

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Font Map

Upper 4bit Lower 4bit	LLLL	LLLH	LLHL	LLHH	LHLL	LHLH	LHHL	LHHH	HLLL	HLLH	HLHL	HLHH	HHLL	HHLH	HHHL	HHHH
LLLL	CG RAM (1)															
LLLH	(2)															
LLHL	(3)															
LLHH	(4)															
LHLL	(5)															
LHLH	(6)															
LHHL	(7)															
LHHH	(8)															
HLLL	(1)															
HLLH	(2)															
HLHL	(3)															
HLHH	(4)															
HHLL	(5)															
HHLH	(6)															
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Upper 4bit Lower 4bit	LLLL	LLLH	LLHL	LLHH	LHLL	LHLH	LHHL	LHHH	HLLL	HLLH	HLHL	HLHH	HHLL	HHLH	HHHL	HHHH
LLLL	CG RAM (1)															
LLLH	(2)															
LLHL	(3)															
LLHH	(4)															
LHLL	(5)															
LHLH	(6)															
LHHL	(7)															
LHHH	(8)															
HLLL	(1)															
HLLH	(2)															
HLHL	(3)															
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LLLL	CG RAM (1)															
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Absolute Maximums Ratings					
Item	Symbol	Minimum	Typical	Maximum	Unit
Supply Voltage for Logic	V ₀	-0.30	---	5.30	V
Operating Temperature	V _{opr}	-40	---	80	°C
Storage Temperature	V _{stg}	-40	---	80	°C

Electronic Characteristics						
Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Input High Voltage	V _{IH}	---	0.80	---	V _{DD}	V
Input Low Voltage	V _{IL}	---	GND	---	0.20	V
Output High Voltage	V _{OH}	I _{OH} =-0.5mA	0.80	---	V _{DD}	V
Output Low Voltage	V _{OL}	I _{OL} =0.5mA	GND	---	0.20	V
Supply Voltage for Logic	V _{DD} -V _{SS}	---	4.80	5.00	5.30	V
50% Checkboard Operating Current.	I _{DD}	V _{DD} =5V	28	30	38	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	70	---	cd/m ²
CIEx(White)		(CIE1931)	0.26	0.28	0.30	---
CIEy(White)		(CIE1931)	0.30	0.32	0.34	---

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

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