


MC128064D6W-BNMLW-V2	128 x 64	Font Set	LCD Module
<b>Specification</b>			
Version: 1		Date: 31/10/2016	
<b>Revision</b>			

Display Features							
Resolution	128 x 64						
Appearance	White on Blue						
Logic Voltage	5V						
Interface	Parallel						
Font Set	English/European/Japanese						
Display Mode	Transmissive						
LC Type	BSTN						
Module Size	78.00 x 70.00 x 15.00						
Operating Temperature	-20°C ~ +70°C						
Construction	COB					Box Quantity	Weight / Display
LED Backlight	White					45 pcs	36.11 grams

\* - For full design functionality, please use this specification in conjunction with the RA6963 specification. (Provided Separately)

Display Accessories	
Part Number	Description
VBWFD1	USB PIC18F2550 microcontroller board to 20-way Single in-line COB Graphic LCD.

Optional Variants	
Appearances	Voltage
Black on White Black on Yellow/Green	



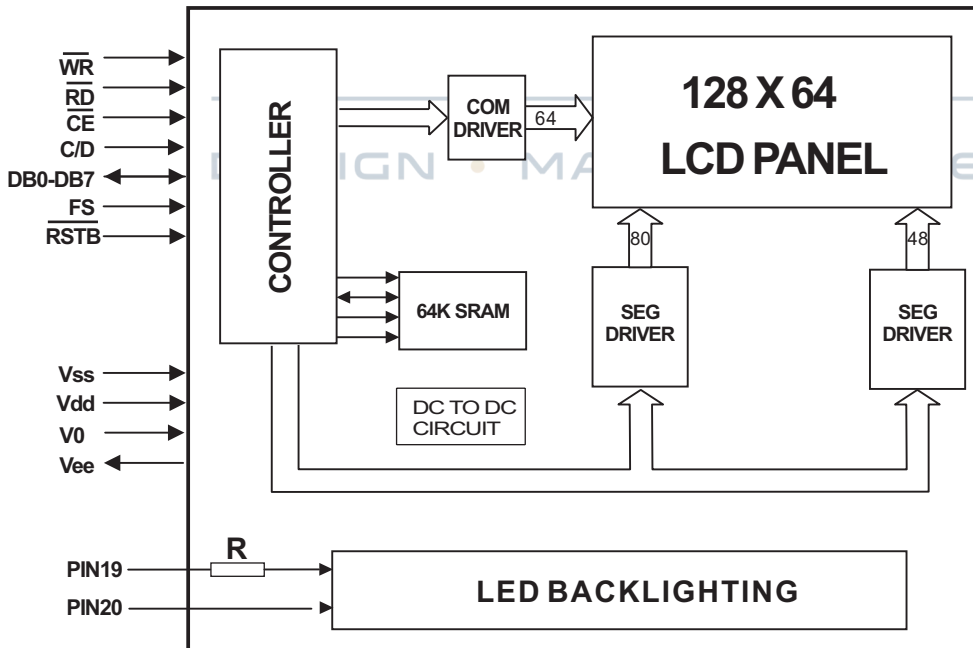


## Pin Layout

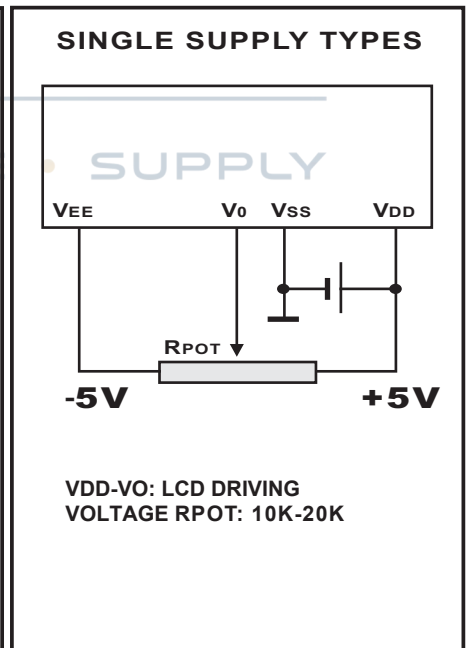
D <b>j</b> b	G <b>m</b> a V <b>c</b> `	8 Y <b>g</b> W <b>j</b> d <b>h</b> c <b>b</b>	F <b>Y</b> a U <b>f</b> _g
1	Vee	Negative Voltage Output	
2	Vss	Power Supply for LCM	
3	Vdd	Power Supply for LCM	5.0V
4	V0	Contrast Adjust	
5	WR	Data Write	
6	RD	Data Read	
7	CE	Chip Enable	
8	C/D	Command / Data Select	
9	RST	Reset Signal	
10	DB0	Data bus Line	
11	DB1	Data bus Line	
12	DB2	Data bus Line	
13	DB3	Data bus Line	
14	DB4	Data bus Line	
15	DB5	Data bus Line	
16	DB6	Data bus Line	
17	DB7	Data bus Line	
18	FS	Font Selection	
19	LED+	Power Supply for BKL	5.0V
20	LED-	Power Supply for BKL	

# MIDAS

### Block Diagram



### Power Supply Diagram



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# Font Map

## ROM Code 0101

LSB MSB	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0																
1																
2																
3																
4																
5																
6																
7																

DESIGN • MANUFACTURE • SUPPLY

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## Absolute Maximum Ratings

Item	Symbol	Condition	Min	Typ	Max	Unit
Power Supply ( LOGIC)	Vdd	25°C	-0.3	---	7.0	V
Power Supply (LCD)	V0	25°C	Vdd -19.00	---	Vdd +0.3	V
Input Voltage	Vin	25°C	-0.3	---	Vdd +0.3	V
Operating Temperature	Vopr	---	-20	---	70	C
Storage Temperature	Vstg	---	-30	---	80	C

## Electronic Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Input Voltage	Vlcm = Vdd	---	---	5.0	---	V
Supply Current	Idd	Vdd=5V	---	6.0	---	mA
Driving Voltage for LCD Panel	Vlcd = (Vdd - V0)	-20°C	8.20	---	9.20	V
		0°C	---	---	---	
		25°C	7.60	---	8.00	
		50°C	---	---	---	
		70°C	7.60	---	8.00	

## LCD Characteristics

For STN/FSTN LCD Panel Types						
Item	Symbol	Condition	Min	Typ	Max	Unit
Viewing Angle	$\Phi 2 - \Phi 1$	K = 4	40°	---	---	Deg
	$\Theta$		60°			
Contrast Ratio	K	---	---	10	---	---
Response Time (Rise)	TR	---	---	150	250	ms
Response Time (Fall)	TF	---	---	150	250	ms

## LED Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
LED Forward Voltage	Vf	25°C If=25mA	---	5.0	---	V
LED Forward Current*	If	25°C	---	25	---	mA
LED Reverse Current	Ir	25°C Vr=5.0V	---	---	30	μA
LED Colour Range	X Coordinate	25°C If=25mA	0.26	---	0.30	---
	Y Coordinate		0.27	---	0.31	---
LED Brightness (Without LCD)	Lv	25°C If=25mA	---	330	---	cd/m <sup>2</sup>
LED Brightness Uniformity	Lvmin/Lvmax	25°C If=25mA	70	---	---	Ratio
LED Life Time	---	25°C If=25mA	9K	---	---	Hours

**Attention:** It is constant current, not constant voltage, which should be applied when driving the LED backlight, please ensure you adhere to this rule.

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