

## 20 x 2 Character LCD

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#### **FEATURES**

• Type: Character

• Display format: 20 x 2 characters

• Built-in controller: ST 7066 (or equivalent)

RoHS

• Duty cycle: 1/16

• 5 x 8 dots includes cursor

- + 5 V power supply (also available for + 3 V)
- LED can be driven by pin 1, pin 2, pin 15, pin 16 or A and K
- N.V. optional for + 3 V power supply
- Material categorization: For definitions of compliance please see <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>

MECHANICAL DATA								
ITEM	STANDARD VALUE	UNIT						
Module Dimension	116.0 x 37.0							
Viewing Area	85.0 x 18.6							
Dot Size	0.60 x 0.65	mm						
Dot Pitch	0.65 x 0.70	- mm						
Mounting Hole	108.0 x 29.0							
Character Size	3.2 x 5.55							

ABSOLUTE MAXIMUM RATINGS								
ITEM	EM SYMBOL		STANDARD VALUE					
I I EIVI	STWIDOL	MIN.	MAX.	UNIT				
Power Supply	V <sub>DD</sub> to V <sub>SS</sub>	- 0.3	-	7.0	V			
Input Voltage	$V_{l}$	- 0.3	-	$V_{DD}$	\ \			

#### Note

•  $V_{SS} = 0 \text{ V}, V_{DD} = 5.0 \text{ V}$ 

ELECTRICAL CHARACTERISTICS								
ITEM	SYMBOL	CONDITION	ST	UNIT				
ITEM	STINIBUL	CONDITION	MIN. TYP.		MAX.	UNIT		
Input Voltage	V <sub>DD</sub>	$V_{DD} = + 5 V$	4.7	5.0	5.3			
input voltage	V DD	$V_{DD} = + 3 V$	2.7	3.0	5.3	V		
Supply Current	I <sub>DD</sub>	$V_{DD} = + 5 V$	-	1.0	1.2	mA		
		- 20 °C	5.0	5.1	5.7			
Recommended LC Driving		0 °C	4.6	4.8	5.2			
Voltage for Normal Temperature	$V_{DD}$ to $V_{0}$	25 °C	4.1	4.5	4.7	V		
Version Module		50 °C	3.9	4.2	4.5			
		70 °C	3.7	3.9	4.3	7		
LED Forward Voltage	V <sub>F</sub>	25 °C	-	4.2	4.6	V		
LED Forward Current	I <sub>F</sub>	25 °C	-	210	420	mA		
EL Power Supply Current	I <sub>EL</sub>	V <sub>EL</sub> = 110 V <sub>AC</sub> , 400 Hz	-	-	5.0	mA		

OPTIONS	S								
		PROCES		BACK	LIGHT				
TN	STN Gray	STN Yellow	STN Blue	FSTN B&W	STN Color	None	LED	EL	CCFL
х	х	х	х	х		х	x	х	

For detailed information, please see the "Product Numbering System" document.



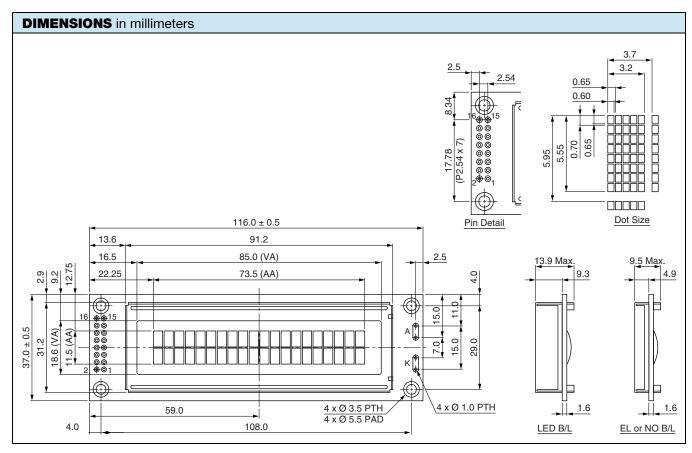
## **DISPLAY CHARACTER ADDRESS CODE**

Display Position

DD RAM Address
DD RAM Address

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	12	13
40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F	50	51	52	53

INTERFACE PIN FUNCTION							
PIN NO.	SYMBOL	FUNCTION					
1	V <sub>SS</sub>	Ground					
2	V <sub>DD</sub>	+ 3 V or + 5 V					
3	V <sub>0</sub>	Contrast adjustment					
4	RS	H/L register select signal					
5	R/W	H/L read/write signal					
6	E	H → L enable signal					
7	DB0	H/L data bus line					
8	DB1	H/L data bus line					
9	DB2	H/L data bus line					
10	DB3	H/L data bus line					
11	DB4	H/L data bus line					
12	DB5	H/L data bus line					
13	DB6	H/L data bus line					
14	DB7	H/L data bus line					
15	A/V <sub>EE</sub>	+ 4.2 V for LED/negative voltage output					
16	К	Power supply for B/L (0 V)					





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