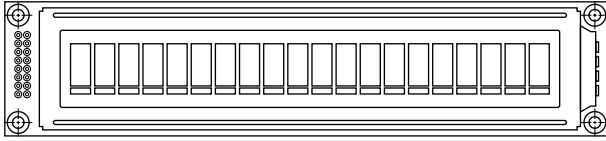


## 20 x 1 Character LCD



### FEATURES

- Type: Character
- Display format: 20 x 1 characters
- Built-in controller: KS 0066 (or equivalent)
- Duty cycle: 1/16
- 5 x 7 dots includes cursor
- + 5 V power supply
- Compliant to RoHS directive 2002/95/EC


**RoHS**  
COMPLIANT

MECHANICAL DATA		
ITEM	STANDARD VALUE	UNIT
Module Dimension	180.0 x 40.0	mm
Viewing Area	149.0 x 23.0	
Dot Size	1.152 x 1.765	
Dot Pitch	1.212 x 1.825	
Mounting Hole	172.0 x 32.0	
Character Size	1.152 x 1.765	

ABSOLUTE MAXIMUM RATINGS					
ITEM	SYMBOL	STANDARD VALUE			UNIT
		MIN.	TYP.	MAX.	
Power Supply	$V_{DD}$ to $V_{SS}$	- 0.3	-	7.0	V
Input Voltage	$V_I$	$V_{SS}$	-	$V_{DD}$	

**Note**

- $V_{SS} = 0$  V,  $V_{DD} = 5.0$  V

ELECTRICAL CHARACTERISTICS						
ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
Input Voltage	$V_{DD}$	-	4.5	5.0	5.5	V
Supply Current	$I_{DD}$	$V_{DD} = +5$ V	1.0	1.2	1.5	mA
Recommended LC Driving Voltage for Normal Temperature Version Module	$V_{DD}$ to $V_0$	- 20 °C	-	-	5.7	V
		0 °C	-	-	-	
		25 °C	-	4.2	-	
		50 °C	-	-	-	
		70 °C	3.2	-	-	
LED Forward Voltage	$V_F$	25 °C	3.4	3.5	3.6	V
LED Forward Current - Array	$I_F$	25 °C	-	-	-	mA
LED Forward Current - Edge			50	60	75	
EL Power Supply Current	$I_{EL}$	$V_{EL} = 110$ V <sub>AC</sub> , 400 Hz	-	-	5.0	mA

OPTIONS									
PROCESS COLOR						BACKLIGHT			
TN	STN Gray	STN Yellow	STN Blue	FSTN B&W	STN Color	None	LED	EL	CCFL
x	x	x	x			x	x	x	

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

## DISPLAY CHARACTER ADDRESS CODE

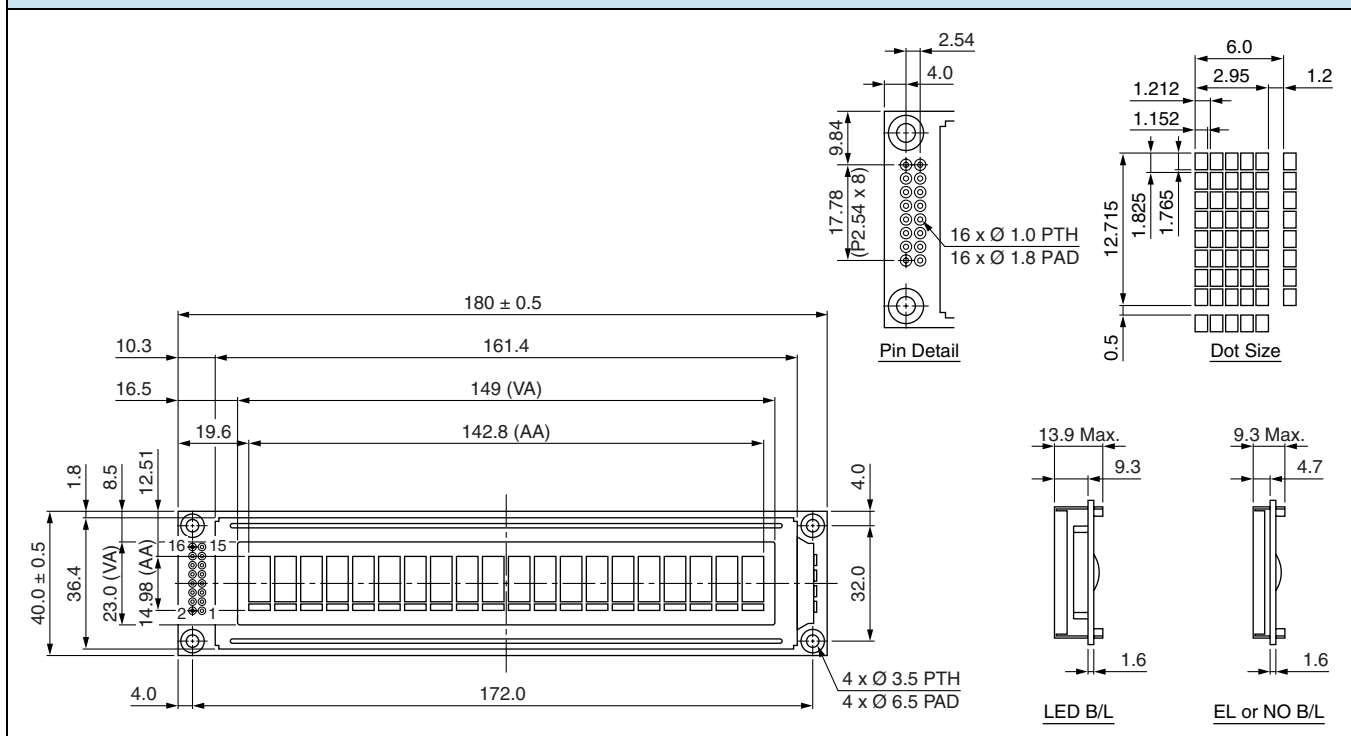
Display Position

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
DD RAM Address	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	12	13

## INTERFACE PIN FUNCTION

PIN NO.	SYMBOL	FUNCTION
1	V <sub>SS</sub>	Ground
2	V <sub>DD</sub>	Supply voltage for logic
3	V <sub>0</sub>	Operating voltage for LCD
4	RS	H: Data/L: Instruction
5	R/W	H: Read data/L: Write data
6	E	Chip enable signal
7	DB0	Data bit 0
8	DB1	Data bit 1
9	DB2	Data bit 2
10	DB3	Data bit 3
11	DB4	Data bit 4
12	DB5	Data bit 5
13	DB6	Data bit 6
14	DB7	Data bit 7
15	A	LED +
16	K	LED -

## DIMENSIONS in millimeters





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