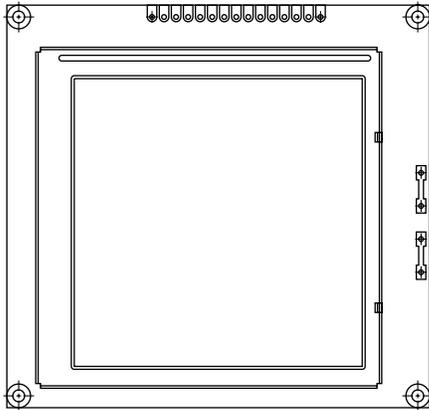


## 160 x 160 Graphic LCD



### FEATURES

- Type: Graphic
- Display format: 160 x 160 dots
- Built-in controller: None
- Duty cycle: 1/160
- + 5 V power supply
- Compliant to RoHS directive 2002/95/EC


**RoHS**  
COMPLIANT

MECHANICAL DATA		
ITEM	STANDARD VALUE	UNIT
Module Dimension	89.2 x 85.0	mm
Viewing Area	62.0 x 62.0	
Dot Size	0.34 x 0.34	
Dot Pitch	0.38 x 0.38	
Mounting Hole	84.2 x 80.0	
Character Size	N/a	

ABSOLUTE MAXIMUM RATINGS					
ITEM	SYMBOL	STANDARD VALUE			UNIT
		MIN.	TYP.	MAX.	
Power Supply	$V_{DD}$ to $V_{SS}$	4.75	5.0	5.52	V
Input Voltage	$V_I$	0	-	$V_{DD}$	

**Note**

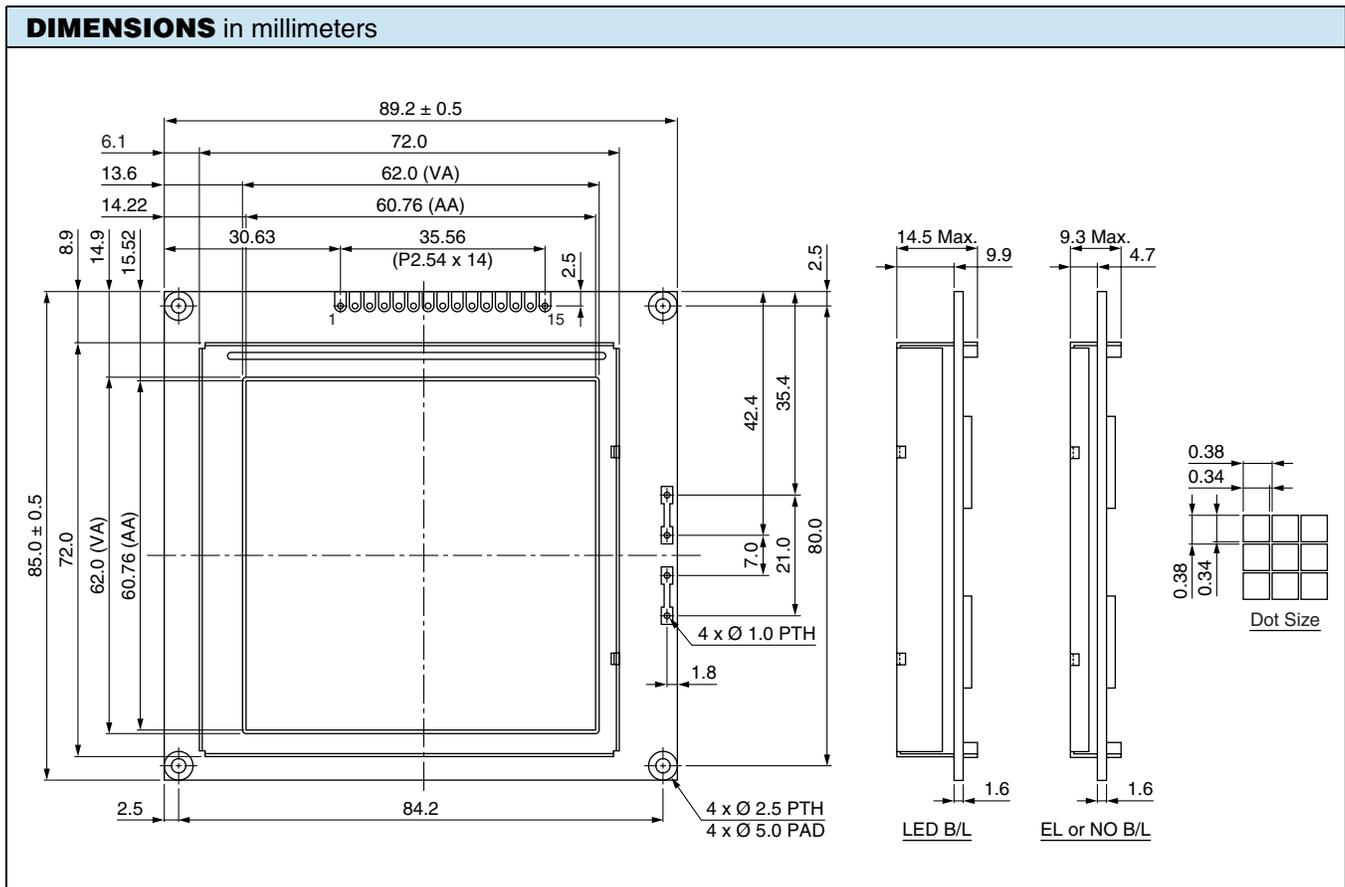
- $V_{SS} = 0$  V,  $V_{DD} = 5.0$  V

ELECTRICAL CHARACTERISTICS						
ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
Input Voltage	$V_{DD}$	L level	0.7 $V_{DD}$	-	$V_{DD}$	V
	$V_{IO}$	H level	-	-	0.3 $V_{DD}$	V
Supply Current	$I_{DD}$	$V_{DD} = +5$ V	-	1.5	3.0	mA
Recommended LC Driving Voltage for Normal Temperature Version Module	$V_{DD}$ to $V_0$	-20 °C	16.5	18.0	19.5	V
		0 °C	16.3	17.8	19.3	
		25 °C	15.5	17.0	18.5	
		50 °C	14.5	16.0	17.5	
		70 °C	14.3	15.8	17.3	
LED Forward Voltage	$V_F$	25 °C	-	4.2	4.6	V
LED Forward Current	$I_F$	25 °C	-	500	1000	mA
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.

INTERFACE PIN FUNCTION			
PIN NO.	SYMBOL	PIN NO.	FUNCTION
1	V <sub>SS</sub>		Ground
2	M		Control signal for AC driving
3	FLM		The FLM signal indicates the beginning of each display cycle
4	CL1		The CL1 latches the serial data in shift register
5	CL2		Clock signal for shifting the serial data
6	DB3		Data bus line
7	DB2		Data bus line
8	DB1		Data bus line
9	DB0		Data bus line
10	V <sub>EE</sub>		Power supply for LCD driving
11	V <sub>DD</sub>		Power supply (+ 5 V)
12	V <sub>0</sub>		Contrast adjustment
13	DISPOFF		Control display off; 0: Off/1: On
14	A		Power supply for
15	K		Power supply for





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