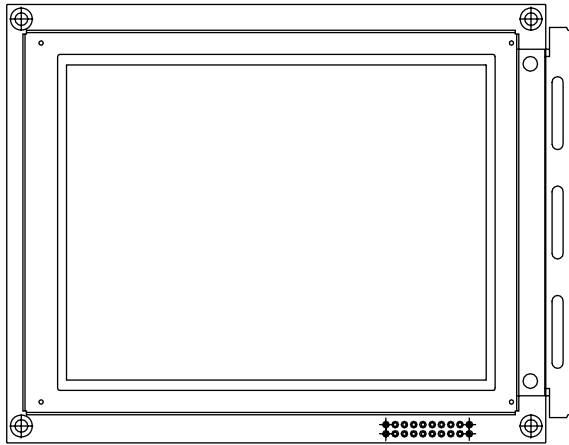


## 320 x 240 Graphic LCD



### FEATURES

- Type: Graphic
- Display format: 320 x 240 dots
- Built-in controller: RA8835 and SRAM
- Duty cycle: 1/240
- Built-in N.V.
- Touch screen option (analog type)
- Temperature compensation option
- Compliant to RoHS directive 2002/95/EC


**RoHS**  
COMPLIANT

MECHANICAL DATA		
ITEM	STANDARD VALUE	UNIT
Module Dimension	148.02 x 120.24	mm
Viewing Area	120.14 x 92.14	
Dot Size	0.34 x 0.34	
Dot Pitch	0.36 x 0.36	
Mounting Hole	139.98 x 116.61	
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	5.25	V
Input Voltage	$V_I$	- 0.3	-	$V_{DD}$	

**Note**

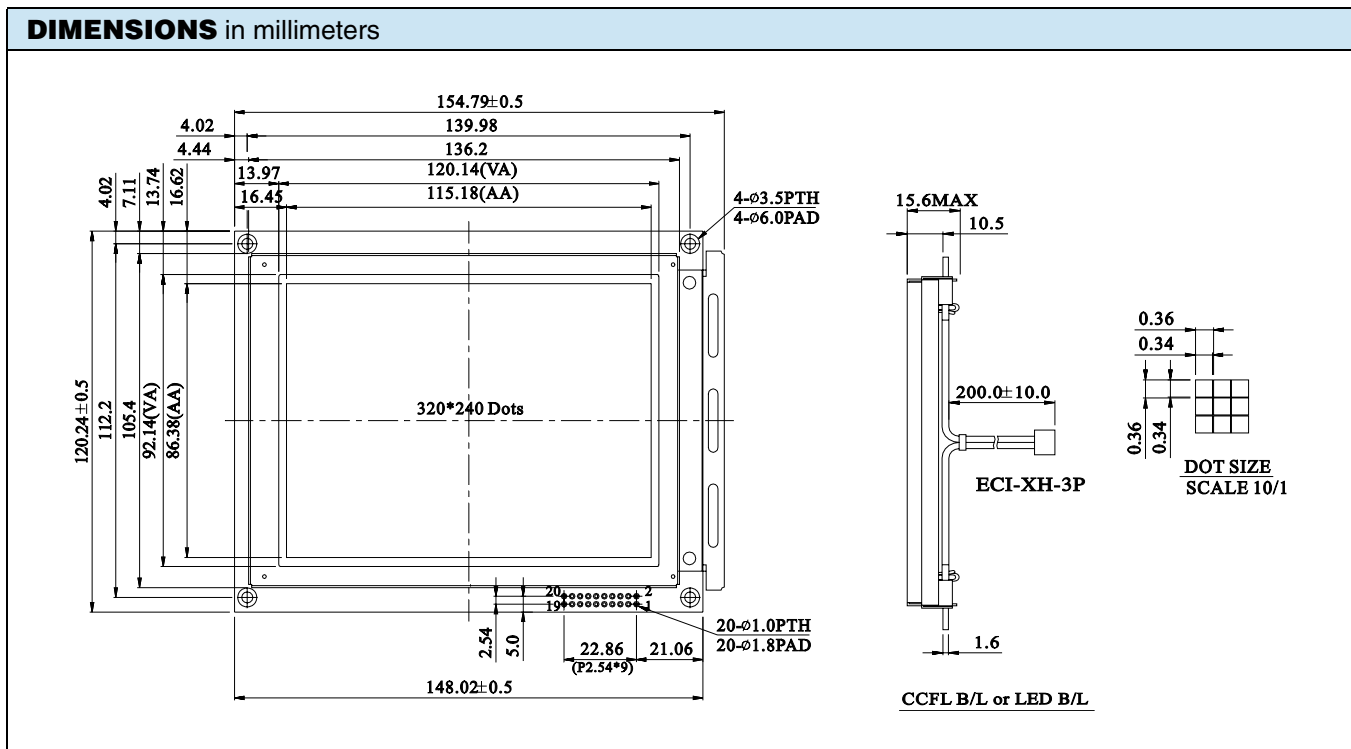
- $V_{SS} = 0$  V,  $V_{DD} = 5.0$  V

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	-	$0.3 V_{DD}$	
Supply Current	$I_{DD}$	$V_{DD} = + 5.0$ V	-	100	105	mA
Recommended LC Driving Voltage for Normal Temperature Version Module	$V_0$ to $V_{SS}$	- 20 °C	-	-	26.1	V
		25 °C	-	23.8	-	
		70 °C	20.9	-	-	
CCFL Starting Voltage	$V_{FLS}$	25 °C	-	600	-	$V_{RMS}$
CCFL Driving Voltage	$V_{FLD}$	25 °C	-	268	-	$V_{RMS}$
CCFL Driving Current	$I_{FLD}$	$V_{FQ} = 450 V_{RMS}, 30$ kHz	-	5.0	-	$mA_{RMS}$
LED Forward Voltage	$V_F$	25 °C	-	4.2	4.6	V
LED Forward Current	$I_F$	25 °C	-	180	360	mA
EL Power Supply Current	$I_{EF}$	$V_{EL} = 110 V_{AC}, 400$ Hz	-	-	5.0	mA

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

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

INTERFACE PIN FUNCTION		
PIN NO.	SYMBOL	FUNCTION
1	V <sub>SS</sub>	Ground
2	V <sub>DD</sub>	Power supply for logic
3	V <sub>0</sub>	Driving voltage for LCD
4	$\overline{RD}$	8080 family: Read signal/6800 family: Enable clock
5	$\overline{WR}$	8080 family: Write signal/6800 family: R/W signal
6	A <sub>0</sub>	Data type select For 80 family: RD = L, WR = H; AO = L: Data read, AO = H: Status read RD = H, WR = L; AO = L: Data write, AO = H: Command write For 68 family: R/W = L; AO = H: Command write, AO = L: Data write R/W = H; AO = H: Status read, AO = L: Data read
7	DB0	Date bus line
8	DB1	Date bus line
9	DB2	Date bus line
10	DB3	Date bus line
11	$\overline{DB4}$	Date bus line
12	$\overline{DB5}$	Date bus line
13	DB6	Date bus line
14	DB7	Date bus line
15	CS	Chip select, active L
16	RES	Controller reset signal, active L
17	V <sub>EE</sub>	Negative voltage output (optional)
18	F <sub>GND</sub>	Frame ground
19	NC	No connection
20	NC	No connection





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