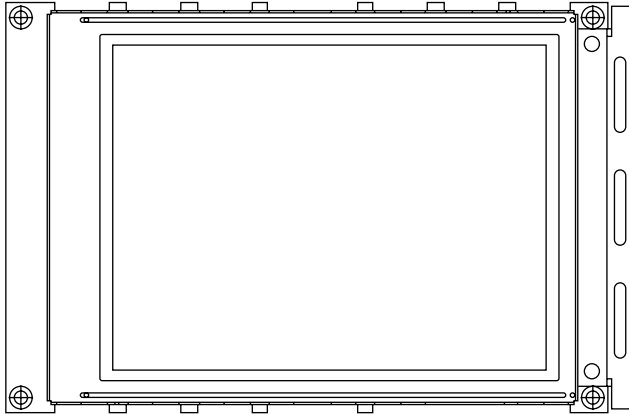


## 320 x 240 Graphic LCD



### FEATURES

- Type: Graphic
- Display format: 320 x 240 dots
- Built-in controller: Epson S1D13700
- Duty cycle: 1/240
- Touch screen option
- Temperature compensation option
- BP2: DIP connection
- BP3: Touch panel driver
- Compliant to RoHS directive 2002/95/EC



**RoHS**  
COMPLIANT

### MECHANICAL DATA

ITEM	STANDARD VALUE	UNIT
Module Dimension	166.8 x 109.0	mm
Viewing Area	122.0 x 92.0	
Dot Size	0.34 x 0.34	
Dot Pitch	0.36 x 0.36	
Mounting Hole	152.0 x 101.0	
Character Size	N/a	

### ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	STANDARD VALUE			UNIT
		MIN.	TYP.	MAX.	
Power Supply	$V_{DD}$ to $V_{SS}$	4.5	5.0	5.5	V
Input Voltage	$V_I$	0	-	$V_{DD}$	

#### Note

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

### ELECTRICAL CHARACTERISTICS

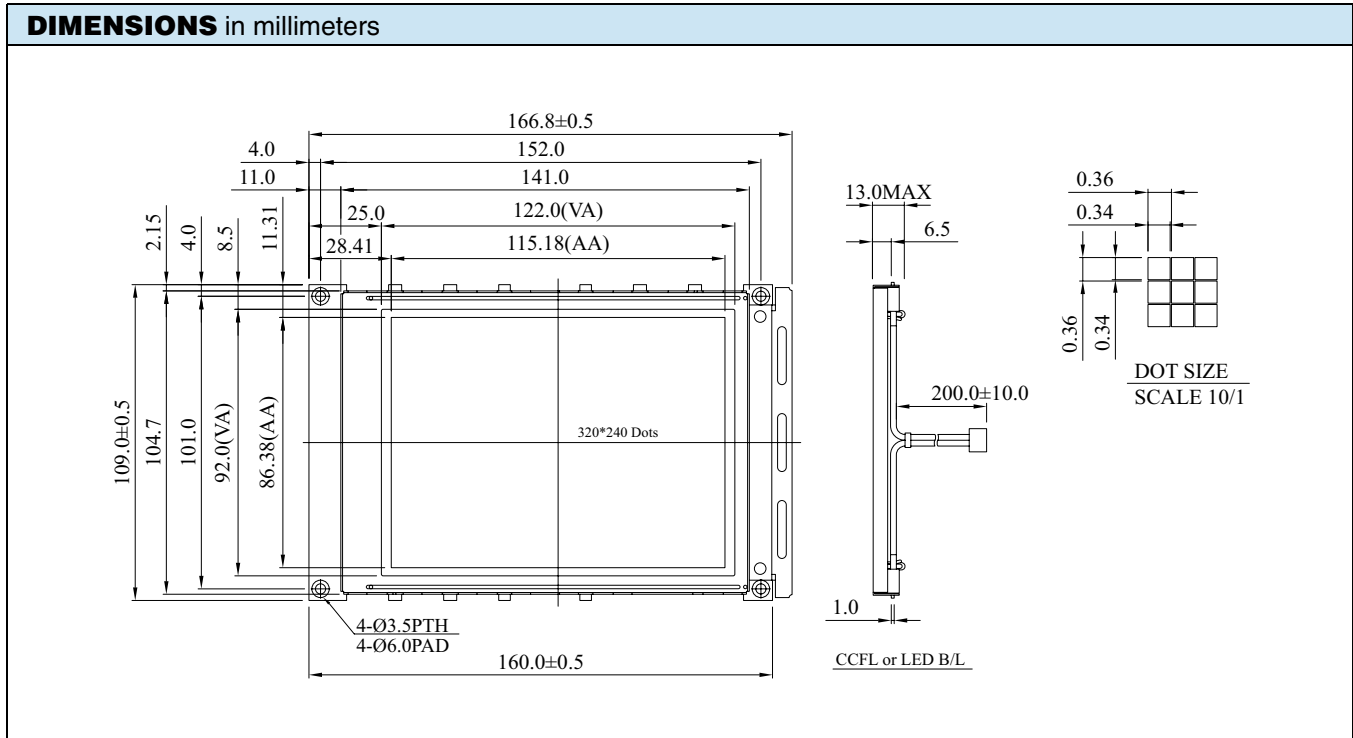
ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
Input Voltage	$V_{DD}$	-	4.75	5.0	5.25	V
Supply Current	$I_{DD}$	$V_{DD} = +5.0$ V	65.0	75.0	85.0	mA
Recommended LC Driving Voltage for Normal Temperature Version Module	$V_0$ to $V_{SS}$	-20 °C	-	-	26.1	V
		25 °C	-	23.8	-	
		70 °C	22.2	-	-	
CCFL Starting Voltage	$V_{FLS}$	25 °C	-	600	-	$V_{RMS}$
CCFL Driving Voltage	$V_{FLD}$	25 °C	-	270	-	$V_{RMS}$
CCFL Driving Current	$I_{FLD}$	$V_{FQ} = 450 V_{RMS}, 30$ kHz	4.8	5.3	5.5	$mA_{RMS}$
LED Forward Voltage	$V_F$	25 °C	3.4	3.5	3.6	V
LED Forward Current	$I_F$	25 °C	140	160	180	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
	x	x	x	x		x	x	x	x

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	A <sub>0</sub>	RD = L, WR = H; AO = L: Data read; AO = H: Status read RD = H, WR = L; AO = L: Data write; AO = H: Command write
5	$\overline{WR}$	8080 family: Write signal/6800 family: R/W signal
6	$\overline{RD}$	8080 family: Read signal/6800 family: Enable clock
7	DB0	Date bus line
8	DB1	Date bus line
9	DB2	Date bus line
10	DB3	Date bus line
11	DB4	Date bus line
12	DB5	Date bus line
13	DB6	Date bus line
14	DB7	Date bus line
15	$\overline{CS}$	Chip select, active L
16	$\overline{RES}$	Controller reset signal, active L
17	V <sub>EE</sub>	Negative voltage output
18	SEL	8088 or 6800 interface selection (1:68, 0:80)
19	F <sub>GND</sub>	Frame ground
20	WAIT	Check busy





## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.