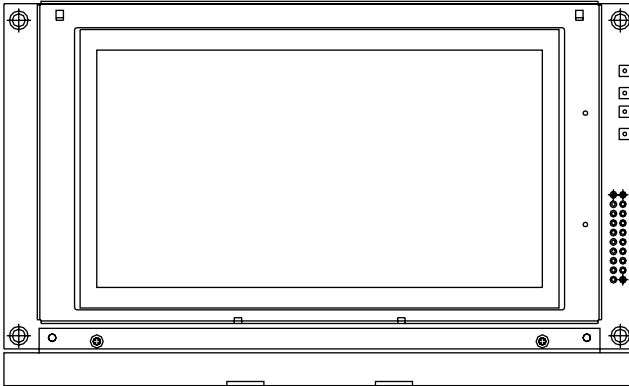


## 240 x 128 Graphic LCD



### FEATURES

- Type: Graphic
- Display format: 240 x 128 dots
- Built-in controller: Toshiba T6963C
- Duty cycle: 1/128
- Built-in N.V. (option)
- Compliant to RoHS directive 2002/95/EC


**RoHS**  
COMPLIANT

### MECHANICAL DATA

ITEM	STANDARD VALUE	UNIT
Module Dimension	170.0 x 103.5	mm
Viewing Area	132.0 x 76.0	
Dot Size	0.47 x 0.47	
Dot Pitch	0.50 x 0.50	
Mounting Hole	162.0 x 85.0	
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	5.25	V
Input Voltage	$V_I$	-0.3	-	$V_{DD}$	

**Note**

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

### ELECTRICAL CHARACTERISTICS

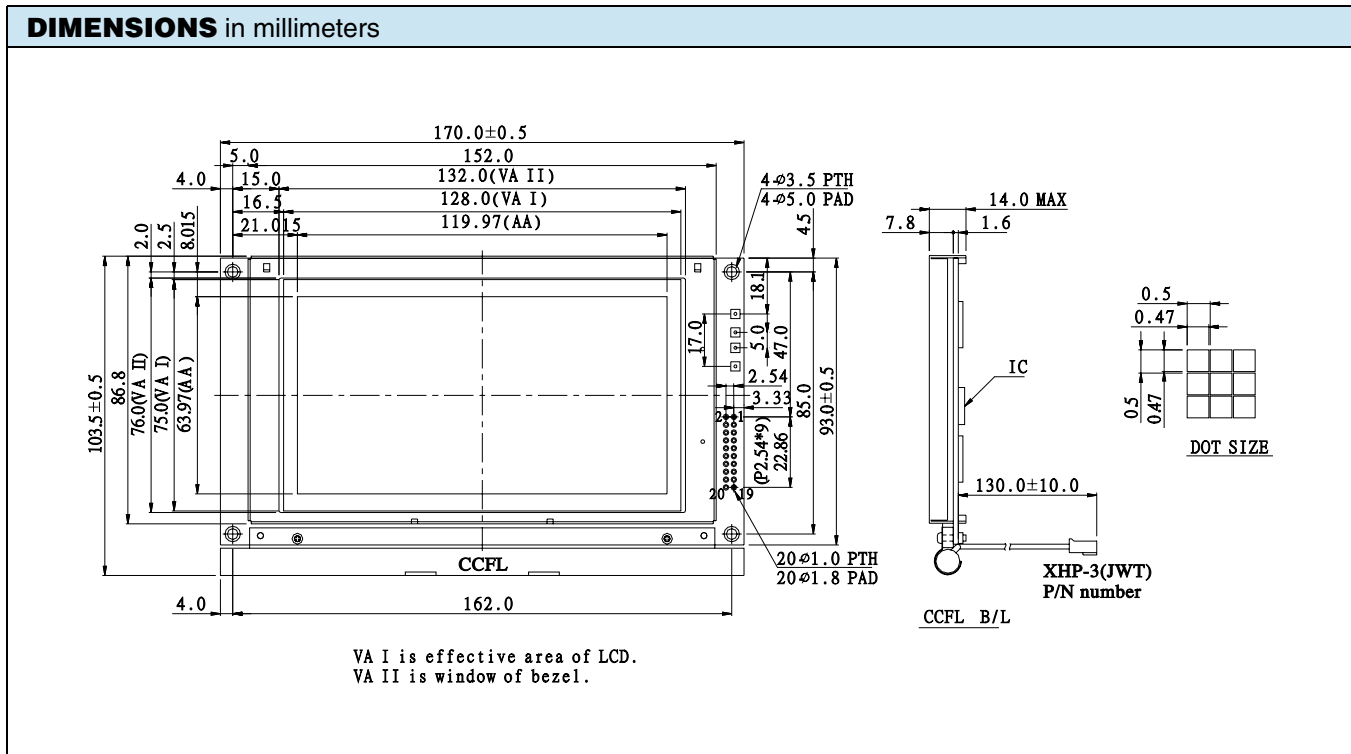
ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
Input Voltage	$V_{DD}$	L level	$0.7 V_{DD}$	-	$V_{DD}$	V
	$V_{IO}$	H level	-	-	$0.3 V_{DD}$	
Supply Current	$I_{DD}$	$V_{DD} = +5$ V	-	23	-	mA
Recommended LC Driving Voltage for Normal Temperature Version Module	$V_{DD}$ to $V_0$	-20 °C	-	-	-	V
		0 °C	19.1	19.5	20.1	
		25 °C	18.1	18.5	19.1	
		50 °C	17.1	17.5	18.1	
LED Forward Voltage	$V_F$	25 °C	-	-	-	V
LED Forward Current	$I_F$	25 °C	-	-	-	mA
CCFL Forward Voltage	$V_F$	25 °C	-	325	580	$V_{RMS}$
CCFL Forward Current	$I_F$	25 °C	-	-	5.0	$mA_{RMS}$
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	x

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

INTERFACE PIN FUNCTION		
PIN NO.	SYMBOL	FUNCTION
1	F <sub>GND</sub>	Frame GEN (connected to bezel)
2	V <sub>SS</sub>	Ground
3	V <sub>DD</sub>	Power supply for logic circuit
4	V <sub>0</sub>	Contrast adjustment
5	WR	Data write
6	DR	Data read
7	CE	Chip enable
8	C/D	Code/data
9	NC/V <sub>EE</sub>	No connection/negative voltage output
10	RST	Controller reset
11	DB0	Data bus line
12	DB1	Data bus line
13	DB2	Data bus line
14	DB3	Data bus line
15	DB4	Data bus line
16	DB5	Data bus line
17	DB6	Data bus line
18	DB7	Data bus line
19	FS	Font selection: FS = "H", 6 x 8 character font, FS = "L", 8 x 8 character font
20	RV	Reverse





## Disclaimer

All product specifications and data are subject to change without notice.

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