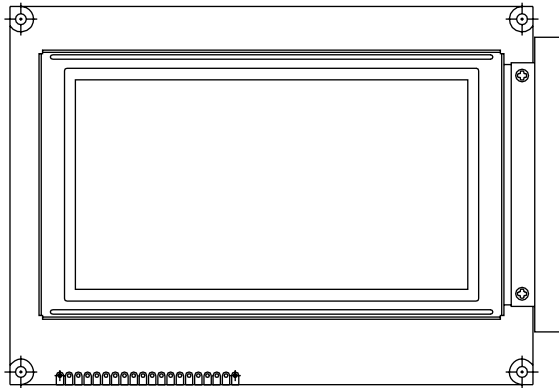


## 240 x 128 Graphic LCD



### FEATURES

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


**RoHS**  
COMPLIANT

MECHANICAL DATA		
ITEM	STANDARD VALUE	UNIT
Module Dimension	144.0 x 104.0	mm
Viewing Area	114.0 x 64.0	
Dot Size	0.40 x 0.40	
Dot Pitch	0.45 x 0.45	
Mounting Hole	138.0 x 99.0	
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**

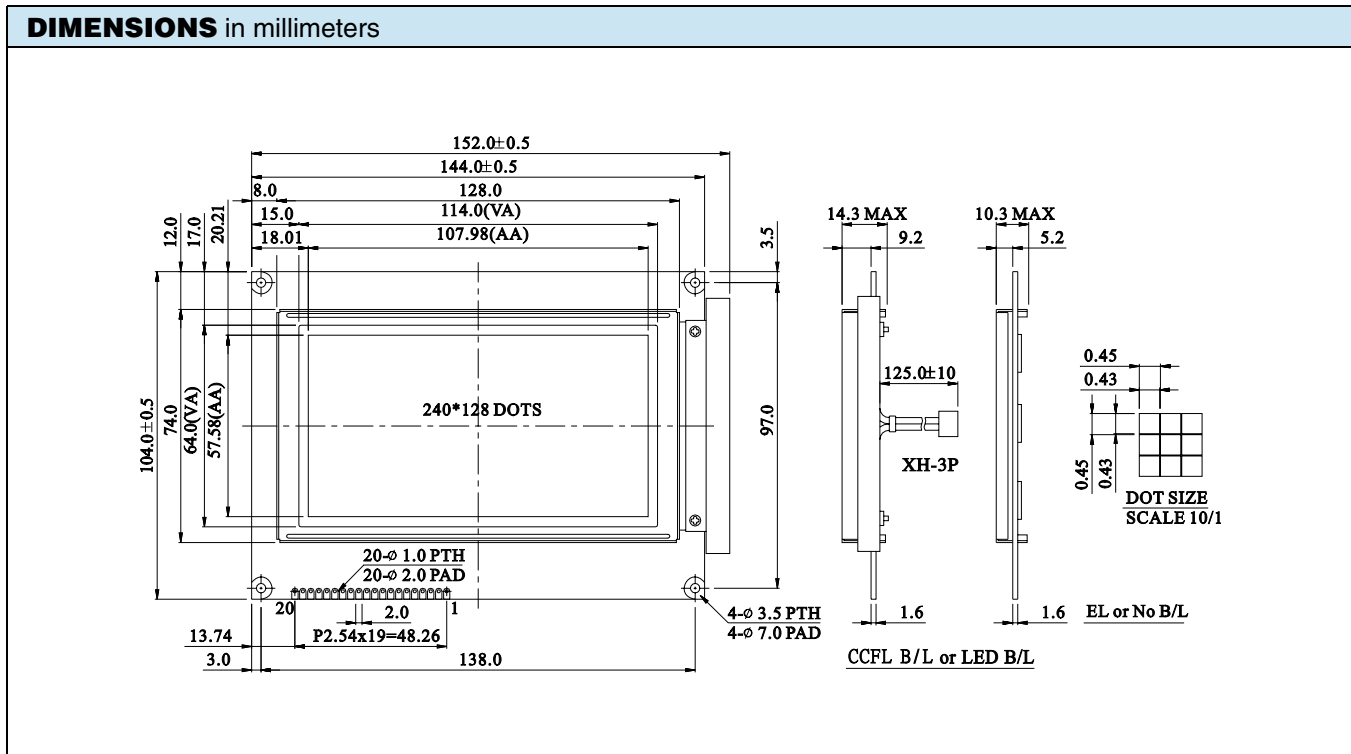
- $V_{SS} = 0$  V,  $V_{DD} = 5.0$  V

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	0	55	60	mA
Recommended LC Driving Voltage for Normal Temperature Version Module	$V_{DD}$ to $V_0$	- 20 °C	-	-	-	V
		0 °C	20.3	21.4	22.5	
		25 °C	18.0	19.1	20.2	
		50 °C	17.8	18.9	20.0	
LED Forward Voltage	$V_F$	25 °C	-	4.2	-	V
LED Forward Current	$I_F$	25 °C	-	900	1800	mA
CCFL Forward Voltage	$V_F$	25 °C	-	250	590	$V_{RMS}$
CCFL Forward Current	$I_F$	25 °C	-	-	5.5	$mA_{RMS}$
EL Power Supply Current	$I_{EL}$	$V_{EL} = 110 V_{AC}$ , 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>	Power supply (Ground)
2	V <sub>DD</sub>	Power supply (+ 5 V)
3	V <sub>0</sub>	Power supply for LCD driving
4	C/D	Command/data read/write
5	$\overline{RD}$	Data read
6	$\overline{WR}$	Data write
7	DB0	Data bus line
8	DB1	Data bus line
9	DB2	Data bus line
10	DB3	Data bus line
11	DB4	Data bus line
12	DB5	Data bus line
13	DB6	Data bus line
14	DB7	Data bus line
15	$\overline{CE}$	Chip enable
16	$\overline{RESET}$	Reset signal
17	V <sub>EE</sub>	Negative voltage output
18	MD2	Control signal
19	FS1	Font selection
20	NC	No connection





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**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**

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