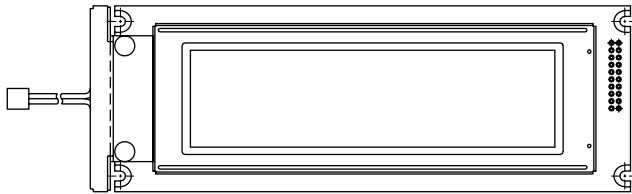


## 240 x 64 Graphic LCD



### FEATURES

- Type: Graphic
- Display format: 240 x 64 dots
- Built-in controller: Toshiba T6963C (or equivalent)
- Duty cycle: 1/64
- + 5 V power supply
- Built-in N.V.
- Compliant to RoHS directive 2002/95/EC


**RoHS**  
COMPLIANT

MECHANICAL DATA		
ITEM	STANDARD VALUE	UNIT
Module Dimension	180.0 x 65.0	mm
Viewing Area	133.0 x 39.0	
Dot Size	0.49 x 0.49	
Dot Pitch	0.53 x 0.53	
Mounting Hole	176.0 x 54.0	
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**

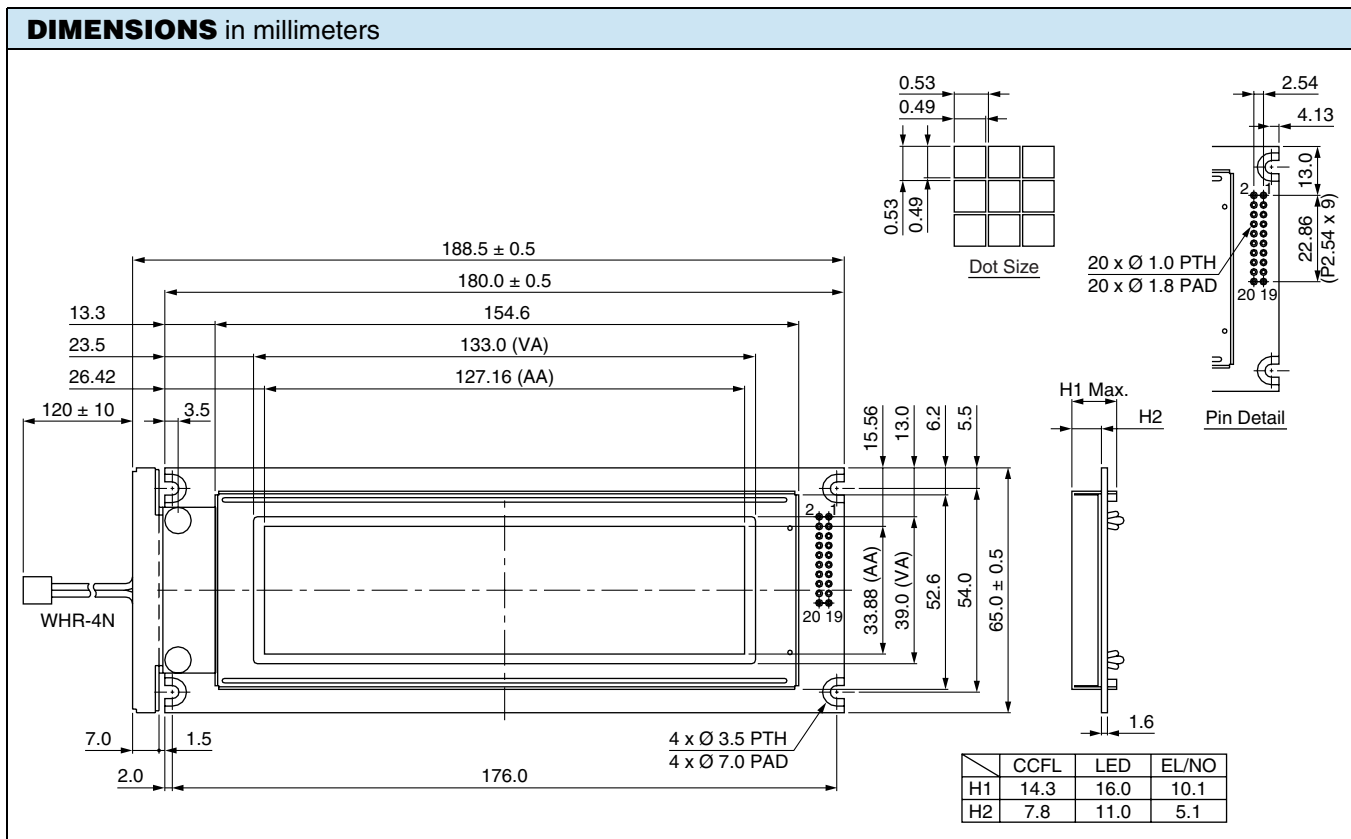
- $V_{SS} = 0$  V,  $V_{DD} = 5.0$  V

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	-	$0.3 V_{DD}$	
Supply Current	$I_{DD}$	$V_{DD} = +5$ V	-	23.0	24.0	mA
Recommended LC Driving Voltage for Normal Temperature Version Module	$V_{DD}$ to $V_0$	- 20 °C	13.0	13.5	14.1	V
		0 °C	12.5	13.1	13.7	
		25 °C	12.1	12.7	13.3	
		50 °C	11.1	12.2	13.0	
		70 °C	9.1	11.6	12.8	
LED Forward Voltage	$V_F$	25 °C	-	4.2	4.6	V
LED Forward Current	$I_F$	25 °C	-	450	900	mA
CCFL Forward Voltage	$V_F$	25 °C	-	215	650	$V_{RMS}$
CCFL Forward Current	$I_F$	25 °C	-	-	5.0	mA
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	FG	Frame ground
2	V <sub>SS</sub>	Power supply (Ground)
3	V <sub>DD</sub>	Power supply (+ 5 V)
4	V <sub>0</sub>	Contrast adjustment
5	$\overline{WR}$	Data write
6	$\overline{RD}$	Data read
7	$\overline{CE}$	Chip enable
8	C/ $\overline{D}$	Command/data read/write
9	V <sub>EE</sub>	Negative voltage output
10	$\overline{RESET}$	Reset signal
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	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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