

# 240 x 128 Graphic LCD



### **FEATURES**

• Type: Graphic

• Display format: 240 x 128 dots

Built-in controller: Avant IC T6963C (or equivalent)
 RoHS COMPLIANT

• Duty cycle: 1/128

• Built-in N.V.

· COB version

• Compliant to RoHS directive 2002/95/EC

MECHANICAL DATA					
ITEM	STANDARD VALUE	UNIT			
Module Dimension	150.0 x 82.2				
Viewing Area	114.0 x 64.0				
Dot Size	0.43 x 0.43	mm			
Dot Pitch	0.45 x 0.45	111111			
Mounting Hole	147.0 x 74.5				
Character Size	N/a				

ABSOLUTE MAXIMUM RATINGS						
ITEM	CVMPOL	STAN	LINIT			
ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT	
Power Supply	V <sub>DD</sub> to V <sub>SS</sub>	4.75	5.0	5.25	V	
Input Voltage	VI	- 0.3	-	$V_{DD}$	]	

#### Note

•  $V_{SS} = 0 \text{ V}, V_{DD} = 5.0 \text{ V}$ 

ELECTRICAL CHARACTERISTICS								
ITEM	OVMPOL	COMPITION	ST					
	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT		
Input Voltage	$V_{DD}$	-	4.75	5.0	5.25	V		
Supply Current	I <sub>DD</sub>	V <sub>DD</sub> = + 5 V	-	28.2	-	mA		
Recommended LC Driving Voltage for Normal Temperature Version Module		- 20 °C	-	=	20.1			
	V <sub>DD</sub> to V <sub>0</sub>	0 °C	-	=	-			
		25 °C	-	18.9	-	V		
		50 °C	-	-	-	1		
		70 °C	16.3	-	-	1		
CCFL Starting Voltage	V <sub>FLS</sub>	25 °C	-	=	-	V <sub>RMS</sub>		
CCFL Driving Voltage	V <sub>FLD</sub>	25 °C	-	=	-	V <sub>RMS</sub>		
CCFL Driving Current	I <sub>FLD</sub>	$V_{FQ} = 450 V_{RMS}, 30 \text{ kHz}$	-	=	-	mA <sub>RMS</sub>		
LED Forward Voltage	V <sub>F</sub>	25 °C	3.4	3.5	3.6	V		
LED Forward Current	I <sub>F</sub>	25 °C	140	180	270	mA		
EL Power Supply Current	I <sub>EL</sub>	V <sub>EL</sub> = 110 V <sub>AC</sub> , 400 Hz	-	-	5.0	mA		

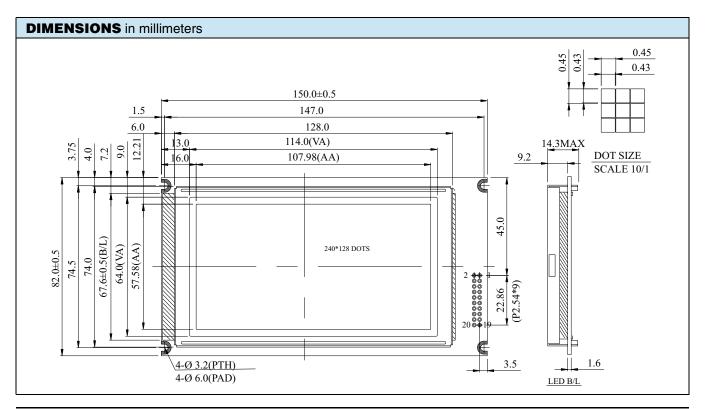
OPTIONS									
PROCESS COLOR						BACK	LIGHT		
TN	STN Gray	STN Yellow	STN Blue	FSTN B&W	STN Color	None	LED	EL	CCFL
	x	х	х	x		x	x	x	Х

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

## 240 x 128 Graphic LCD



INTERFACE PIN FUNCTION						
PIN NO.	SYMBOL	FUNCTION				
1	F <sub>GND</sub>	Frame ground				
2	V <sub>SS</sub>	Ground				
3	V <sub>DD</sub>	Power supply				
4	V <sub>0</sub>	Power supply for LCD driver				
5	/WR	L: Data write				
6	/RD	L: Data read				
7	CE	Enable signal				
8	C/D	WR = L, C/D = H: Command write, C/D = L: Data write RD = L, C/D = H: Status read, C/D = L: Data read				
9	V <sub>EE</sub>	Negative voltage output				
10	RESET	H: Normal/L: Initialize T6963C				
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	Pins for selection of font; H: 6 x 8, L: 8 x 8				
20	RV	H: Reverse/L: Normal				





Vishay

### **Disclaimer**

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

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 herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

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.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.

Document Number: 91000 Revision: 18-Jul-08

www.vishay.com