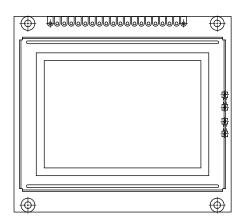




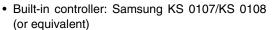
# 128 x 64 Graphic LCD



### **FEATURES**

• Type: Graphic

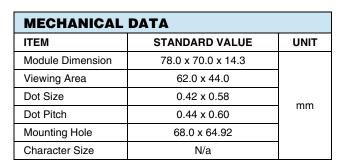




Duty cycle: 1/64+ 5 V power supply

• N.V. built-in

• Compliant to RoHS directive 2002/95/EC



ABSOLUTE MAXIMUM RATINGS						
ITEM	SYMBOL	STAN	UNIT			
I I E IVI	STWIDOL	MIN.	TYP.	MAX.	UNIT	
Power Supply	$V_{DD}$ to $V_{SS}$	4.5	5.0	5.5	V	
Input Voltage	VI	- 0.3	-	$V_{DD}$	V	

#### Note

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

ELECTRICAL CHARACTERISTICS							
ITEM	SYMBOL	CONDITION	STA				
		CONDITION	MIN.	TYP.	MAX.	UNIT	
Input Voltage	$V_{DD}$	L level	0.7 V <sub>DD</sub>	=	$V_{DD}$	V	
	V <sub>IO</sub>	H level	0	-	0.3 V <sub>DD</sub>		
Supply Current	I <sub>DD</sub>	V <sub>DD</sub> = + 5 V	-	3.5	-	mA	
	$V_{DD}$ to $V_0$	- 20 °C	9.6	10.1	10.6		
Recommended LC Driving		0 °C	9.4	9.9	10.4		
Voltage for Normal Temperature Version Module		25 °C	9.4	9.6	10.4	V	
		50 °C	9.4	9.2	9.7		
		70 °C	9.2	9.0	9.5		
LED Forward Voltage	V <sub>F</sub>	25 °C	-	4.2	4.6	V	
LED Forward Current - Array Hight		05.00	-	480	960	A	
LED Forward Current - Array Low	I <sub>F</sub>	25 °C	-	140	280	mA	
EL Power Supply Current	I <sub>EL</sub>	V <sub>EL</sub> = 110 V <sub>AC</sub> , 400 Hz	-	=	5.0	mA	

OPTION	OPTIONS								
PROCESS COLOR					BACKLIGHT				
TN	STN Gray	STN Yellow	STN Blue	FSTN B&W	STN Color	None	LED	EL	CCFL
	х	Х	х			х	х	х	

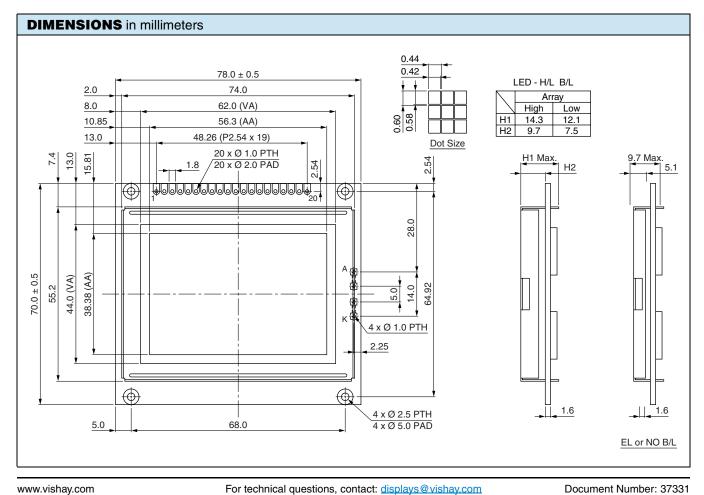
For detailed information, please see the "Product Numbering System" document.

Document Number: 37331 Revision: 16-Mar-09

## 128 x 64 Graphic LCD



INTERFACE PIN FUNCTION						
PIN NO.	SYMBOL	FUNCTION				
1	CS1	Chip select for IC1				
2	CS2	Chip select for IC2				
3	V <sub>SS</sub>	Ground				
4	V <sub>DD</sub>	Power supply (+ 5 V)				
5	V <sub>0</sub>	Contrast adjustment				
6	D/I	Data/instruction				
7	R/W	Data read/write				
8	E	$H \rightarrow L$ enable signal				
9	DB0	Data bus line				
10	DB1	Data bus line				
11	DB2	Data bus line				
12	DB3	Data bus line				
13	DB4	Data bus line				
14	DB5	Data bus line				
15	DB6	Data bus line				
16	DB7	Data bus line				
17	RST	Reset				
18	V <sub>EE</sub>	Negative voltage output				
19	A	Power supply for LED (+ 4.2 V), $R_A = 0 \Omega$				
20	К	Power supply for LED (0 V)				





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