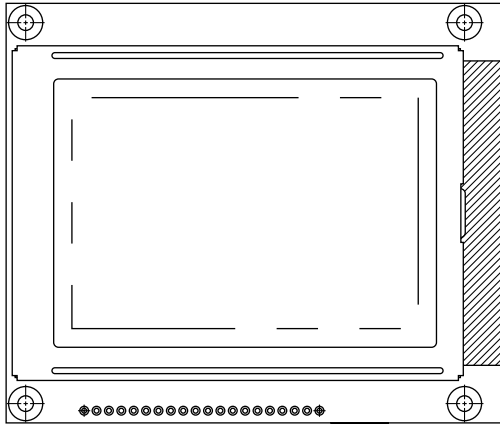


## 192 x 128 Graphic LCD



### FEATURES

- Type: Graphic
- Display format: 192 x 128 dots
- Built-in controller: Sanyo LC7981 (or equivalent)
- Duty cycle: 1/128
- Built-in N.V.
- Compliant to RoHS directive 2002/95/EC


**RoHS**  
COMPLIANT

MECHANICAL DATA		
ITEM	STANDARD VALUE	UNIT
Module Dimension	102.3 x 86.0	mm
Viewing Area	75.8 x 55.0	
Dot Size	0.35 x 0.35	
Dot Pitch	0.37 x 0.37	
Mounting Hole	90.0 x 78.0	
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	-	$V_{DD}$	

**Note**

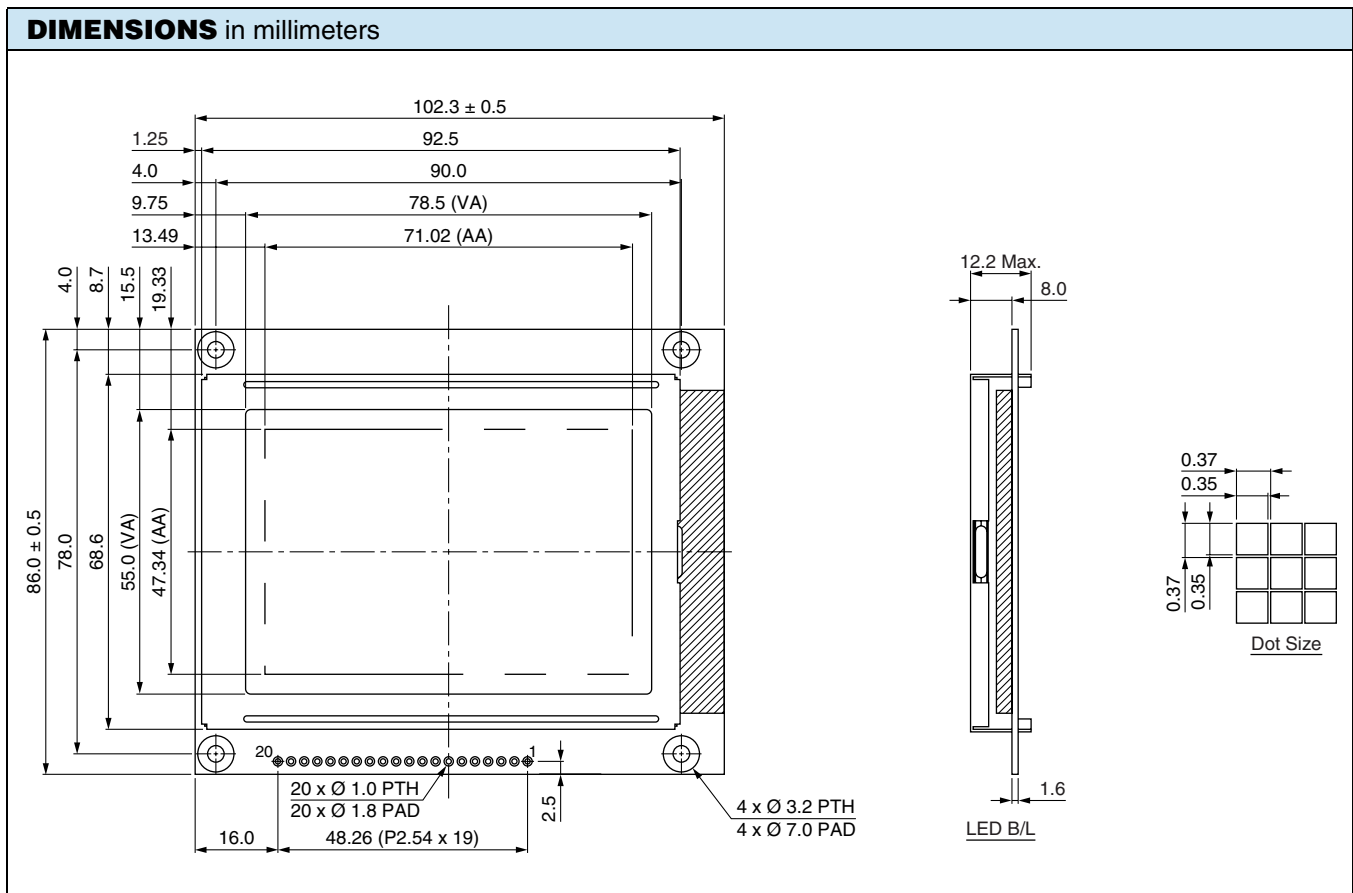
- $V_{SS} = 0$  V,  $V_{DD} = 5.0$  V

ELECTRICAL CHARACTERISTICS						
ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
Input Voltage	$V_{DD}$	-	4.5	5.0	5.5	V
Supply Current	$I_{DD}$	$V_{DD} = +5$ V	-	1.0	-	mA
Recommended LC Driving Voltage for Normal Temperature Version Module	$V_{DD}$ to $V_0$	-20 °C	-	-	5.8	V
		25 °C	-	4.9	-	
		70 °C	4.6	-	-	
CCFL Starting Voltage	$V_{FLS}$	25 °C	-	-	-	$V_{RMS}$
CCFL Driving Voltage	$V_{FLD}$	25 °C	-	-	-	$V_{RMS}$
CCFL Driving Current	$I_{FLD}$	$V_{FQ} = 450 V_{RMS}, 30$ kHz	-	-	-	$mA_{RMS}$
LED Forward Voltage	$V_F$	25 °C	3.4	3.5	3.6	V
LED Forward Current	$I_F$	25 °C	32	40	60	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		

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

INTERFACE PIN FUNCTION		
PIN NO.	SYMBOL	FUNCTION
1	V <sub>SS</sub>	Ground
2	V <sub>DD</sub>	Supply voltage for logic
3	V <sub>0</sub>	Operating voltage for LCD
4	RS	H: Data/L: Instruction
5	R/W	H: Read data/L: Write data
6	E	Enable signal
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	/CS	Chip enable
16	/RST	Reset signal
17	V <sub>EE</sub>	Negative voltage output
18	NC	No connection
19	A	LED (+)
20	K	LED (-)





## Disclaimer

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