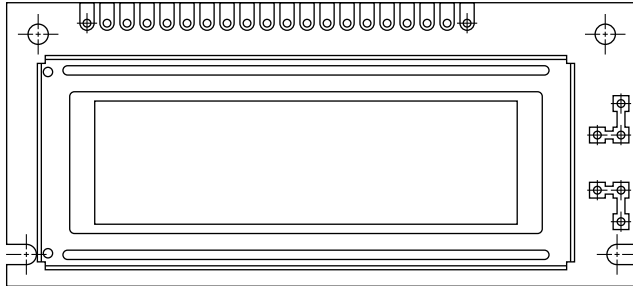


122 x 32 Graphic LCD



FEATURES

- Type: graphic
- Display format: 122 x 32 dots
- Built-in controller: SBN1661G
- Duty cycle: 1/32
- Available for external (E type), internal (J type), oscillation 2 kHz
- N.V. optional for +3 V power supply
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

MECHANICAL DATA		
ITEM	STANDARD VALUE	UNIT
Module dimension	80.0 x 36.0	mm
Viewing area	60.0 x 18.0	
Dot size	0.40 x 0.45	
Dot pitch	0.44 x 0.49	
Mounting hole	75.0 x 28.0	
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

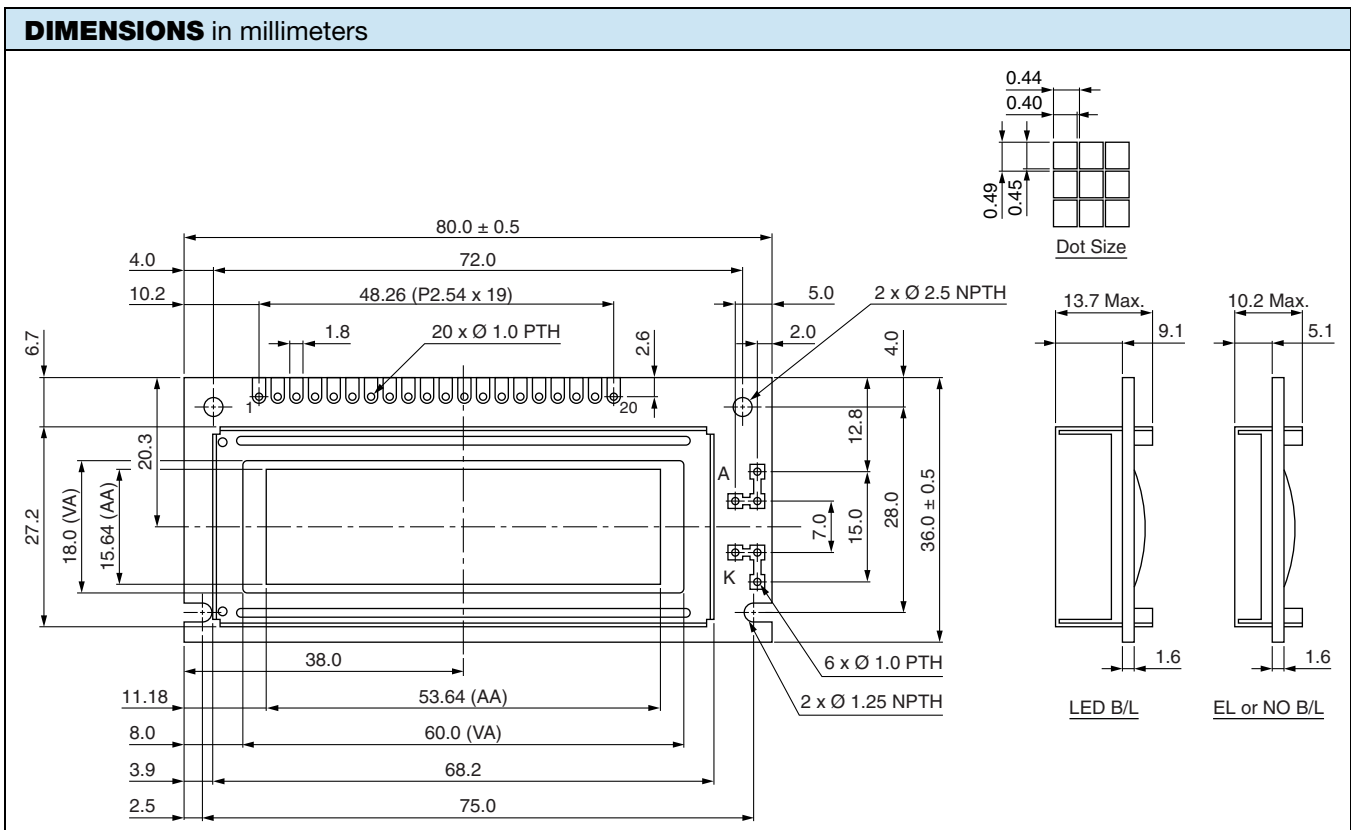
- $V_{SS} = 0$ V, $V_{DD} = 5.0$ V

ELECTRICAL CHARACTERISTICS						
ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
Input voltage	V_{DD}	$V_{DD} = +5$ V	4.5	5.0	5.5	V
Supply current	I_{DD}	$V_{DD} = +5$ V	-	1.0	1.4	mA
Recommended LC driving voltage for normal temperature version module	V_{DD} to V_0	-20 °C	4.9	5.0	5.1	V
		0 °C	4.7	4.8	4.9	
		25 °C	4.6	4.7	4.8	
		50 °C	4.3	4.4	4.7	
		70 °C	4.1	4.2	4.5	
LED forward voltage	V_F	25 °C	-	4.2	4.6	V
LED forward current	I_F	25 °C	-	120	240	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	-

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

INTERFACE PIN FUNCTION		
PIN NO.	SYMBOL	FUNCTION
1	V _{SS}	Ground
2	V _{DD}	Power supply for logic
3	V ₀	Contrast adjustment
4	A ₀	H → data / L → instruction
5	CS1	L → chip 1 enable
6	CS2	L → chip 2 enable
7	CL / NV	E type: external clock 2 kHz / J type: negative voltage option
8	E / NC	E type: enable signal / J type: no connection
9	R / \bar{W}	H: read data / L: write data
10	DB0	Data bus line
11	DB1	Data bus line
12	DB2	Data bus line
13	DB3	Data bus line
14	DB4	Data bus line
15	DB5	Data bus line
16	DB6	Data bus line
17	DB7	Data bus line
18	RES	H → L reset the LCM
19	A / V _{EE}	E type: +4.2 V for LED / negative voltage output / J type: A
20	K	Power supply for backlight





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