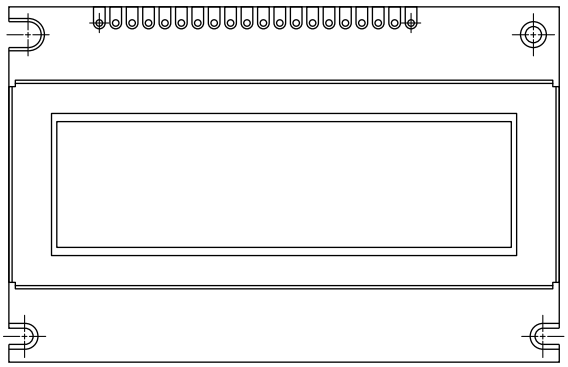
160 x 32 Graphic LCD



FEATURES

- Type: graphic
- Display format: 160 x 32 dots
- Built-in controller: SBN1661G
- Duty cycle: 1/32
- Available for external oscilation 2 kHz
- N.V. optional for +3 V power supply
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

RoHS COMPLIANT

MECHANICAL DATA

ITEM	STANDARD VALUE	UNIT
Module dimension	85.2 x 55.0	mm
Viewing area	74.0 x 22.0	
Dot size	0.40 x 0.56	
Dot pitch	0.44 x 0.61	
Mounting hole	80.2 x 46.7	
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	5.8	6.0	6.2	V
		0 °C	5.6	5.8	6.0	
		25 °C	5.3	5.5	5.7	
		50 °C	5.1	5.3	5.5	
		70 °C	4.8	5.0	5.2	
LED forward voltage	V_F	25 °C	-	4.2	4.6	V
LED forward current	I_F	25 °C	-	180	360	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	-

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

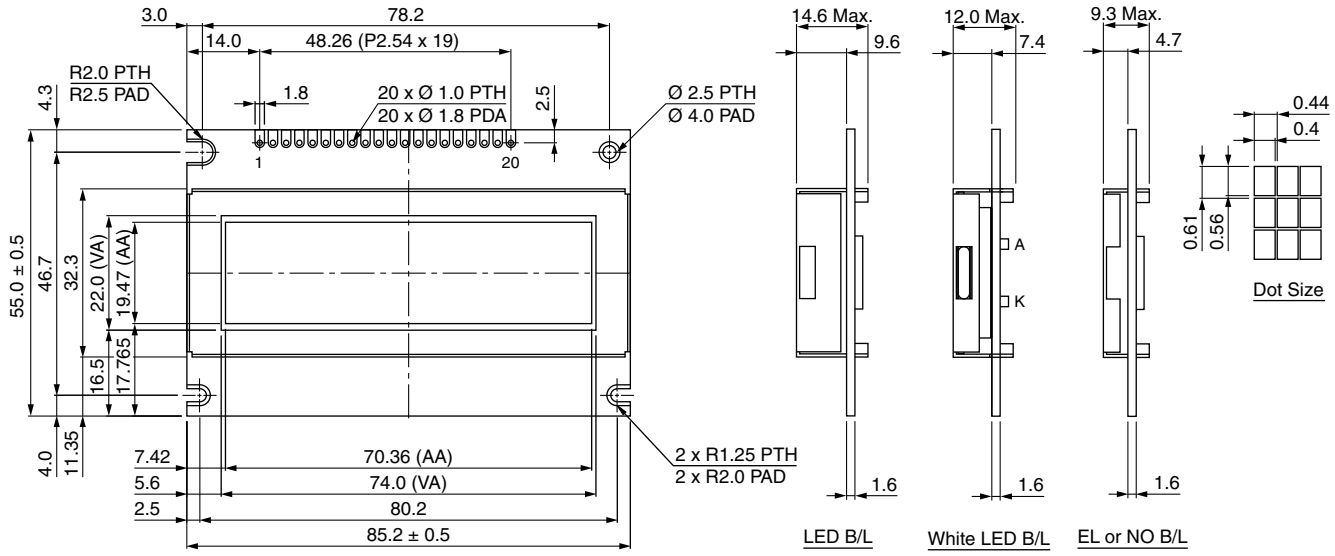
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INTERFACE PIN FUNCTION

PIN NO.	SYMBOL	FUNCTION
1	V_{SS}	Ground
2	V_{DD}	Power supply (+5 V)
3	V_0	Contrast adjustment
4	A_0	H: data / L: instruction
5	CS1	CS1 = 0, CS2 = 0 select U1 CS1 = 1, CS2 = 0 select U2 CS1 = 0, CS2 = 1 select U3
6	CS2	
7	CL	External clock 2 kHz
8	E	Enable signal
9	R / $\overline{W}$	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	Power supply for LED backlight (+4.2 V)
20	K	Power supply for LED backlight (0 V)

DIMENSIONS in millimeters



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