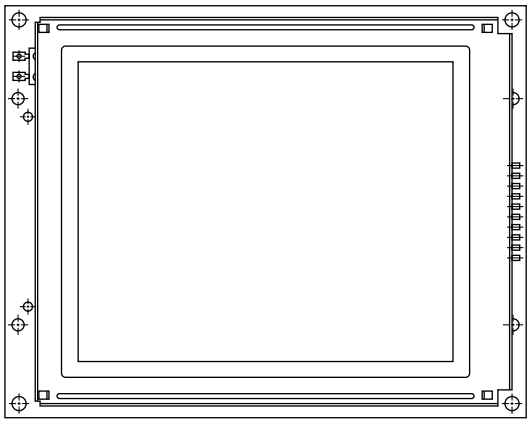
160 x 128 Graphic LCD



FEATURES

- Type: Graphic
- Display format: 160 x 128 dots
- Built-in controller: RA6963
- Duty cycle: 1/128
- Optional N.V.
- + 5 V power supply
- View angle 12° horizontal only
- 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	129.0 x 102.0	mm
Viewing Area	101.0 x 82.0	
Dot Size	0.54 x 0.54	
Dot Pitch	0.58 x 0.58	
Mounting Hole	122.0 x 96.2	
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	- 0.3	-	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}	-	4.75	5.0	5.25	V
Supply Current	I_{DD}	V_{DD} = + 5 V	-	45.0	50.0	mA
Recommended LC Driving Voltage for Normal Temperature Version Module	V_{DD} to V_0	- 20 °C	19.9	21.0	22.1	V
		25 °C	18.6	19.1	19.6	
		70 °C	11.6	9.1	12.8	
CCFL Starting Voltage	V_{FLS}	25 °C	-	-	-	V_{RMS}
CCFL Driving Voltage	V_{FLD}	25 °C	-	256	560	V_{RMS}
CCFL Driving Current	I_{FLD}	V_{FQ} = 450 V_{RMS}, 30 kHz	-	-	5.0	mA
LED Forward Voltage	V_F	25 °C	-	4.6	4.6	V
LED Forward Current	I_F	25 °C	-	-	500	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	x

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

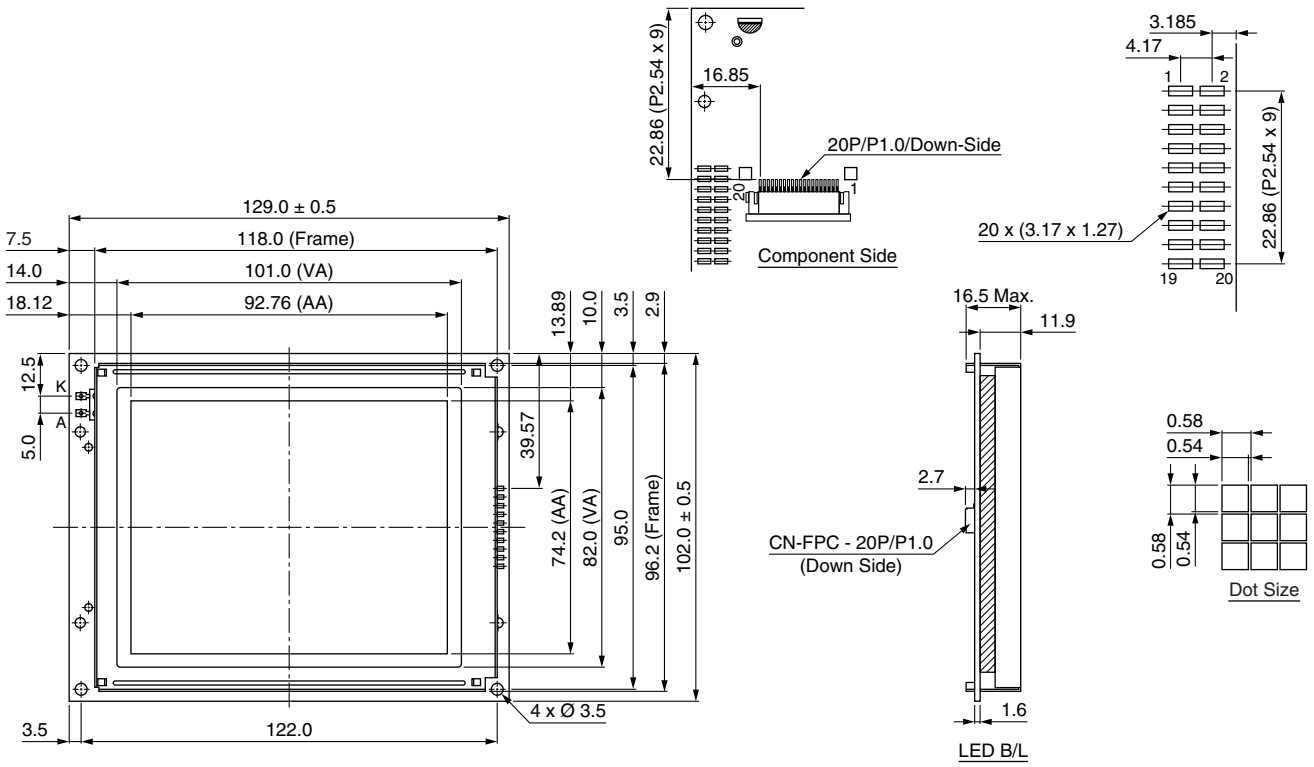
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INTERFACE PIN FUNCTION

PIN NO.	SYMBOL	FUNCTION
1	FG	Frame ground
2	V_{SS}	Power supply (Ground)
3	V_{DD}	Power supply (+ 5 V)
4	V_{ADJ}	Contrast adjustment
5	V_{EE}	Negative voltage output
6	$\overline{WR}$	Data write
7	$\overline{RD}$	Data read
8	$\overline{CE}$	Chip enable
9	C/$\overline{D}$	Command/data read/write
10	$\overline{HALT}$	Clock operating stop signal
11	$\overline{Reset}$	Reset signal
12	DB0	Data bus line
13	DB1	Data bus line
14	DB2	Data bus line
15	DB3	Data bus line
16	DB4	Data bus line
17	DB5	Data bus line
18	DB6	Data bus line
19	DB7	Data bus line
20	NC	No connection

DIMENSIONS in millimeters



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