

**Phoenix Display International, Inc.**

# PRODUCT PREVIEW

## 160 x 128 Monochrome

# TN/STN

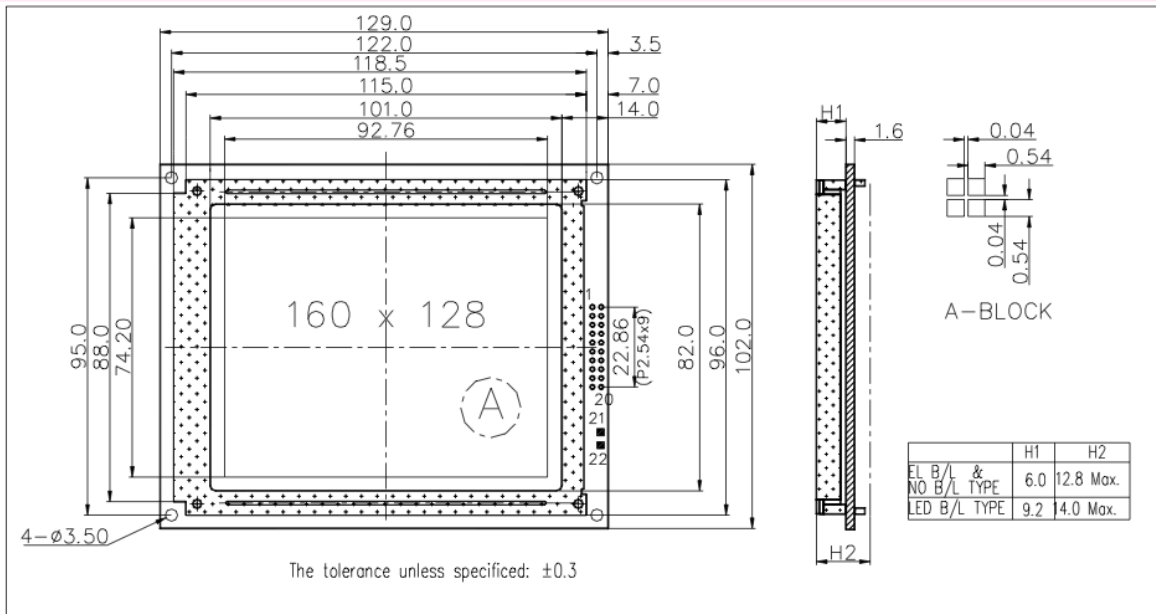
Graphics  
Liquid Crystal Display

### SPECIFICATIONS

#### MODULE

Part Number	G-16012802C-VA
Format	160 Columns by 128 Rows
Controller	T6963C
Overall Dimensions	129.0mm x 102.0mm x 12.8/14.0mm
Active Area	101.0mm x 82.0mm
Pixel Pitch	580um x 580um
Pixel Size	490um x 490um
Backlight System	None, EL or LED
Driver Attach	Chip on Board (COB)
Glass Type	STN, FSTN
Display Type	R,TF,TM
Duty	1/128

#### 1.0 DIMENSIONAL DRAWING



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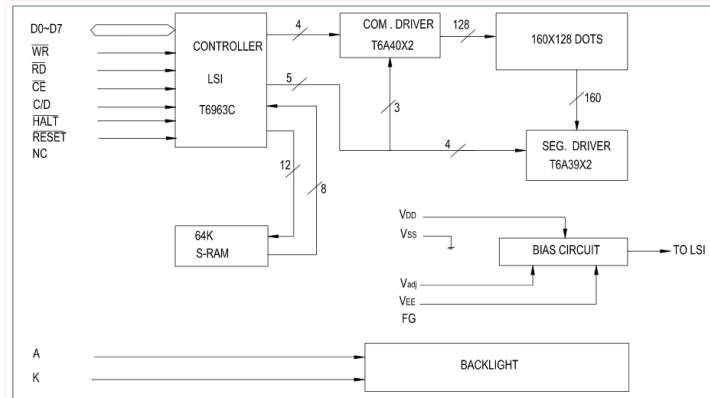


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### 2.0 BLOCK DIAGRAM



### 3.0 ELECTRICAL CHARACTERISTICS Ta=25 °C VDD=5.0V±0.25V

Item	Symbol	Test Condition	Standard Value			Unit
			Min.	Typ.	Max.	
Power Supply Voltage	V <sub>DD</sub> -V <sub>SS</sub>	25°C	4.5	5.0	5.5	V
LCD Operation Voltage	V <sub>OP</sub>		-	19.0	-	V
LCM Current Consumption	I <sub>DD</sub>		-	-	30	mA
Backlight Forward Voltage	V <sub>F</sub>		-	4.2	-	V

### 4.0 ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Test Condition	Standard Value		
			Min.	Max.	Unit
Supply Voltage (Logic)	V <sub>DD</sub> -V <sub>SS</sub>	25°C	-0.3	7.0	V
Supply Voltage (LCD)	V <sub>DD</sub> -V <sub>O</sub>		-	28	V
Input Voltage	V <sub>IN</sub>		-0.3	V <sub>DD</sub> +0.3	V
Operating Temp.	T <sub>OPR</sub>	-	0	50	°C
Storage Temp.	T <sub>STG</sub>	-	-20	60	°C

### 5.0 PIN ASSIGNMENT

PIN No.	Symbol	Description
1	FG	Frame Ground
2	V <sub>SS</sub>	Ground
3	V <sub>DD</sub>	Power supply for logic circuit
4	V <sub>O</sub>	Voltage level for LCD contrast adjustment
5	VEE	Power supply for driving
6	WR	Command and data write signal
7	RD	Data and status read signal
8	CE	Chip enable signal
9	C/D	Write: H-Command write, L-Data write Read: H-Status read, L-Data read
10	HALT	H-Normal, L-Stop the oscillation of clock
11	RESET	Reset signal
12-19	DB0-DB7	Data bus
20	nc	No connection
21	LEDK	LED Back-light
22	LEDA	LED Back-light

Remark

- LCD option: STN, FSTN.
- Standard module.
- Backlight option: LED backlight feature, other specs not available on catalog is under request.

