

# PRODUCT PREVIEW

## 160 x 128 Monochrome

### SPECIFICATIONS

#### MODULE

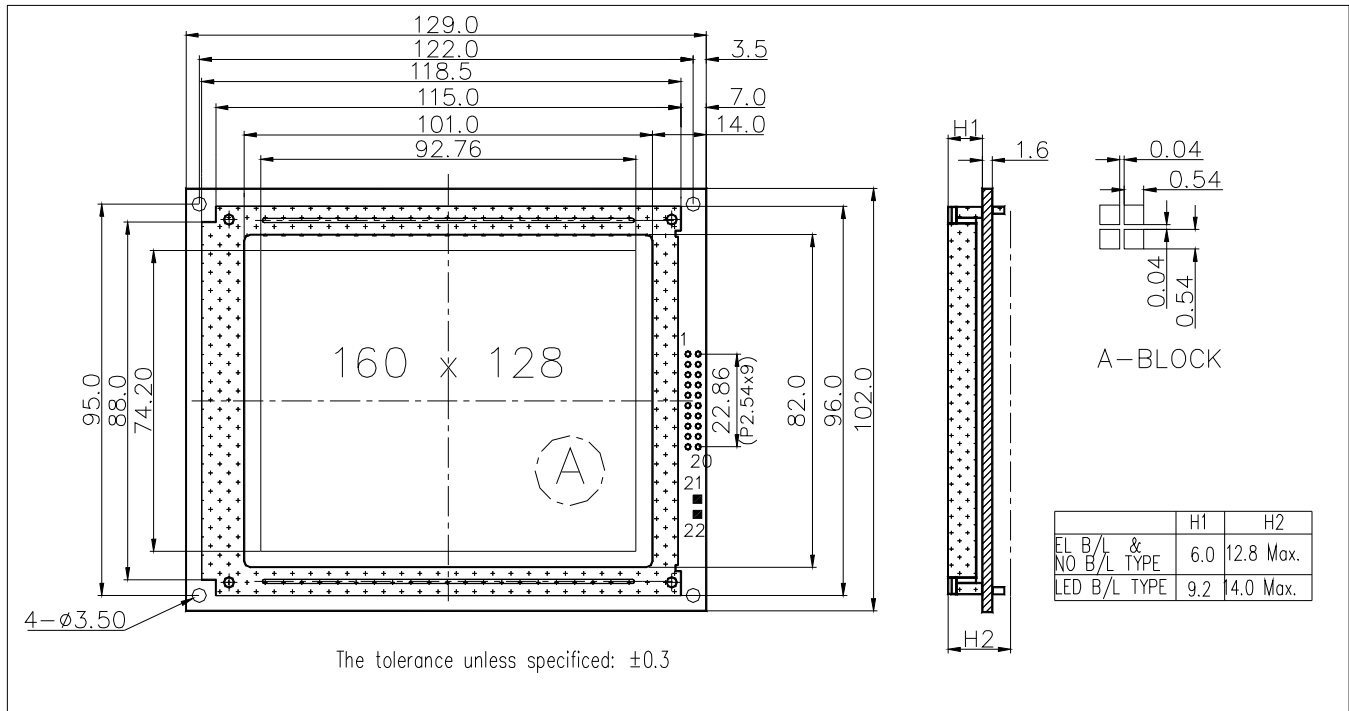
Part Number	G-16012802C-VA
Format	160 Columns by 128 Rows
Controller	T6963C
Overall Dimensions	129.0mm x 102.0mm x 12.8/14.0mm
Active Area	92.8mm x 74.2mm
Pixel Pitch	580um x 580um
Pixel Size	490um x 490um
Backlight System	None, EL or LED
Driver Attach	Chip on Board (COB)
Display Type	STN, FSTN
Duty	1/128
Bias	1/12.3



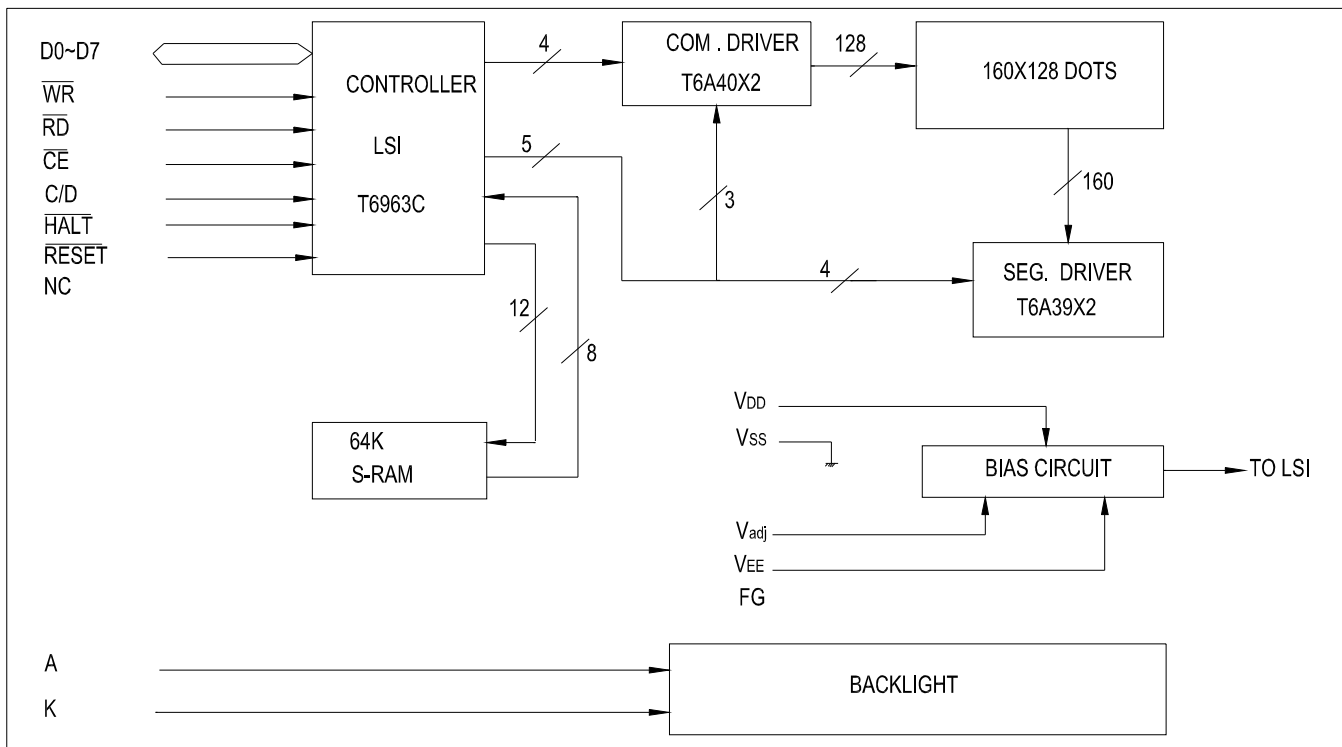
# G-16012802C-VA

1/128 DUTY, 1/12.3 BIAS  
160x128 DOTS

## 1.0 DIMENSIONAL DRAWING



## 2.0 BLOCK DIAGRAM



## 3.0 ELECTRICAL CHARACTERISTICS $T_a=25^\circ\text{C}$ $V_{DD}=5.0\text{V}\pm 0.25\text{V}$

Item	Symbol	Test Condition	Standard Value			Unit
			Min.	Typ.	Max.	
Power Supply Voltage	$V_{DD}-V_{SS}$	25°C	4.5	5.0	5.5	V
LCD Operation Voltage	$V_{OP}$		-	19.0	-	V
LCM Current Consumption	$I_{DD}$		-	-	30	mA
Backlight Forward Voltage	$V_F$		-	4.2	-	V

#### 4.0 ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Test Condition	Standard Value		
			Min.	Max.	Unit
Supply Voltage (Logic)	$V_{DD}-V_{SS}$	25°C	-0.3	7.0	V
Supply Voltage (LCD)	$V_{DD}-V_O$		-	28	V
Input Voltage	$V_{IN}$		-0.3	$V_{DD}+0.3$	V
Operating Temp.	$T_{OPR}$	-	0	50	°C
Storage Temp.	$T_{STG}$	-	-20	60	°C

#### 5.0 PIN ASSIGNMENT

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

#### Remark

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