

*Phoenix Display International, Inc.*

# PRODUCT PREVIEW

## 192 x 96 Monochrome

**TN/STN**

Graphics

Liquid Crystal Display

### SPECIFICATIONS

#### MODULE

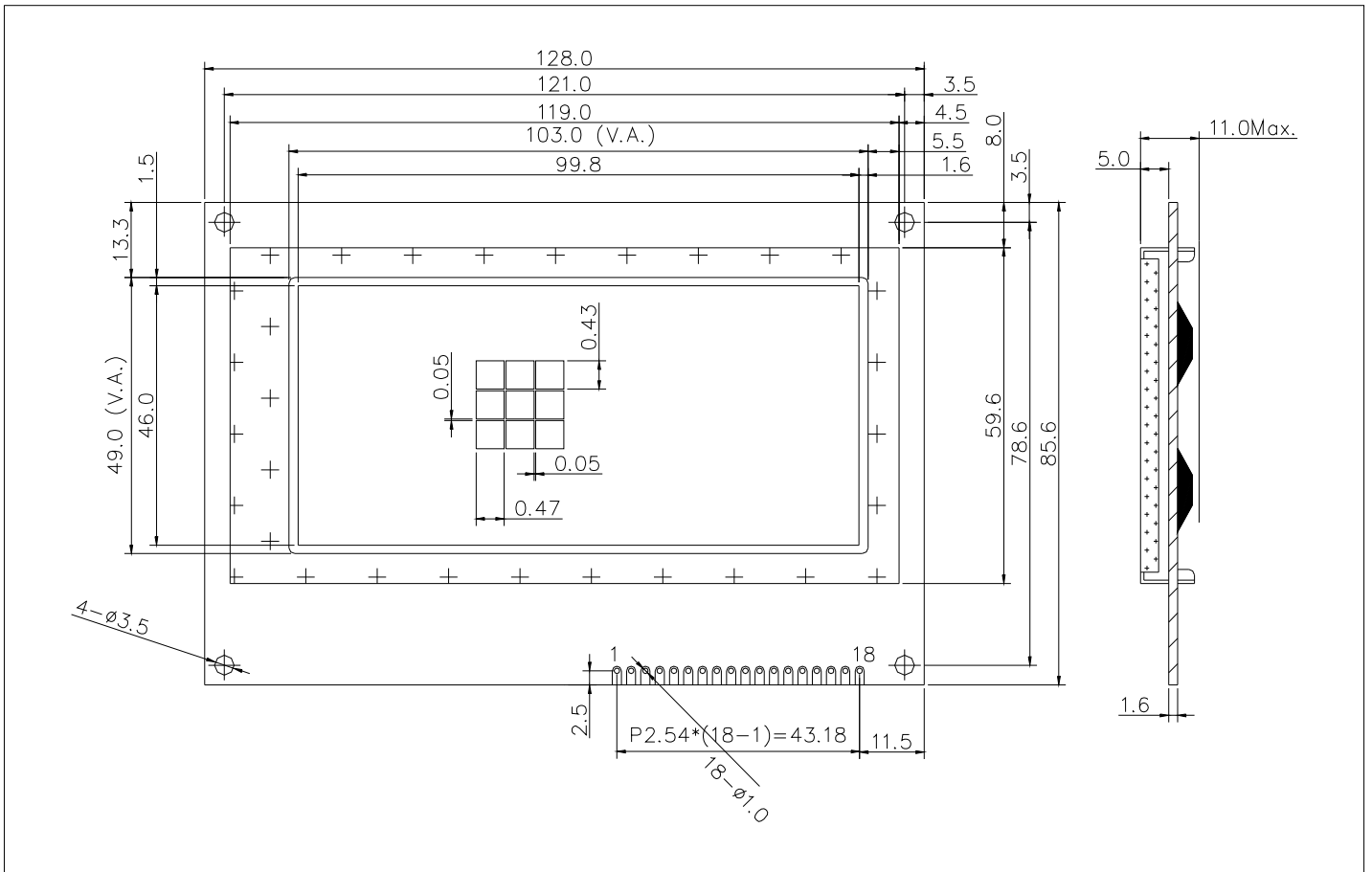
Part Number	G-1929601C-VA
Format	192 Columns by 96 Rows
Controller	KS0108
Overall Dimensions	128.0mm x 85.6mm 11.0mm
Active Area	99.8mm x 46.0mm
Pixel Pitch	520um x 480um
Pixel Size	470um x 430um
Backlight System	None
Driver Attach	Chip on Board (COB)
Display Type	STN, FSTN
Duty	1/64
Bias	1/9



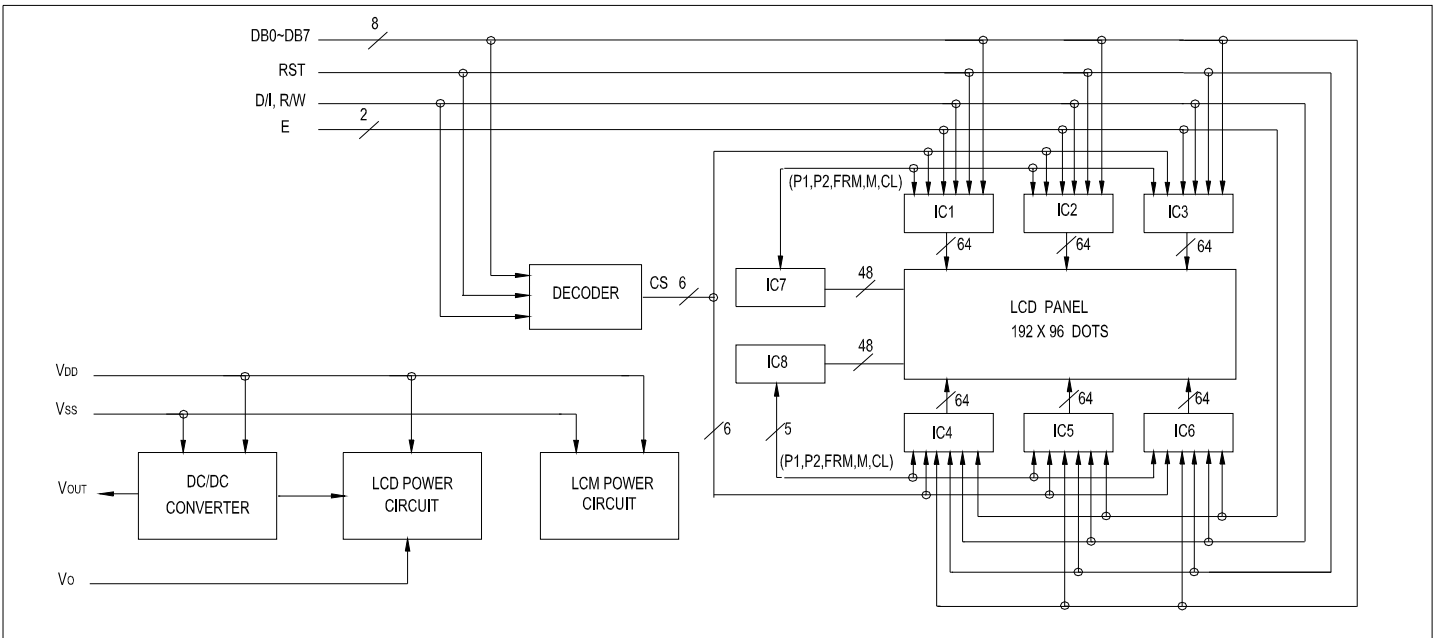
# G-1929601C-VA

1/64 DUTY, 1/9 BIAS  
192x64 DOTS

## 1.0 DIMENSIONAL DRAWING



## 2.0 BLOCK DIAGRAM



## 3.0 ELECTRICAL CHARACTERISTICS Ta=25 °C V<sub>DD</sub>=5.0V±0.25V

Item	Symbol	Test Condition	Standard Value			
			Min.	Typ.	Max.	Unit
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>		-	9.6	-	V
LCM Current Consumption	I <sub>DD</sub>		-	10.0	18.0	mA
Backlight Forward Voltage	V <sub>F</sub>		-	5.0	-	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)	$V_{DD}-V_O$		-0.3	17.5	V
Input Voltage	$V_{IN}$		-0.3	$V_{DD}+0.3$	V
Operating Temp.	$T_{OPR}$	-	0	50	°C
Storage Temp.	$T_{STG}$	-	-20	70	°C

## 5.0 PIN ASSIGNMENT

PIN No.	Symbol	Description
1	Vout	Negative Voltage Output
2	RST	Reset Signal
3-10	DB0-DB7	Data bus line
11	E	Chip Enable signal
12	R/W	H: Data/status read L: Data/instruction write
13	D/I	H: Display data L: Instruction code
14	Vo	Contrast adjust
15	$V_{DD}$	Power supply
16	Vss	Power supply(GND)
17	NC	No connection
18	NC	No connection

### Remark

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