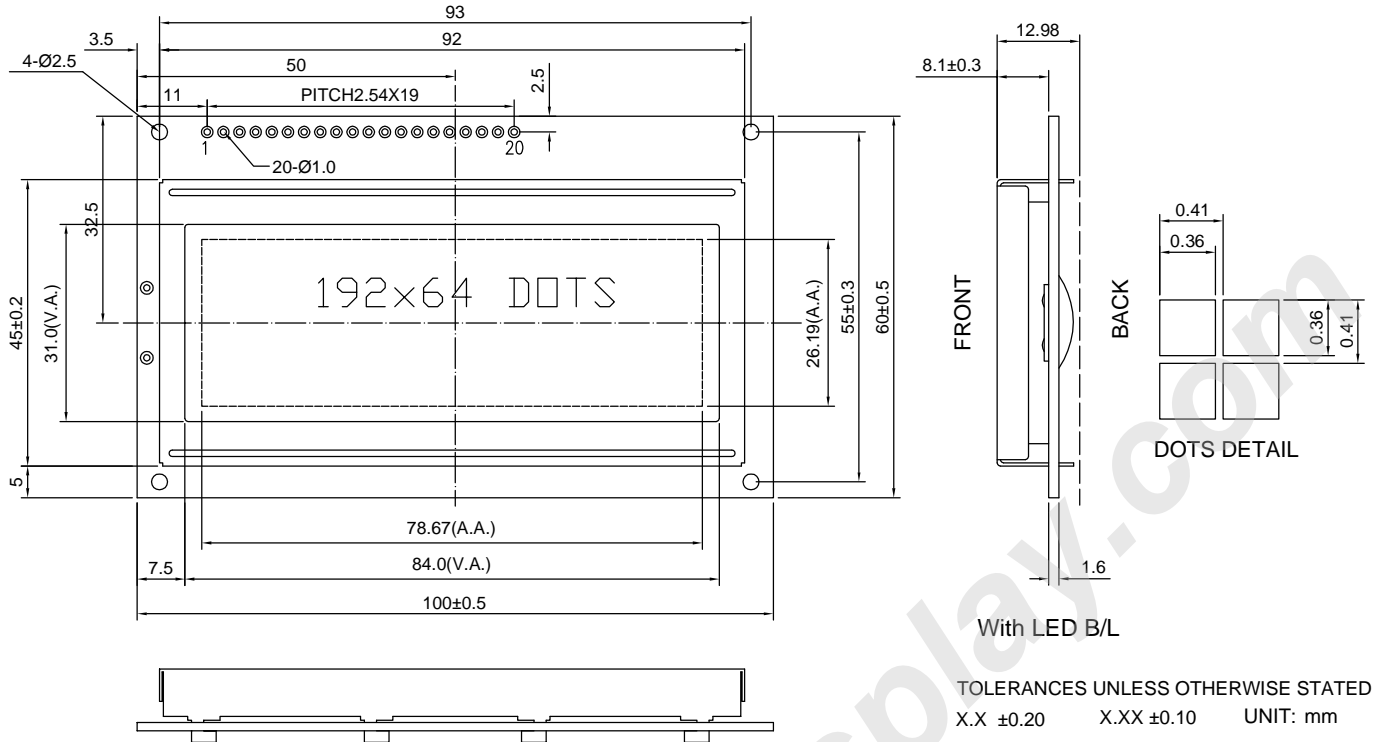


## Dimension Drawing



## Feature:

1. 192 x 64 dots graphic display
2. Built-in controller(NT7108 or equivalent)
3. +5V power supply(also available for +3.3V)
4. 1/64 Duty cycle
5. STN or FSTN Mode
6. Match all kind colors of LED back light
7. ROHS compliant

## Interface Pin Connections

PIN NO.	Symbol	Function
1	CSA	L → Chip1 Enable
2	CSB	L → Chip2 Enable
3	VSS	GND
4	VDD	+5V or +3.3V
5	V0	Contrast adjustment
6	D/I	H → Data L → Instruction
7	R/W	H :Read data L :Write data
8	E	Enable signal
9	DB0	H/L Data bus line
10	DB1	H/L Data bus line
11	DB2	H/L Data bus line
12	DB3	H/L Data bus line
13	DB4	H/L Data bus line
14	DB5	H/L Data bus line
15	DB6	H/L Data bus line
16	DB7	H/L Data bus line
17	REST	H → L Rest the LCM
18	VEE	Negative voltage output
19	A	Power supply for B/L(LED+)
20	K	Power supply for B/L(LED-)

## Mechanical Data

Item	Standard	Unit
Module dimension	100.0 x 60.0	mm
Viewing area	84.0 x 31.0	mm
Mounting hole	93.0 x 55.0	mm
Dots size	0.36 x 0.36	mm

## Absolute Maximum Rating

Item	Symbol	Standard			Unit
		Min	Typ	Max	
Power supply	VDD-VSS	-0.3	---	7.0	V
Input voltage	VI	VDD-19.0	---	VDD+0.3	

## Electronical Characteristics

Item	Symbol	Condition	Standard			Unit
			Min	Typ	Max	
Input voltage	VDD	+5.0V	4.5	5.0	5.5	V
		+3.3V	2.7	3.3	4.5	V
Supply current	I <sub>DD</sub>	VDD=5V	----	----	0.5	mA
Recommended LCD driving voltage for normal temp version module	VDD-V0 (VDD=5V)	-20 °C	9.7	9.9	10.2	V
		0 °C	9.5	9.7	10.0	
		25 °C	9.2	9.5	9.8	
		50 °C	9.0	9.3	9.5	
LED forward voltage	VF	25 °C	----	3.0	3.3	V
		25 °C	Array	----	320	----
LED forward current	IF	Edge	----	80	120	
		EL power supply	I <sub>EL</sub>	V <sub>EL</sub> =110V AC 400Hz	----	----