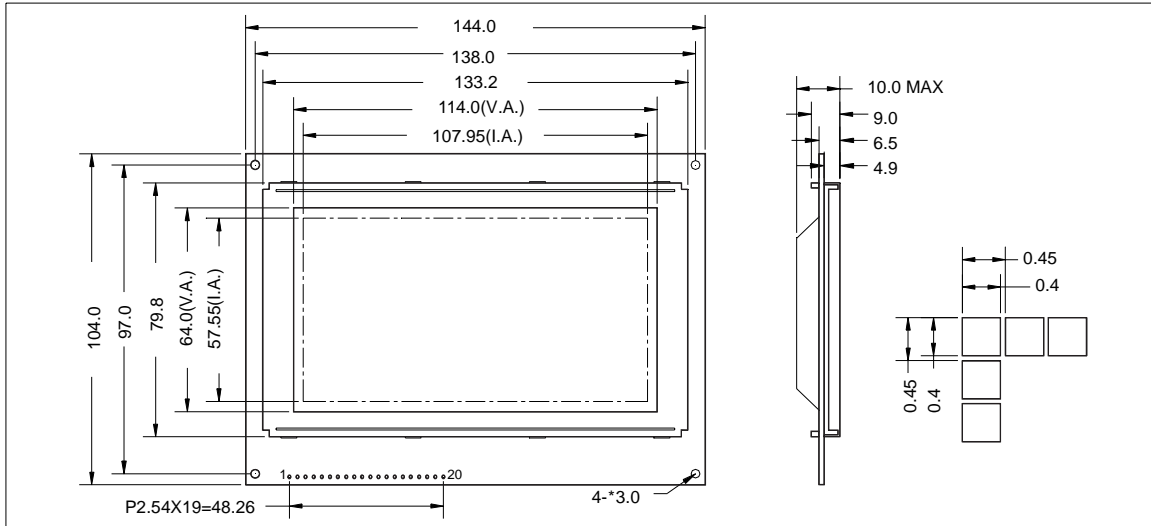


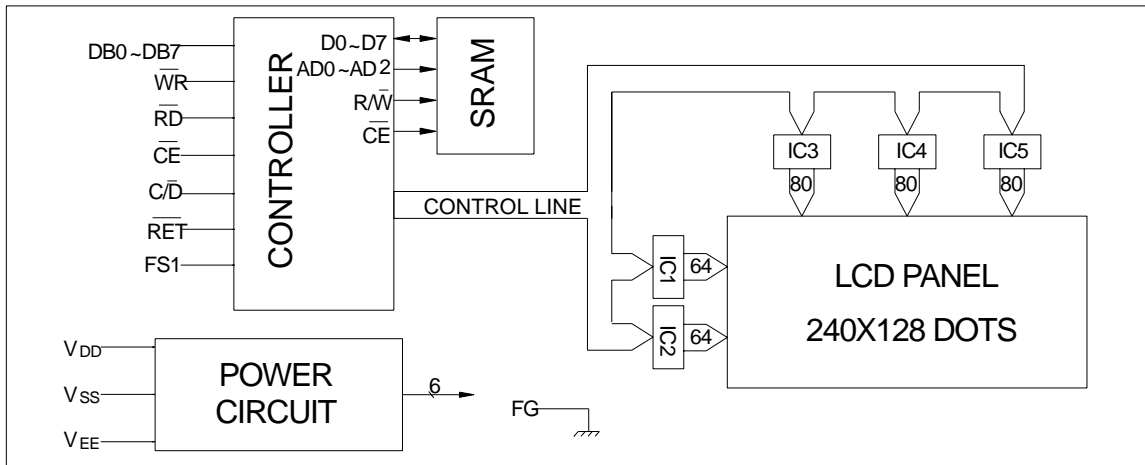
**1.0 Features**

- \* Display Mode: Reflective and Positive Type STN, Normal Temp.
- \* Input Data: 8-Bits Parallel Data Input from a MPU
- \* Assembly: SMT
- \* Backlight: Optional

**2.0 External Dimensions**



**3.0 Block Diagram**



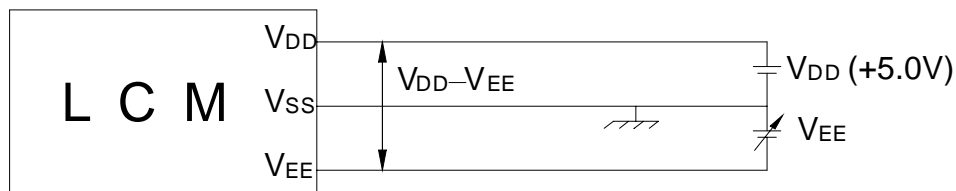
**4.0 Maximum Rating**

Item	Symbol	Test Condition	Standard Value		Unit
			Min.	Max.	
Supply Voltage for Logic	$V_{DD}-V_{SS}$	$T_a=25\text{ }^\circ\text{C}$	0	6.0	V
Supply Voltage for LCD	$V_{DD}-V_{EE}$		0	25.0	V
Input Voltage	$V_i$		0	$V_{DD}$	V
Operating Temperature	$T_{opr}$	—	0	+50	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	—	-10	+60	$^\circ\text{C}$

## 5.0 Electro-Optical Characteristics

Item		Symbol	Conditions	Standard Value			Unit
				Min.	Typ.	Max.	
Power Supply for Logic	Logic	V <sub>DD</sub>	—	4.75	5.0	5.25	V
	LCD Drive	V <sub>DD-V<sub>EE</sub></sub>		—	21.0	—	
Frame Frequency		f FLM	V <sub>DD</sub> =5.0V	70	75	80	Hz
Current Consumption		I <sub>DD</sub>	V <sub>DD</sub> =5.0V, V <sub>DD-V<sub>EE</sub></sub> =21.0 f FLM=75Hz	—	5.7	10.0	mA
LCD Driving Voltage(Recommended)		V <sub>DD-V<sub>EE</sub></sub>	T <sub>a</sub> =25 °C; Ø, θ =0°	—	21.0	—	V
Response Time(Rising)		T <sub>r</sub>	T <sub>a</sub> =25 °C; Ø, θ =0°	—	100	150	ms
Response Time(Decay)		T <sub>d</sub>		—	200	250	ms
Viewing Angle		Ø2-Ø1	K≥2	5	—	45	DEG.
Contrast Ratio		K	Ø=0° , θ =0°	15.0	25.0	—	—

## 6.0 Power Supply for LCM



V<sub>DD</sub> -V<sub>EE</sub>: LCD Driving Voltage

## 7.0 I/O Connection

Pin No	Symbol	Level	Function
1	\	—	No connection
2	\	—	No connection
3	FG	0V	Frame ground
4	V <sub>SS</sub>	0V	Ground
5	V <sub>DD</sub>	5.0V	Power supply for logic and LCD
6	V <sub>EE</sub>	—	Power supply for LCD
7	WR	L	Write signal
8	RD	L	Read signal
9	CE	L	Chip enable signal
10	C/D	H/L	H: Instruction code L: Data
11	RST	L	Reset signal
12	DB0	H/L	Data bit 0
13	DB1	H/L	Data bit 1
14	DB2	H/L	Data bit 2
15	DB3	H/L	Data bit 3
16	DB4	H/L	Data bit 4
17	DB5	H/L	Data bit 5
18	DB6	H/L	Data bit 6
19	DB7	H/L	Data bit 7
20	FS	—	Font select signal