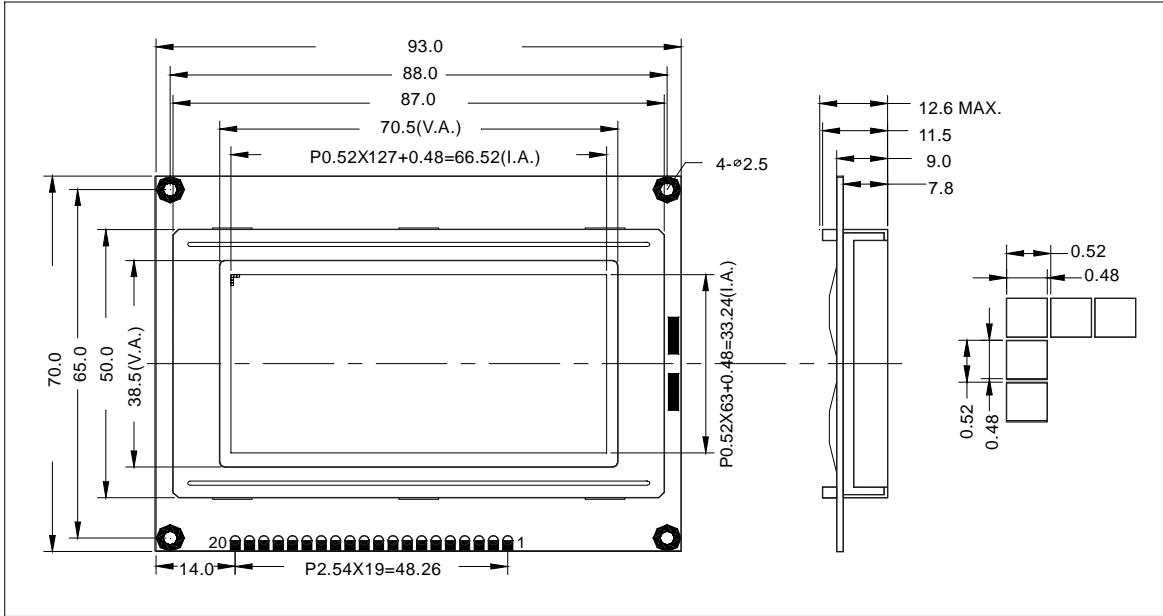


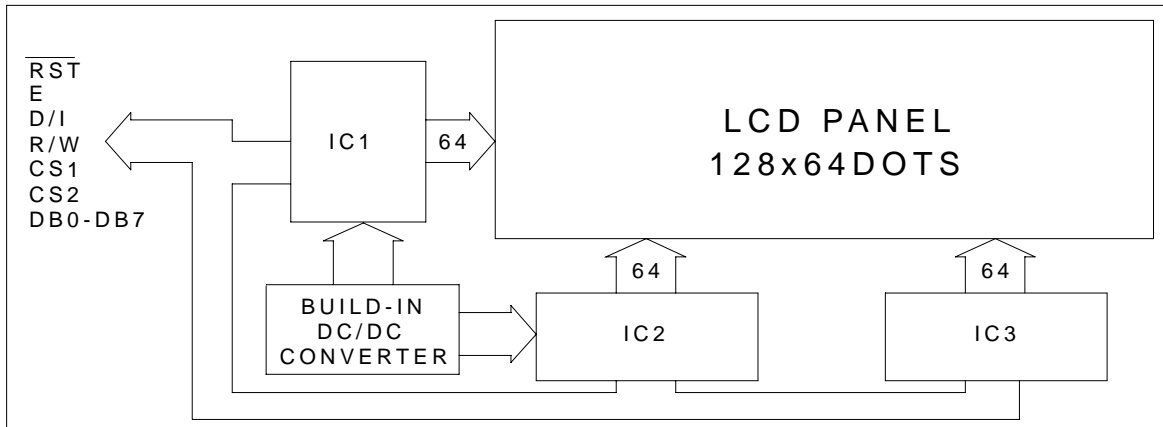
1.0 Features

- \* Display Mode: Reflective/Transflective/Transmissive and Positive Type STN
- \* Input Data: 8-Bits Parallel Data Input from a MPU
- \* Assembly: COB
- \* Backlight: Optional

2.0 External Dimensions



3.0 Block Diagram



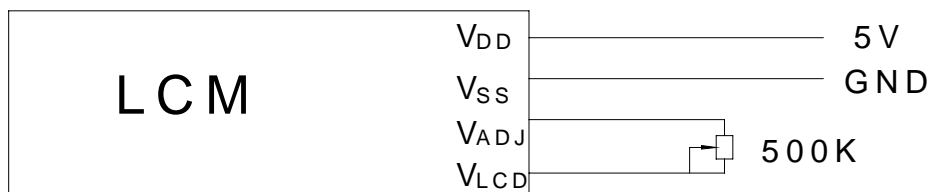
4.0 Maximum Rating

Item	Symbol	Test Condition	Standard Value		Unit
			Min.	Max.	
Supply Voltage for Logic	V <sub>DD</sub> -V <sub>SS</sub>	Ta=25 °C	0	6	V
Supply Voltage for LCD	V <sub>DD</sub> -V <sub>EE</sub>		0	16.0	V
Input Voltage	V <sub>I</sub>		0	V <sub>DD</sub>	V
Operating Temperature	T <sub>opr</sub>	—	0	50	°C
Storage Temperature	T <sub>stg</sub>	—	-20	60	°C

## 5.0 Electro-Optical Characteristics

Item	Symbol	Conditions	Standard Value			Unit	
			Min.	Typ.	Max.		
Power Supply for Logic	Logic	Vdd	—	4.5	5.0	5.5	V
	LCD Drive	Vdd-Vee		11.5	—	12.5	
Frame Frequency	f FLM	Vdd=5.0V	70	75	80	Hz	
Current Consumption	Idd	Vdd=5.0V, Vdd-V0=12.0 f FLM=75Hz	—	—	2.8	mA	
LCD Driving Voltage(Recommended)	Vdd-V0	Ta=25 °C; $\varnothing$ , $\theta=0^\circ$	11.5	12.0	12.5	V	
Response Time(Rising)	Tr	Ta=25 °C; $\varnothing$ , $\theta=0^\circ$	—	150	200	ms	
Response Time(Decay)	Td		—	200	250	ms	
Viewing Angle	$\varnothing2-\varnothing1$	$K \geq 2$	-30	—	30	DEG.	
Contrast Ratio	K	$\varnothing=0^\circ$ , $\theta=0^\circ$	2.0	5.0	—	—	

## 6.0 Power Supply for LCM



## 7.0 I/O Connection

Pin No	Symbol	Level	Function
1	GND	0V	Ground
2	VDD	5.0V	Power supply for logic and LCD
3	VLCD	—	Power supply for LCD
4	D/I	H/L	H: Display Data L: Instruction Data
5	R/W	H/L	H: Read L: Write
6	E	H, H/L	Enable signal
7	DB0	H/L	Data Bus Line
8	DB1	H/L	
9	DB2	H/L	
10	DB3	H/L	
11	DB4	H/L	
12	DB5	H/L	
13	DB6	H/L	
14	DB7	H/L	
15	CS1	H/L	Chip selection
16	CS2	H/L	Chip selection
17	/RST	H/L	Controller reset at low level
18	VADJ	—	Active high start-of-frame pulse signal
19	BL+	—	Power Supply for LED
20	BL-	—	Power Supply for LED