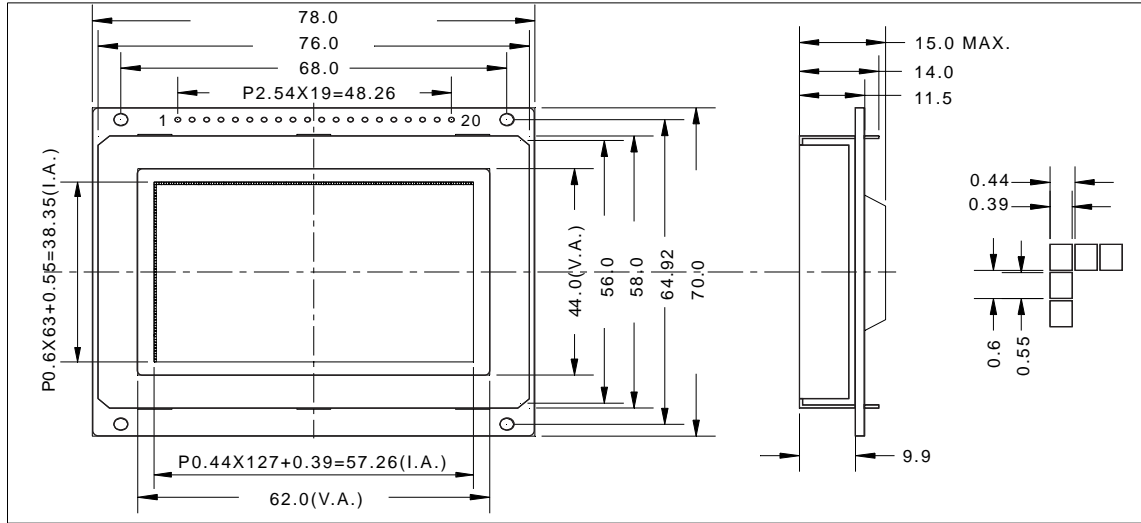


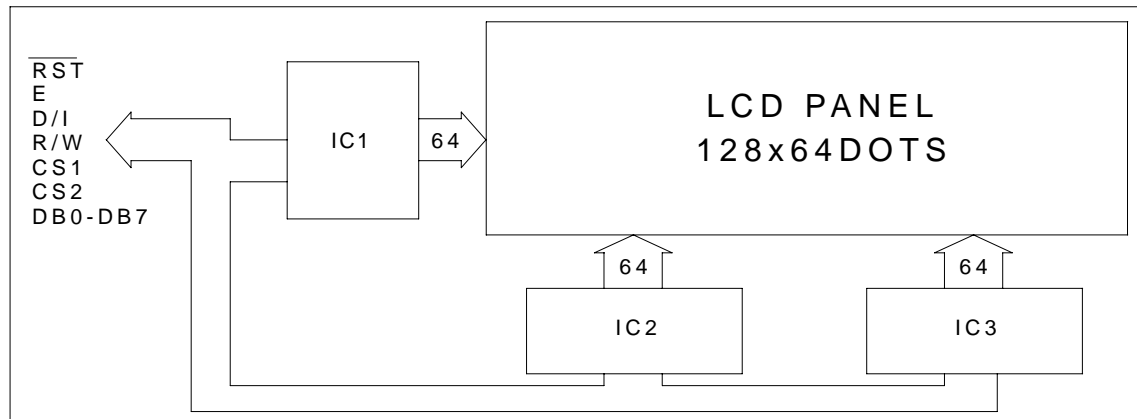
1.0 Features

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

2.0 External Dimensions



3.0 Block Diagram



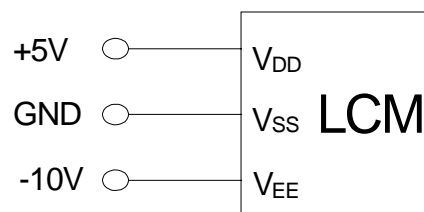
4.0 Maximum Rating

Item	Symbol	Test Condition	Standard Value		Unit
			Min.	Max.	
Supply Voltage for Logic	V _{DD} -V _{SS}	Ta=25 °C	-0.3	7.0	V
Supply Voltage for LCD	V _{DD} -V _{EE}		0	20	V
Input Voltage	V _I		-0.3	V _{DD} + 0.3	V
Operating Temperature	T _{opr}	—	0	+50	°C
Storage Temperature	T _{stg}	—	-20	+60	°C

5.0 Electro-Optical Characteristics

Item	Symbol	Conditions	Standard Value			Unit
			Min.	Typ.	Max.	
Power Supply for Logic	Logic	V _{DD}	4.5	5.0	5.5	V
	LCD Drive	V _{DD-V_{EE}}	—	15	18	
Frame Frequency	f FLM	V _{DD} =5.0V	70	75	80	Hz
Current Consumption	I _{DD}	V _{DD} =5.0V, V _{DD-V_{EE}} =15.0 f FLM=75Hz	—	3.3	6.0	mA
LCD Driving Voltage(Recommended)	V _{DD-V_{EE}}	T _a =25 °C; $\phi, \theta = 0^\circ$	—	15	—	V
Response Time(Rising)	T _r	T _a =25 °C; $\phi, \theta = 0^\circ$	—	150	200	ms
Response Time(Decay)	T _d		—	200	250	ms
Viewing Angle	$\phi 2-\phi 1$	K ≥ 2	-30	—	30	DEG.
Contrast Ratio	K	$\phi = 0^\circ, \theta = 0^\circ$	2.0	5.0	—	—

6.0 Power Supply for LCM



7.0 I/O Connection

Pin No	Symbol	Level	Function
1	FG	0V	Ground of frame.
2	V _{SS}	0V	Ground.
3	V _{DD}	5V	Power supply for logic and LCD
4	V _{EE}		Operating voltage for LCD driving
5	/WR		Writing data to a control register
6	/RD		Reading data to a control register
7	/CE		Chip enable.
8	C/D		/WR="L";C/D="H": Command write, C/D="L": Data write /RD="L";C/D="H": Status read, C/D="L": Data read
9	/RESET		MPU reset input.
10~17	D0~D7		Connected to the MPU data bus
18	FS1		Select character type.
19	LED-	0V	Backlight power supply.
20	LED+	5V	Backlight power supply.