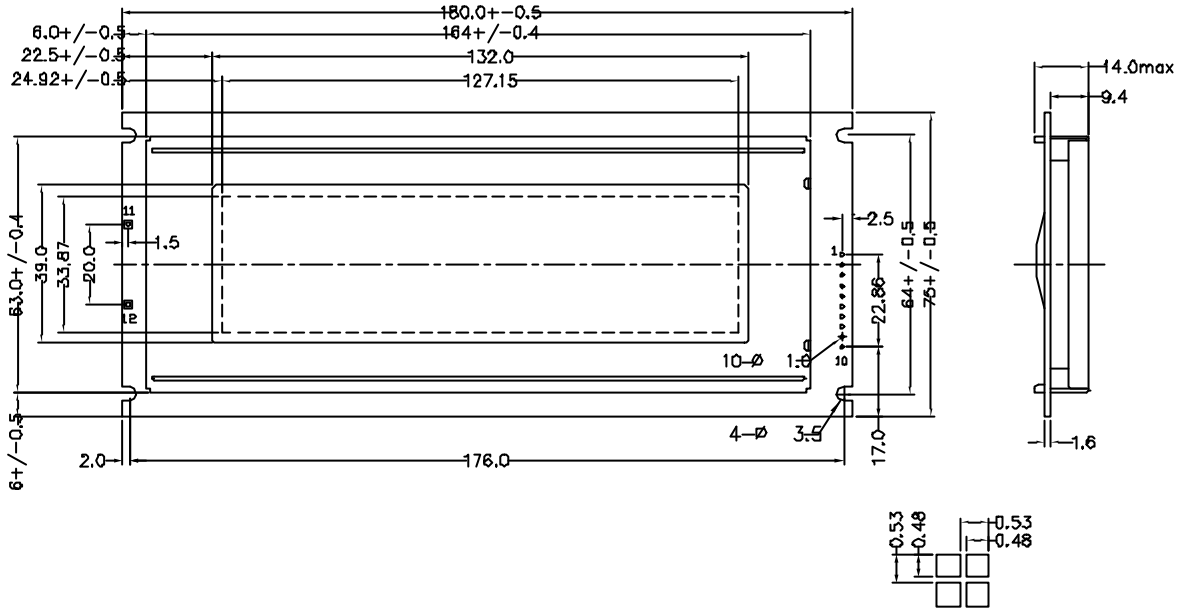


- * 240 x 64 Dots
- * EL or LED Backlight or No Backlight (Reflective)
- * Type: FSTN; STN(Yellow-Green, Grey, Blue mode)

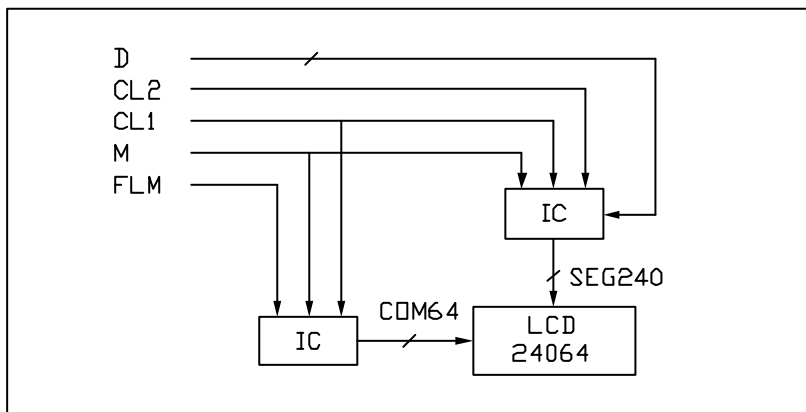
External Dimensionss/Display Pattern



External Dimensionss/Display Pattern

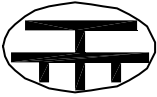
1	2	3	4	5	6	7	8	9	10	11	12
D	FLM	M	CL1	CL2	NC	Vcc	Vss	Vee	Vo	LED+	LED-

Block Diagram



Absolute Maximum Ratings

Item	Nominal Dimensions	Unit
Module Size (W x h x T)	93 x 70 x 11.0/14.0	mm
Viewing Area (W x H)	71.7 x 39.0	mm
Dots x Dots (W x H)	128 x 64	dots
Dot Pitch (W x H)	0.52 x 0.52	mm
Dot Size (W x H)	0.48 x 0.48	mm



Absolute Maximum Ratings

Item	Symbol	Test Condition	Standard Value		Unit
			Min.	Max.	
Supply Voltage for Logic	$V_{CC}-V_{SS}$	$T_a=25^{\circ}C$	0	6.5	V
Supply Voltage for LCD	$V_{CC}-V_o$		0	20.0	V
Input Voltage	V_i		0	V_{CC}	V
Operating Temperature	T_{opr}	-	0	+50	$^{\circ}C$
Storage Temperature	T_{stg}	-	-20	+60	$^{\circ}C$

Electrical Characteristics ($V_{CC}=5.0V \pm 5\%$ $T_a=25^{\circ}C, V_o=-10.0V$)

Item		Symbol	Test Condition	Standard Value			Unit
				Min.	Typ.	Max.	
Supply Voltage for	Logic	$V_{CC}-V_{SS}$	-	4.5	5.0	5.5	V
	LCD	$V_{CC}-V_o$	-	-	15.0	-	V
Supply Current for	Logic	I_{CC}	-	-	8.7	-	mA
	LCD	I_o	-	-	2.0	-	mA
Operating Voltage for LCD (Recommended)		$V_{CC}-V_o$	-	-	-	-	V
			$25^{\circ}C$	-	11.5	-	V
			-	-	-	-	V
Input Voltage	'H' Level	V_{ih}	High Level	$0.7V_{CC}$	-	V_{CC}	V
	'L' Level	V_{il}	Low Level	0	-	$0.3V_{CC}$	V

Electrical Characteristics

PIn No	Symbol	Input/Output	Description
1	D	Input	Serial data
2	FLM	Input	Indicates the beginning of each display cycle
3	M	Input	Control signal for AC driving
4	CS1	Input	Chip select signal for IC1
5	CS2	Input	Chip select signal for IC2
6	NC		
7	VSS	Power	Ground
8	VCC	Power	Supply Voltage for Logic and LCD
9	VEE	Power	Supply voltage for LCD
10	Vo	Input	Operating Voltage for LCD
11	LED+	BackLight Power	Supply Voltage for BackLight (+)
12	LED-	BackLight Power	Supply Voltage for BackLight (-)

The Above Spec. May Be Changed by Rev. No.