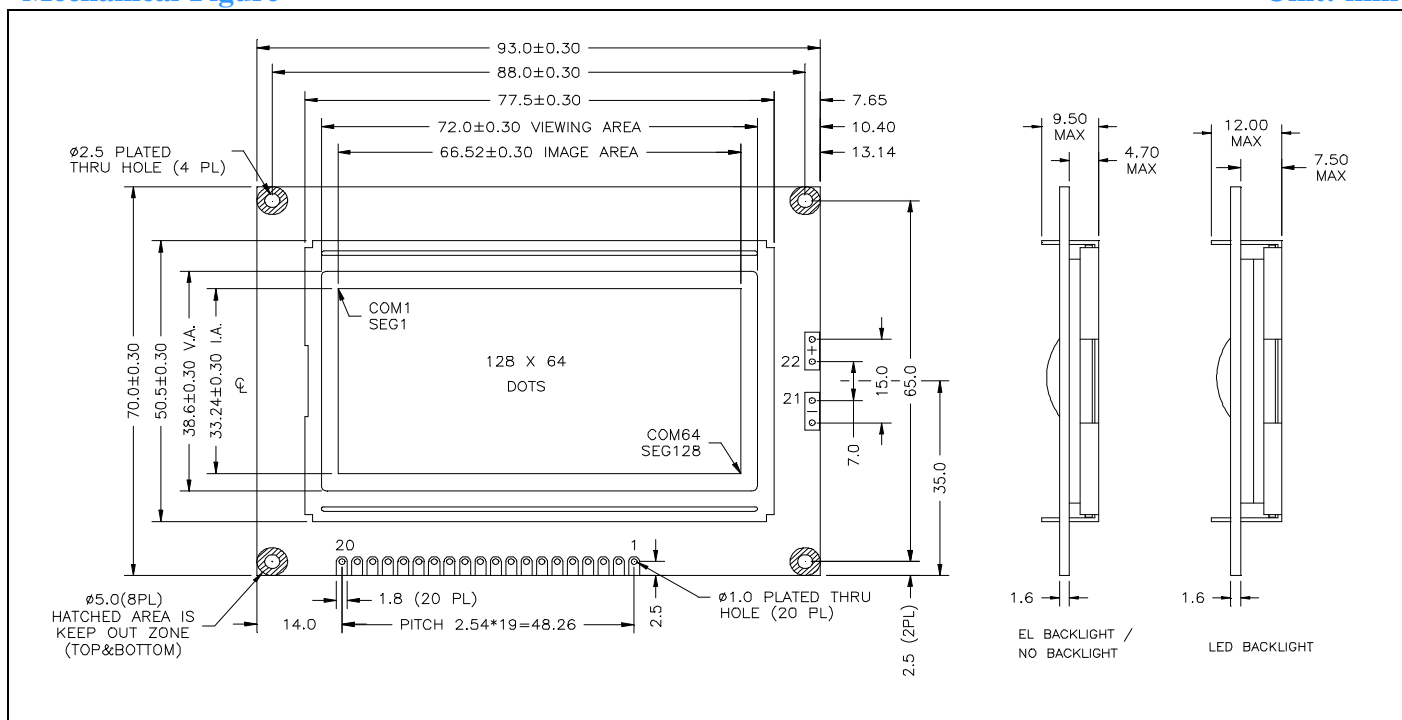| **Standard Graphic LCD Module**	**FG12864E**

Feature

1. Dot Format (128 x 64)
2. 8-Bit parallel bus interface
3. Built-in LCD controller (KS0107 & KS0108)
4. Wide operating temperature range (Option)
5. High contrast ratio
6. LED or EL Backlight   (Option)
7. Built-in negative voltage circuit   (Option)
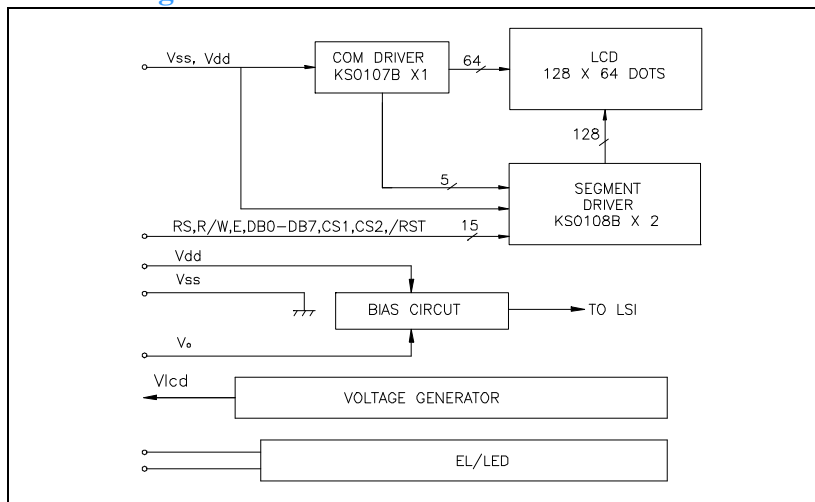
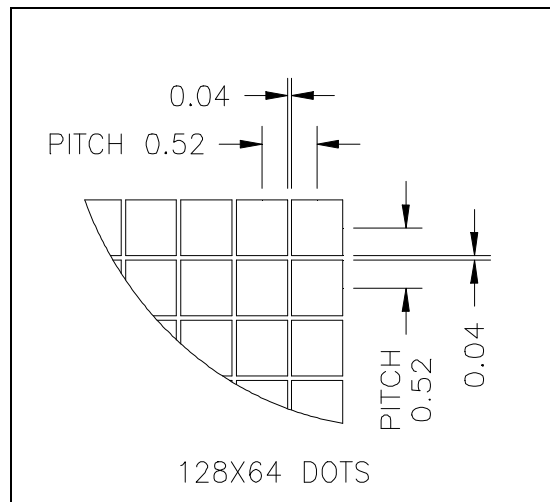## Picture Information

Mechanical Figure   Unit: mm
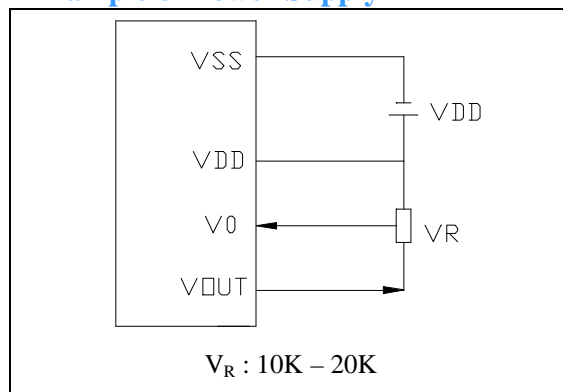

Block Diagram

Dots Size   Unit: mm

Specification

ITEM	Standard Value	Unit
Number of dots	128x64 Dots	-
Module Dimension	93.0 (W)x70.0 (H)x9.5/12.0 (T)	mm
Viewing Area	72.0 (W)x38.6 (H)	mm
Dot Size	0.48(W)x0.48 (H)	mm
Dot Pitch	0.52 (W)x0.52 (H)	mm
LCD Type	STN	
Driver Method	1/64 Duty , 1/ 9 Bias	
Viewing Direction	6 O'clock	
Controller IC	KS0108B Equivalent	

Example of Power Supply

V_R : 10K – 20K

Absolute Maximum Ratings

ITEM	Symbol	MIN.	TYP.	MAX.	Unit
Operating Temperature	T_{op}	-20	-	+70	
Storage Temperature	T_{ST}	-30	-	+80	
Input Voltage	V_I	-0.3	-	V_{DD}+0.3	V
Supply Voltage For Logic	V_{DD}-V_{SS}	-0.3	-	7.0	V
Supply Voltage For LCD	V_{DD} -V_5	-0.3	-	16.0	V

Electrical Characteristics

ITEM	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Supply Voltage For Logic	V_{DD}-V_{SS}		-	5.0	5.5	V
Supply Voltage For LCD	V_{DD} -V_{EE} (V_{OP})	Ta=25	13.0	13.7	16.0	V
Input High Voltage			0.8 V_{DD}	-	V_{DD}	V
Input Low Voltage			0	-	0.2 V_{DD}	V
Output High Voltage		I_{OH}=-0.5mA	0.8 V_{DD}	-	V_{DD}	V
Output Low Voltage			0	-	0.2 V_{DD}	V

Pin Assignment

Pin	Symbol	Level	Function	MIN.	TYP.	MAX.	Unit
1	V_{SS}	0V	Power Supply (GND)				
2	V_{dd}	+5V	Power Supply (+5V)	4.5	5.0	5.5	V
3	V_0	-	Contrast Adjust Voltage	-	-	-	V
4	RS	H/L	Register Select Signal				
5	R/W	H/L	Data Read/Write				
6	E	H/L	Enable Signal				
7	DB0	H/L	Data Bus				
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	Chip Select IC1				
16	CS2	H	Chip Select IC2				
17	/RST	-	Reset Signal				
18	V_{lcd}	-	Negative Voltage Output				
19	LED+	-	Power Supply For LED Backlight	3.9	4.1	4.3	V
20	LED-	-		-	0	-	V