

Standard Graphic LCD Module

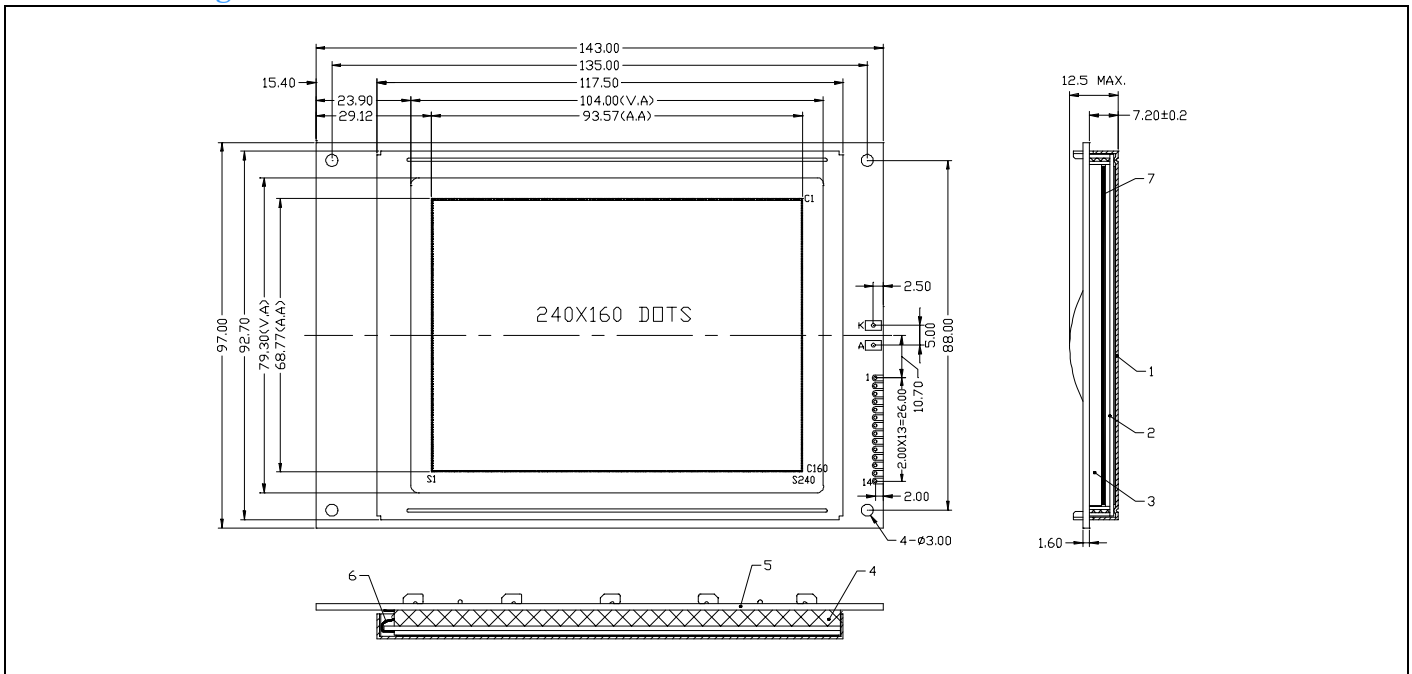
PSG240160B

Feature

1. Dot Format ( 240 x 160 )
2. 4-Bit parallel bus interface
3. No Built-in LCD controller
4. Wide operating temperature range ( Option )
5. High contrast ratio
6. LED or EL Backlight ( Option )
7. Built-in negative voltage circuit ( Option )

Mechanical Figure

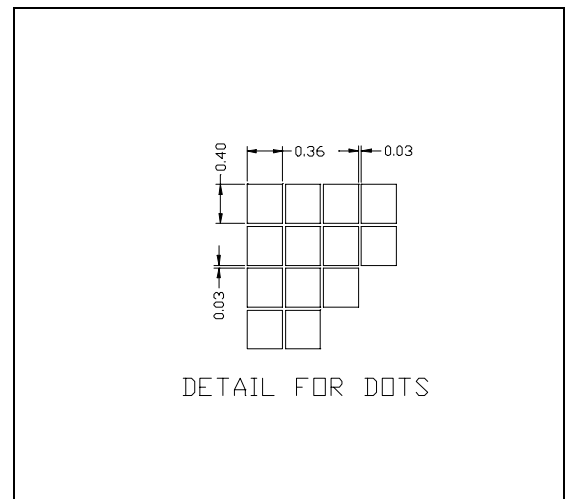
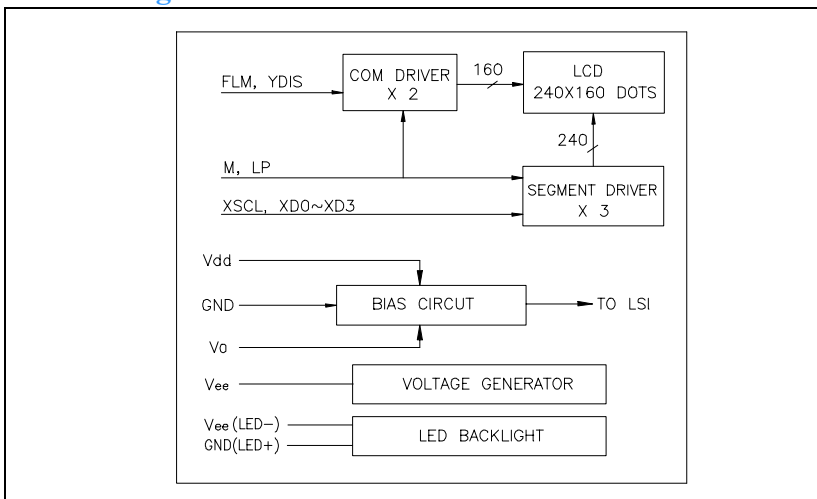
Unit: mm



Block Diagram

Dots Size

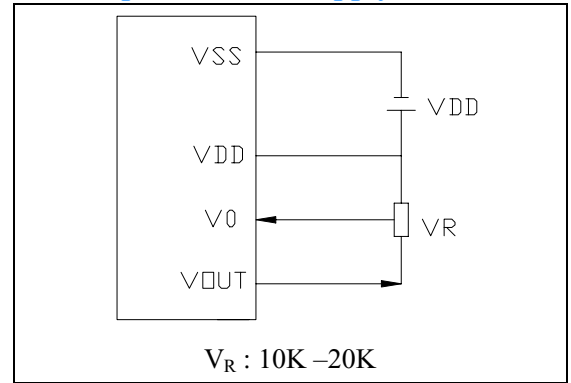
Unit: mm



## Specification

ITEM	Standard Value	Unit
Number of dots	240x160 Dots	-
Module Dimension	143.0(W)x97.0(H)x12.5	mm
Viewing Area	104.0 (W)x 79.3 (H)	mm
Dot Size	0.36 (W)x 0.36 (H)	mm
Dot Pitch	0.4 (W)x 0.4 (H)	mm
LCD Type	STN	
Driver Method	1/128 Duty , 1/ 13.6 Bias	
Viewing Direction	6 O'clock	
Controller IC	-	

## Example of Power Supply



## Absolute Maximum Ratings

ITEM	Symbol	MIN.	TYP.	MAX.	Unit
Operating Temperature	$T_{op}$	-10	-	+60	°C
Storage Temperature	$T_{ST}$	-20	-	+70	°C
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	-	25.0	V

## Electrical Characteristics

ITEM	Symbol	Condition	MIN.	TYP.	MAX.	Unit
Supply Voltage For Logic	$V_{DD}-V_{SS}$	$T_a=25\text{ }^\circ\text{C}$	-	5.0	5.5	V
Supply Voltage For LCD	$V_{DD}-V_{EE} (V_{OP})$		15.0	21.0	25.0	V
Input High Voltage			$0.8 V_{DD}$	-	$V_{DD}$	V
Input Low Voltage			0	-	$0.2 V_{DD}$	V
Output High Voltage		$I_{OH}=-0.5\text{mA}$	$0.8 V_{DD}$	-	$V_{DD}$	V
Output Low Voltage			0	-	$0.2 V_{DD}$	V

## Pin Assignment

Pin Assignment				Value			Unit
Pin	Symbol	Level	Function	MIN.	TYP.	MAX.	
1	FLM	H/L	Frame PULSE				
2	M	H/L	ALTERNATE SIGNAL FOR LCD DRIVE				
3	LP	H/L	LATCH PULSE				
4	XSCL	H/L	X-DRIVER DATA SHFT CLOCK				
5	YDIS	H/L	POWER-DOWN SIGNAL WHEN DISPLAY IS BLANKED				
6	XD0	H/L	X-DRIVER DATA 0				
7	XD1	H/L	X-DRIVER DATA 1				
8	XD2	H/L	X-DRIVER DATA 2				
9	XD3	H/L	X-DRIVER DATA 3				
10	Vdd	5V	POWER SUPPLY FOR LOGIC	-	5	-	V
11	GND	0V	POWER SUPPLY (OV GND)		0		V
12	Vee	-18V	NEGATIVE VOLTAGE I/O & LED(K)		-18		V
13	V0	-15~ -18	CONTRAST ADJUST VOLTAGE		-16		V
14	GND	0V	POWER SUPPLY (0V GND)		0		V