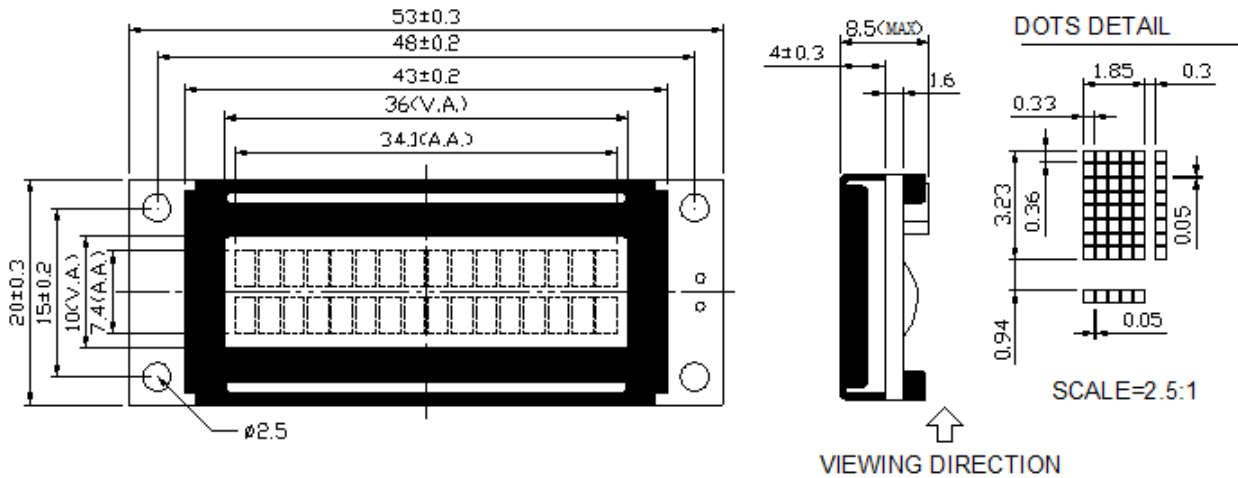




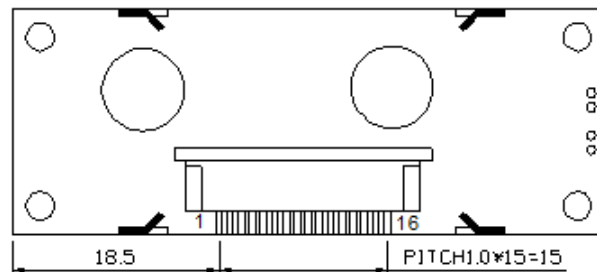
## Basic Character LCD Drawing

Part Number: FDS16x2(48x15)LBC



### Features:

1. 5x8 Dots with cursor
2. Built-in controller (SPLC780D or Equivalent)
3. +5V power supply
4. 4-bit or 8-bit MPU interfaces
5. BKL to be driven by pin 15, pin 16, or A, K



### Mechanical Data

ITEM	STANDARD	UNIT
MODULE DIMENSION	53.0 x 20.0	mm
VIEWING AREA	36.0 x 10.0	mm
DOT SIZE	0.33 x 0.36	mm
CHARACTER SIZE	1.85 x 3.23	mm



### Interface Pin Connections

NO	SYMBOL	LEVEL	FUNCTION
1	V <sub>SS</sub>	Power Supply	Signal Ground for LCM
2	V <sub>DD</sub>		Power supply for logic for LCM
3	V <sub>O</sub>		Contrast Adjust
4	RS	MPU	Register Select signal
5	R/W	MPU	Read/Write Select signal
6	E	MPU	Operation (data read/write) enable signal
7~10	DB <sub>0</sub> ~DB <sub>3</sub>	MPU	Four High Order bi-directional three-state data bus lines. Used for data transfer between the MPU and the LCM. These four are not used during 4-bit operation.
11~14	DB <sub>4</sub> ~DB <sub>7</sub>	MPU	Four High Order bi-directional three-state data bus lines. Used for data transfer between the MPU.
15	LED+	LED BKL power supply	Power for Backlight
16	LED-		

### Absolute Maximum Rating

ITEM	SYMBOL	MIN	TYP	MAX	UNIT
Power Voltage	V <sub>DD</sub> -V <sub>SS</sub>	0	--	7.0	V
Input Voltage	V <sub>IN</sub>	V <sub>SS</sub>	--	V <sub>DD</sub>	
Operating Temperature Range	V <sub>OP</sub>	-20	--	+70	°C
Storage Temperature Range	V <sub>ST</sub>	-30	--	+80	

### Electrical Characteristics

ITEM	SYM	CONDITION	MIN	TYP	MAX	UNIT
Supply Voltage for LCD	V <sub>DD</sub> -V <sub>O</sub>	T <sub>a</sub> =25°C	--	4.5	--	V
Input Voltage	V <sub>DD</sub>		4.7	5.0	5.5	
Supply Current	I <sub>DD</sub>	T <sub>a</sub> =25°C, V <sub>DD</sub> =5.0V	--	1.5	2.0	mA
Input Leakage Current	I <sub>LKG</sub>		--	--	1.0	uA
"H" Level Input Voltage	V <sub>IH</sub>		2.2	--	V <sub>DD</sub>	V
"L" Level Input Voltage	V <sub>IL</sub>	Twice Initial Value or Less	0	--	0.6	
"H" Level Output Voltage	V <sub>OH</sub>	LOH= -0.25mA	2.4	--	--	
"L" Level Output Voltage	V <sub>OL</sub>	LOH= 1.6mA	--	--	0.4	
Backlight supply voltage	V <sub>F</sub>		3.8	--	4.2	
Backlight supply current	I <sub>LED</sub>	T <sub>a</sub> =25°C, V=4.2V	30	--	40	