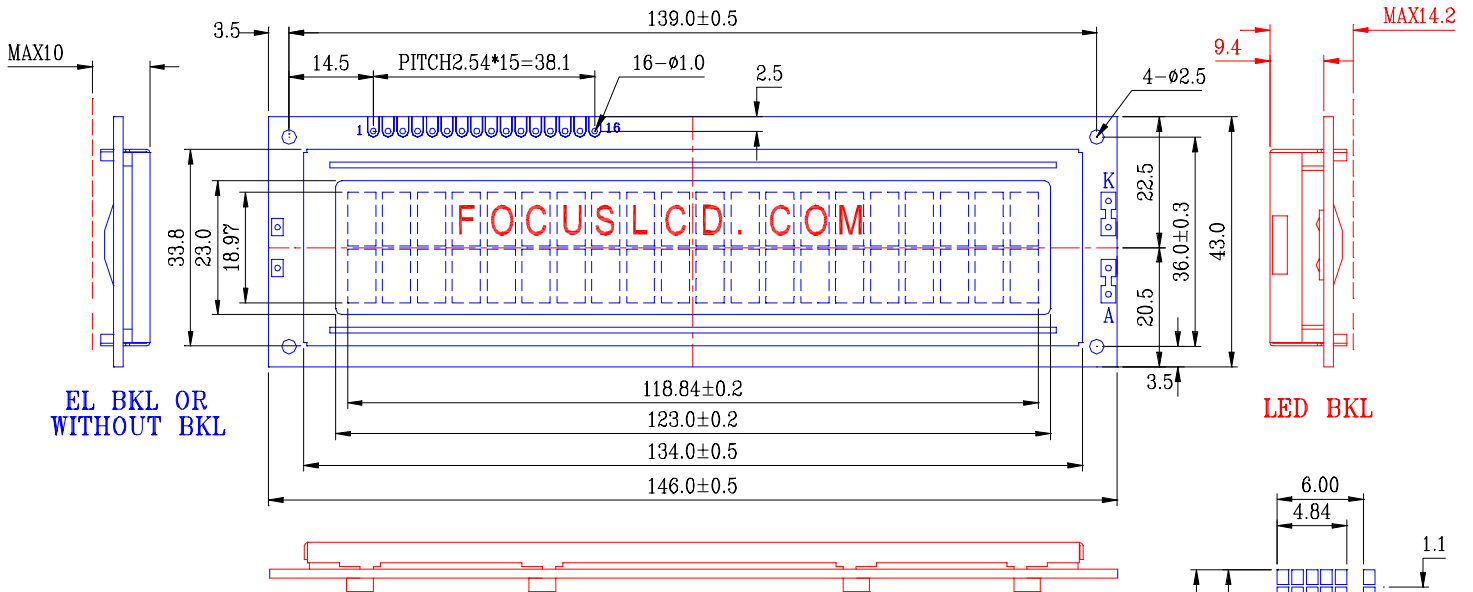


# FOCUS DISPLAY SOLUTIONS

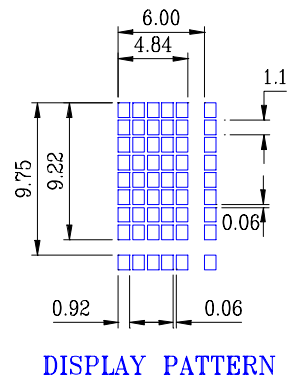
[WWW.FOCUSLCD.COM](http://WWW.FOCUSLCD.COM)

FDS20x2(139x36)XBC



PERFORMANCE FEATURES	
LC FLUID:	TN, STN(GRAY,YELLOW)
POLARIZER:	REFLECTIVE, TRANSFLECTIVE TRANSMISSIVE
BACKLIGHT:	YELLOW-GREEN
TEMPERATURE RANGE:	STANDARD, WIDE

PIN	SIGNAL	PIN	SIGNAL
1	VSS	9	DB2
2	VDD	10	DB3
3	V0	11	DB4
4	RS	12	DB5
5	R/W	13	DB6
6	E	14	DB7
7	DB0	15	A(+)
8	DB1	16	K(-)



## Feature:

- 5x8 Dots with cursor
- Built-In controller (KS0066U or Equivalent)
- +5V power supply (also available for + 3.0V)
- 1/16 duty cycle
- BKL to be driven by pin1, pin2, or pin15, pin16, or A,K
- N.V. Optional

**Interface Pin Connections**

NO	SYM	LEVEL	FUNCTION	NO	SYM	LEVEL	FUNCTION
1	V <sub>SS</sub>	-	GND	9	DB <sub>2</sub>	H/L	DATA BIT 2
2	V <sub>DD</sub>	-	5V	10	DB <sub>3</sub>	H/L	DATA BIT 3
3	V <sub>O</sub>	-	CONTRAST ADJUSTMENT	11	DB <sub>4</sub>	H/L	DATA BIT 4
4	RS	H/L	REGISTER SELECT	12	DB <sub>5</sub>	H/L	DATA BIT 5
5	R/W	H/L	READ/WRITE	13	DB <sub>6</sub>	H/L	DATA BIT 6
6	E	H/L	ENABLE SIGNAL	14	DB <sub>7</sub>	H/L	DATA BIT 7
7	DB <sub>0</sub>	H/L	DATA BIT0	15	A(+)	4.2V	BACKLIGHT
8	DB <sub>1</sub>	H/L	DATA BIT1	16	K(-)	0V	BACKLIGHT

**Absolute Maximum Rating**

ITEM	SYMBOL	MIN	TYP	MAX	UNIT
POWER SUPPLY	V <sub>DD</sub> -V <sub>SS</sub>	-0.3	---	5.5	V
INPUT VOLTAGE	V <sub>I</sub>	-0.3	---	V <sub>DD</sub>	

**Electrical Characteristics**

ITEM	SYM	CONDITION	MIN	TYP	MAX	UNIT
INPUT VOLTAGE	V <sub>DD</sub>	+ 5V	4.7	5.0	5.5	V
		+3.3V	2.7	3.0	5.3	V
SUPPLY CURRENT	I <sub>DD</sub>	V <sub>DD</sub> = 5V	--	2.5	4	mA
RECOMMENDED LCD DRIVING VOLTAGE FOR NORMAL TEMPERATURE VERSION MODULE	V <sub>DD</sub> -V <sub>O</sub>	-20 C	----	---	---	V
		0 C	4.7	5.0	5.5	
		25 C	4.3	4.5	4.7	
		50 C	4.1	4.3	4.5	
		70 C	---	---	---	
LED FORWARD VOLTAGE	V <sub>F</sub>	25 C	----	4.2	4.6	V
LED FORWARD CURRENT	I <sub>F</sub>	25 C	---	300	---	mA
EL POWER SUPPLY CURRENT	I <sub>EL</sub>	V <sub>EL</sub> = 110V AC 400Hz	---	---	---	mA

**Mechanical Data**

ITEM	STANDARD	UNIT
MODULE DIMENSION	146.0 X 43.0	mm
VIEWING AREA	123.0 X 23.0	mm
DOT SIZE	0.92 X 1.10	mm
CHARACTER SIZE	4.84 X 9.22	mm

**DISPLAY CHARACTER ADDRESS CODE:**

Display position	1	2	3			18	19	20
DDRAM address	00	01	02	--	--	11	12	13H
DDRAM address	40	41	42	--	--	51	52	53H