

Part number System

N	C	1602	A	-	Y	H	Y	-	PS	SPECIAL CODE
1	2	3	4		5	6	7		8	9

1. BRAND NAME

N	NEWTEC DISPLAY CO., LTD.
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2. DISPLAY TYPE

B	Graphic	P	PLED
C	Character	R	CSTN
F	TFT	S	Seven-segment
L	OLED	T	TAB
O	COG		

3. NUMBER OF PIXELS

Character Module	Characters per line × Lines
Graphic Module	Row Dots × Column Dots

4. SERIAL NUMBER

A~Z	Module Serial Number
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5. LCD MODE

	TN	STN	FSTN	CSTN	TFT
Positive	T	G Gary Y Y/G	F	R	C
Negative	N	B Blue	M		

6. LCD POLARIZER

	Normal temperature		Wide temperature	
	6H	12H	6H	12H
Reflective	A	D	G	J
Transflective	B	E	H	K
Transmissive	C	F	I	L

7. BACKLIGHT

NONE	N	No Backlight
EL	U	Blue Green
	H	White
LED	A	Amber
	B	Blue
	E	Yellow/Green Edge

	G	Green
	R	Red
	W	White
	Y	Yellow/Green Array
CCFL	C	White

8.IC FONT (Character Module)

Cyrillic/English	TS
Chinese/English	CB (BIG 5) ,SB (GB), CS (BIG5 + GB + Others)
Japanese/English	PN, PS, PM
European/English	RN, RS, MS, MM

9.SPECIAL CODE

A	Anti-glare
X	Without Negative Voltage Output
N	With Negative Voltage output
M	Negative Voltage + Temperature Compensation
H	Touch panel
B	Positive Voltage (TAB)
W	Without Positive Voltage (TAB and PLED only)
T	Super Wide Temperature
00~99	For Customized Design Version Code

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Character Module

Resolution	Module Series	Module Dimension (mm)	View Area (mm)	Character Size	Backlight			LCD		
					EL	LED		STN GRAY	STN Y/G	Y/G ARRAY
						Y/G	EDGE			
8 × 2	NC0802A	58.0 × 32.0	38.0 × 16.0	2.96 × 5.56			▲	▲	▲	▲
12 × 2	NC1202A	55.7 × 32.0	46.0 × 14.5	2.65 × 5.50		▲		▲	▲	▲
16 × 1	NC1601A	80.0 × 36.0	66.0 × 16.0	3.07 × 6.56		▲	▲	▲	▲	▲
	NC1601B	85.0 × 28.0	66.0 × 16.0	3.07 × 6.56		▲	▲	▲	▲	▲
	NC1601L	122.0 × 33.0	99.0 × 13.0	4.84 × 8.06			▲	▲	▲	▲
16 × 2	NC1602A	84.0 × 44.0	66.0 × 16.0	2.95 × 5.55	▲	▲	▲	▲	▲	▲
	NC1602B	80.0 × 36.0	66.0 × 16.0	2.95 × 5.55	▲	▲	▲	▲	▲	▲
	NC1602C	85.0 × 36.0	66.0 × 16.0	2.95 × 5.55	▲	▲	▲	▲	▲	▲
	NC1602D	85.0 × 30.0	66.0 × 16.0	2.95 × 5.55	▲	▲	▲	▲	▲	▲
	NC1602E	85.0 × 25.2	66.0 × 16.0	2.95 × 5.55	▲	▲	▲	▲	▲	▲
	NC1602F	85.0 × 25.2	66.0 × 16.0	2.95 × 5.55	▲	▲	▲	▲	▲	▲
	NC1602H	59.0 × 32.6	56.3 × 19.4	2.45 × 4.67	▲	▲	▲	▲	▲	▲
	NC1602L	122.0 × 44.0	99.0 × 24.0	4.84 × 9.66			▲	▲	▲	▲
16 × 4	NC1604A	87.0 × 60.0	62.0 × 26.0	2.95 × 4.75	▲		▲	▲	▲	▲
	NC1604B	70.6 × 60.0	60.0 × 32.6	2.96 × 5.56		▲		▲	▲	▲
	NC1604Z	83.0 × 54.7	60.0 × 32.6	2.95 × 4.75		▲		▲	▲	▲
20 × 2	NC2002A	116.0 × 37.0	85.0 × 18.6	3.20 × 5.55	▲	▲	▲	▲	▲	▲
	NC2002L	180.0 × 40.0	149.0 × 23.0	6.00 × 9.66	▲		▲	▲	▲	▲
20 × 4	NC2004A	98.0 × 60.0	77.0 × 25.2	2.95 × 4.75	▲		▲	▲	▲	▲
	NC2004B	77.0 × 47.0	60.0 × 22.0	2.30 × 4.03	▲		▲	▲	▲	▲
	NC2004C	77.0 × 47.0	60.0 × 22.0	2.30 × 4.03	▲		▲	▲	▲	▲
	NC2004L	146.0 × 62.5	123.5 × 43.0	4.84 × 9.22			▲	▲	▲	▲
24 × 2	NC2402A	118.0 × 36.0	94.5 × 16.0	3.20 × 5.55	▲	▲	▲	▲	▲	▲
40 × 2	NC4002A	182.0 × 33.5	154.4 × 16.5	3.20 × 5.55	▲		▲	▲	▲	▲
40 × 4	NC4004A	190.0 × 54.0	147.0 × 29.5	2.78 × 4.89	▲		▲	▲	▲	▲

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Graphic Module

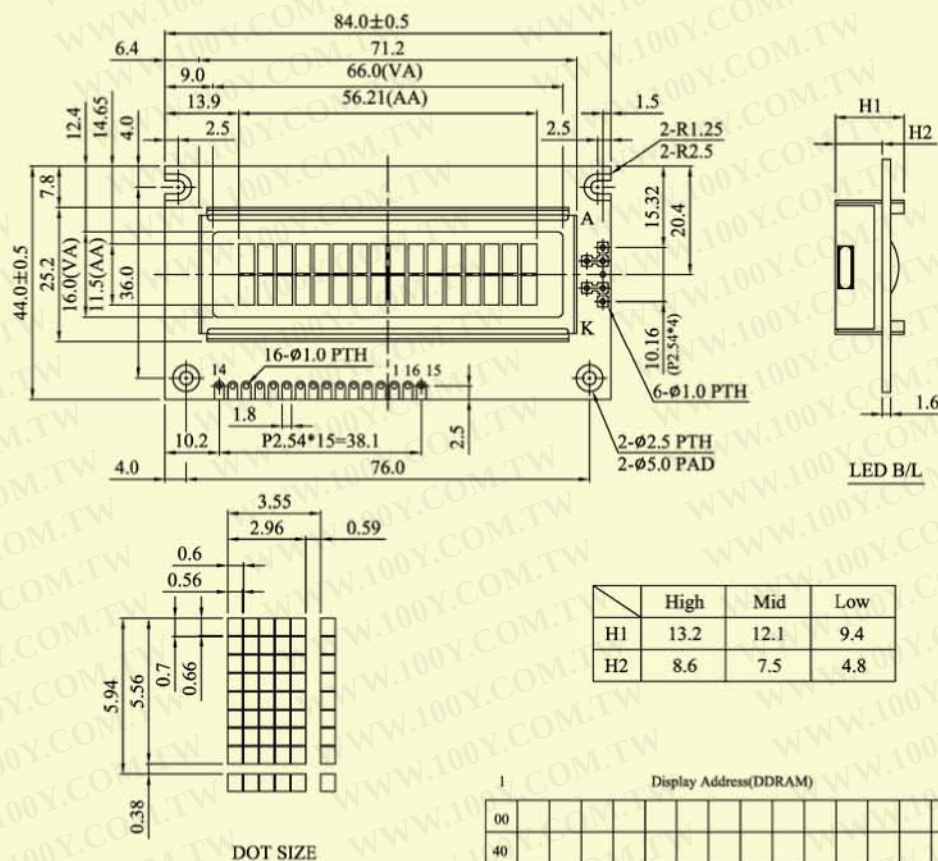
Resolution	Module Series	Module Dimension (mm)	View Area (mm)	Dot Size (mm)	Dot Pitch (mm)	Duty	Controller	Backlight				LCD				
								EL	CCFL	LED		STN GRAY	STN Y/G	STN BLUE	FSTN POS.	FSTN NEG.
										Y/G EDGE	Y/G ARRAY					
122 × 32	NB12232A	84.00 × 44.00	60.00 × 18.00	0.40 × 0.45	0.44 × 0.49	1/32	SED1520D0A	▲			▲	▲	▲			
	NB12232B	84.00 × 44.00	60.00 × 18.00	0.40 × 0.45	0.44 × 0.49	1/32	SED1520DAA				▲	▲	▲			
	NB12232C	80.00 × 36.00	60.00 × 18.00	0.40 × 0.45	0.44 × 0.49	1/32	SED1520D0A	▲			▲	▲	▲			
	NB12232D	80.00 × 36.00	60.00 × 18.00	0.40 × 0.45	0.44 × 0.49	1/32	SED1520DAA	▲			▲	▲	▲			
128 × 64	NB12864A	93.00 × 70.00	72.00 × 40.00	0.48 × 0.48	0.52 × 0.52	1/64	KS0108	▲			▲	▲	▲	▲	▲	
	NB12864B	75.00 × 52.70	60.00 × 32.60	0.40 × 0.40	0.43 × 0.43	1/64	KS0108	▲			▲	▲	▲	▲	▲	
	NB12864C	78.00 × 70.00	62.00 × 44.00	0.42 × 0.58	0.44 × 0.60	1/64	KS0108	▲			▲	▲	▲	▲	▲	▲
	NB12864D	78.00 × 70.00	62.00 × 44.00	0.42 × 0.58	0.44 × 0.60	1/64	T6963C	▲			▲	▲	▲	▲	▲	▲
	NB12864F	87.00 × 70.00	72.00 × 40.00	0.48 × 0.48	0.48 × 0.48	1/64	T6963C	▲			▲	▲	▲	▲		
	NB12864G	93.00 × 70.00	72.00 × 40.00	0.48 × 0.48	0.48 × 0.48	1/64	ST7920				▲	▲	▲	▲		
	NB12864H	98.00 × 60.00	72.00 × 40.00	0.48 × 0.48	0.48 × 0.48	1/64	ST7920				▲	▲	▲	▲		
	NB12864I	54.00 × 50.00	43.50 × 29.00	0.28 × 0.35	0.32 × 0.39	1/64	KS0108				▲	▲	▲	▲		
	NB12864N	83.00 × 54.70	60.00 × 32.60	0.39 × 0.39	0.43 × 0.43	1/64	ST7920				▲	▲	▲	▲		
	NB12864Y	102.0 × 70.00	72.00 × 40.00	0.48 × 0.48	0.52 × 0.52	1/64	KS0108				▲	▲	▲	▲		
144 × 32	NB14432A	85.0 × 36.00	66.00 × 16.00	0.38 × 0.38	0.42 × 0.42	1/64	ST7920				▲	▲	▲	▲		
	NB14432B	80.0 × 36.00	66.00 × 17.00	0.38 × 0.38	0.42 × 0.42	1/64	ST7920				▲	▲	▲	▲		
160 × 160	NT160160A	69.00 × 69.50	60.10 × 55.65	0.318 × 0.318	0.348 × 0.348	1/160	SID13700	▲							▲	▲
	NT160160B	69.00 × 69.50	60.10 × 55.65	0.318 × 0.318	0.348 × 0.348	1/160	NONE	▲							▲	▲
192 × 32	NB19232A	116.00 × 37.00	85.00 × 18.60	0.38 × 0.46	0.42 × 0.5	1/32	ST7920	▲		▲	▲	▲	▲	▲		
240 × 64	NB24064A	180.00 × 65.00	133.00 × 39.00	0.49 × 0.49	0.53 × 0.53	1/64	T6963C	▲	▲		▲	▲	▲	▲	▲	▲
	NB24064B	180.00 × 65.00	133.00 × 39.00	0.49 × 0.49	0.53 × 0.53	1/64	LC7981	▲	▲		▲	▲	▲	▲	▲	▲
	NB24064C	180.00 × 65.00	133.00 × 39.00	0.49 × 0.49	0.53 × 0.53	1/64	RA8802	▲	▲		▲	▲	▲	▲	▲	▲
240 × 128	NB240128A	170.00 × 103.50	132.00 × 76.00	0.47 × 0.47	0.50 × 0.50	1/128	T6963C	▲	▲		▲	▲	▲	▲	▲	▲
	NB240128B	144.00 × 104.00	114.00 × 64.00	0.40 × 0.40	0.45 × 0.45	1/128	T6963C	▲	▲		▲	▲	▲	▲	▲	▲

	NB240128C	144.00 × 104.00	114.00 × 64.00	0.40 × 0.40	0.45 × 0.45	1/128	NONE	▲	▲		▲	▲	▲	▲	▲	▲
	NB240128D	144.00 × 104.00	114.00 × 64.00	0.40 × 0.40	0.45 × 0.45	1/128	LC7981	▲	▲		▲	▲	▲	▲	▲	▲
320 × 240	NB320240A	166.80 × 109.00	122.00 × 92.00	0.34 × 0.34	0.36 × 0.36	1/240	NONE	▲	▲	▲			▲	▲	▲	▲
	NB320240B	166.80 × 109.00	122.00 × 92.00	0.34 × 0.34	0.36 × 0.36	1/240	S1D13700	▲	▲	▲			▲	▲	▲	▲
	NB320240C	148.02 × 120.24	120.04 × 92.14	0.34 × 0.34	0.36 × 0.36	1/240	SED1335		▲	▲			▲	▲	▲	▲
	NB320240Y	148.02 × 120.24	120.04 × 92.14	0.34 × 0.34	0.36 × 0.36	1/240	S1D13700		▲	▲			▲	▲	▲	▲
	NB320240Z	166.80 × 109.00	122.00 × 92.00	0.34 × 0.34	0.36 × 0.36	1/240	SED1335	▲	▲	▲			▲	▲	▲	▲
	NT320240A	95.90 × 70.40	79.80 × 60.60	0.225 × 0.225	0.24 × 0.24	1/240	S1D13700	▲							▲	
	NT320240B	95.90 × 70.40	79.80 × 60.60	0.225 × 0.225	0.24 × 0.24	1/240	NONE	▲							▲	

CSTN (Color-STN)

Resolution	Module Series	Module Dimension (mm)	View Area (mm)	Dot Size (mm)	Dot Pitch (mm)	Duty	Controller	Backlight	LCD
320 × 240	NR320240A	154.6 × 114.8	118.8 × 89.38	0.09 × 0.33	0.12 × 0.36	1/240	NONE	CCFL	COLOR STN
	NR320240B	106.0 × 72.0	79.785 × 60.585	0.225 × 0.225	0.24 × 0.24	1/240	NONE	LED	COLOR STN

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Features

- 5x8 dots with cursor
- Built-in controller KS0066 or equivalent
- +5V power supply
- 1/16 duty cycle
- LED B/L pins: A/K, 1/2, or 15/16
- Backlight: LED, EL

Optional

- +3V power supply
- Negative voltage

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PIN ASSIGNMENT

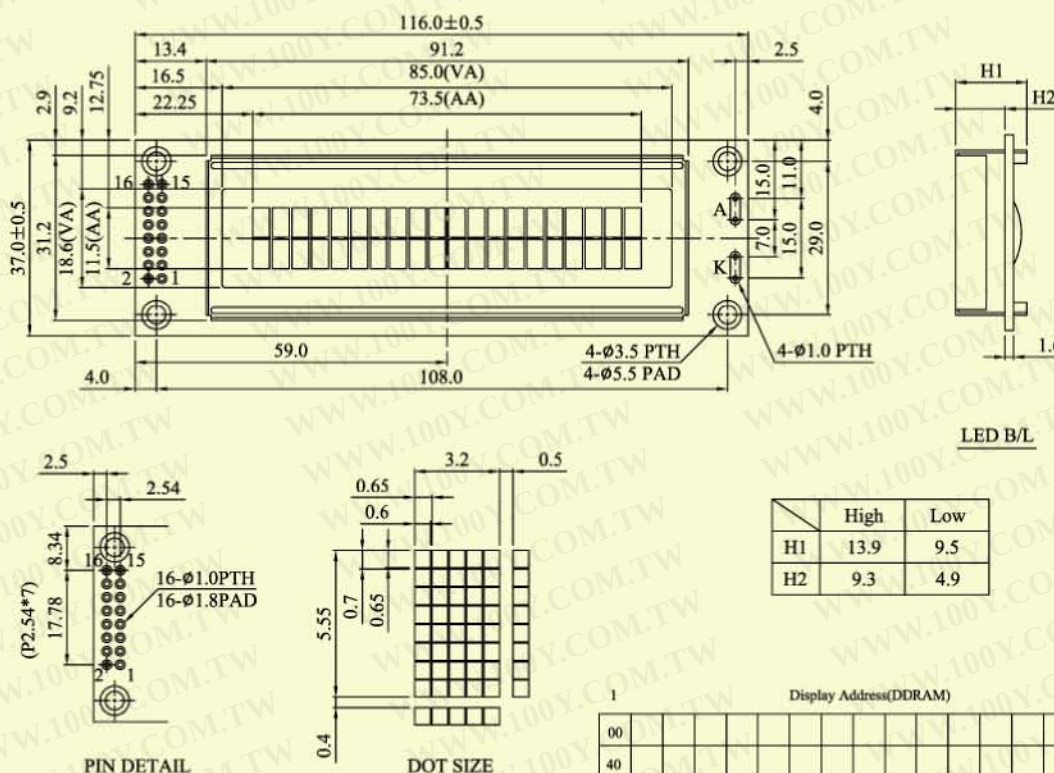
PIN	SYMBOL	FUNCTION
1	Vss	GND
2	Vdd	+ 5V(+3V option)
3	Vo	Contrast Adjustment
4	RS	H: Data L: Instruction
5	R/W	H/L read/write signal
6	E	H→ L enable signal
7-14	DB0~7	Data bus line
15	A/Vee	Power supply for B/L (+) Negative voltage output
16	K	Power supply for B/L (+)

MECHANICAL DATA

ITEM	STANDARD VALUE	UNIT
Module Dimension	84.0 x 44.0	mm
Viewing Area	66.0 x 16.0	mm
Active Area	59.21 x 11.50	mm
Dot Size	0.56 x 0.66	mm
Character Size	2.96 x 5.56	mm

ELECTRONIC CHARACTERISTICS

ITEM	SYMBOL	CONDITION	TYPICAL VALUE	UNIT
Input Voltage	Vdd	25°C	5.0	V
Supply Current	Idd	Vdd=+5V	1.2	mA
LCD Driving Voltage	Vdd-Vo	25°C	4.0	V
LED Forward Voltage	Vf	25°C	4.2	V
LED Forward Current(edge)	If	25°C	20	mA
LED Forward Current(array)	If	25°C	100	mA
EL Power Supply	Vel	Vel= 110Vac/400Hz		Vrms



Features

- 5x8 dots with cursor
- Built-in controller KS0066 or equivalent
- +5V power supply
- 1/16 duty cycle
- LED B/L pins: A/K, 1/2, or 15/16
- Backlight: LED, EL

Optional

- +3V power supply
- Negative voltage

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PIN ASSIGNMENT

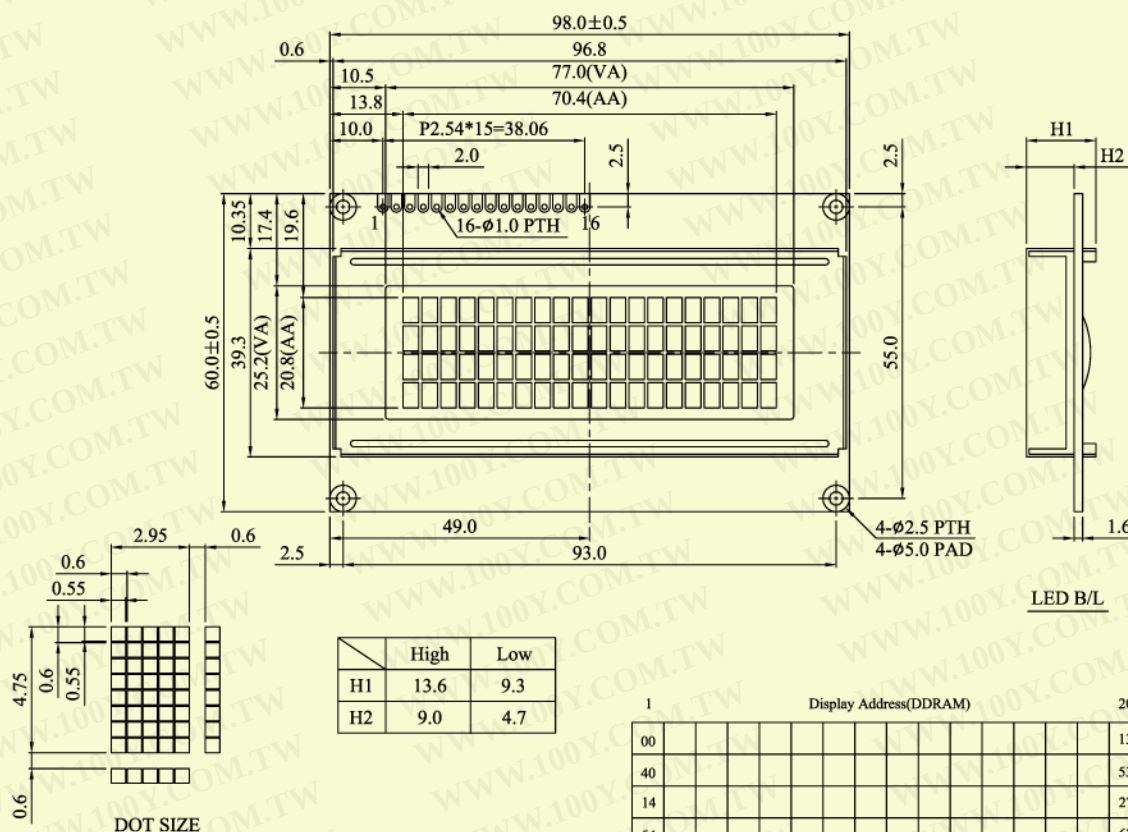
PIN	SYMBOL	FUNCTION
1	Vss	GND
2	Vdd	+ 5V(+3V option)
3	Vo	Contrast Adjustment
4	RS	H: Data L: Instruction
5	R/W	H/L read/write signal
6	E	H→ L enable signal
7-14	DB0~7	Data bus line
15	A/Vee	Power supply for B/L (+) Negative voltage output
16	K	Power supply for B/L (-)

MECHANICAL DATA

ITEM	STANDARD VALUE	UNIT
Module Dimension	116.0 x 37.0	mm
Viewing Area	85.0 x 18.6	mm
Active Area	73.5 x 11.5	mm
Dot Size	0.60 x 0.65	mm
Character Size	3.20 x 5.55	mm

ELECTRONIC CHARACTERISTICS

ITEM	SYMBOL	CONDITION	TYPICAL VALUE	UNIT
Input Voltage	Vdd	25°C	5.0	V
Supply Current	Idd	Vdd=+5V	1.5	mA
LCD Driving Voltage	Vdd-Vo	25°C	4.5	V
LED Forward Voltage	Vf	25°C	4.2	V
LED Forward Current(array)	If	25°C	210	mA
EL Power Supply	Vel	Vel= 110Vac/400Hz		Vrms



Features

- ▶ 5x8 dots with cursor
- ▶ Built-in controller KS0066 or equivalent
- ▶ +5V power supply
- ▶ 1/16 duty cycle
- ▶ LED B/L pins: A/K, 1/2, or 15/16
- ▶ Backlight: LED, EL

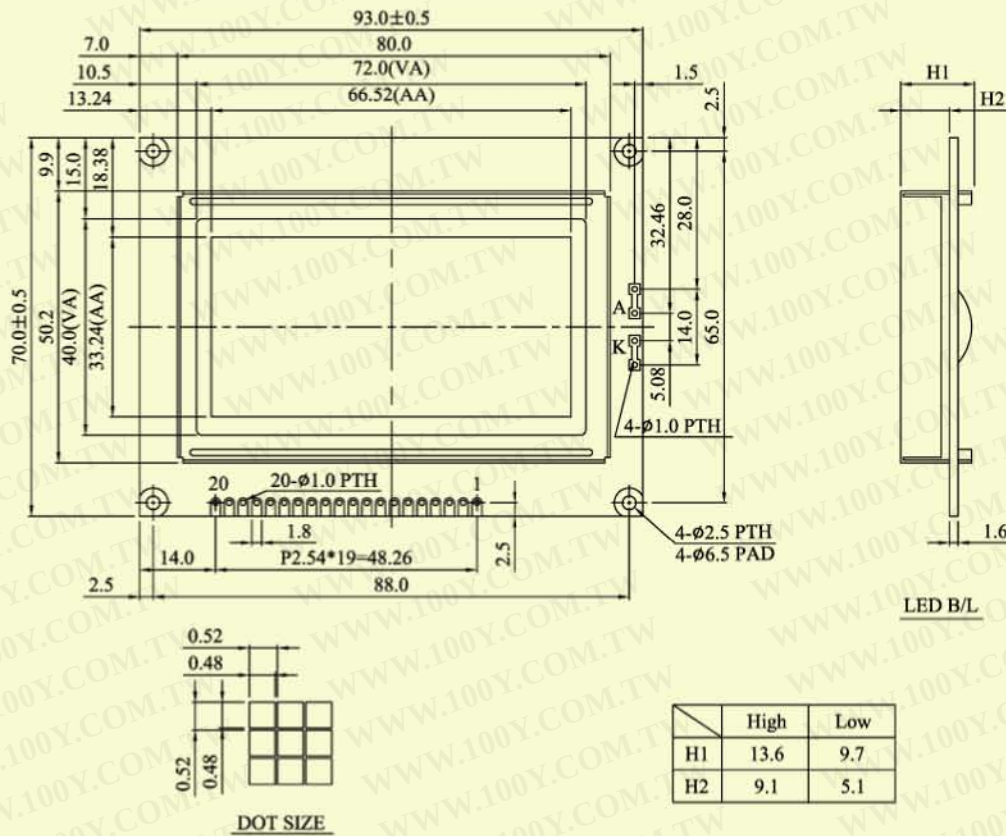
Optional

- +3V power supply
- Negative voltage

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PIN ASSIGNMENT		
PIN	SYMBOL	FUNCTION
1	Vss	GND
2	Vdd	+ 5V(+3V option)
3	Vo	Contrast Adjustment
4	RS	H: Data L: Instruction
5	R/ $\overline{W}$	H/L read/write signal
6	E	H $\rightarrow$ L enable signal
7-14	DB0~7	Data bus line
15	A/Vee	Power supply for B/L (+) Negative voltage output
16	K	Power supply for B/L (-)

MECHANICAL DATA				
ITEM	STANDARD VALUE			UNIT
Module Dimension	98.0 x 60.0			mm
Viewing Area	77.0 x 25.2			mm
Active Area	70.4 x 20.8			mm
Dot Size	0.55 x 0.55			mm
Character Size	2.95 x 4.75			mm
ELECTRONIC CHARACTERISTICS				
ITEM	SYMBOL	CONDITION	TYPICAL VALUE	UNIT
Input Voltage	Vdd	25℃	5.0	V
Supply Current	Idd	Vdd=+5V	1.7	mA
LCD Driving Voltage	Vdd-Vo	25℃	4.5	V
LED Forward Voltage	Vf	25℃	4.2	V
LED Forward Current(array)	If	25℃	280	mA
EL Power Supply	Vel	Vel= 110Vac/400Hz		Vrms



Features

- Built-in controller KS0108 or equivalent
- +5V power supply
- 1/64 duty cycle
- LED B/L pins: A/K, 1/2, or 19/20
- Backlight: LED, EL

Optional

- +3V power supply
- Negative voltage

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PIN ASSIGNMENT

PIN	SYMBOL	FUNCTION
1	Vss	Power supply GND
2	Vdd	Power supply + 5V
3	Vo	Contrast Adjustment
4	D/I	Data / Instruction
5	R/ $\overline{W}$	H/L read/write signal
6	E	H→L enable signal
7-14	DB0~7	Data bus line
15	$\overline{CS1}$	Chip select for IC1
16	$\overline{CS2}$	Chip select for IC2
17	$\overline{RST}$	Reset Signal
18	Vee	Negative voltage output
19	A	Power supply for B/L (+)
20	K	Power supply for B/L (-)

MECHANICAL DATA

ITEM	STANDARD VALUE	UNIT
Module Dimension	93.0 x 70.0	mm
Viewing Area	72.0 x 40.0	mm
Active Area	66.52 x 33.24	mm
Dot Size	0.48 x 0.48	mm
Dot Pitch	0.52 x 0.52	mm

ELECTRONIC CHARACTERISTICS

ITEM	SYMBOL	CONDITION	TYPICAL VALUE	UNIT
Input Voltage	Vdd	25°C	5.0	V
Supply Current	Idd	Vdd=+5V	10.0	mA
LCD Driving Voltage	Vdd-Vo	25°C	9.1	V
LED Forward Voltage	Vf	25°C	4.2	V
LED Forward Current(array)	If	25°C	330	mA
LED Forward Current(white)	If	VLED = 3.2V	80	mA
EL Power Supply	Vel	Vel= 110Vac/400Hz		Vrms