Winstar Display Co., LTD
華凌光電股份有限公司
WEB: http://www.winstar.com.tw E-mail: sales@winstar.com.tw

SPECIFICATION

CUSTOMER : _____

MODULE NO.: WH2002M-TMI-ETV#

APPROVED BY: (FOR CUSTOMER USE ONLY)	PCB VERSION:	DATA:

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY

VERSION	DATE	REVISED PAGE NO.	SUMMARY
0	2013/11/19		First issue

Represented by:
FIRST Components s.r.l.
www.first-components.com
technical@first-components.com
+39 0332 1888005

3.General Specification

Item	Dimension	Unit
Number of Characters	20 characters x 2Lines	—
Module dimension	146.0 x 43.0 x 13.7 (MAX)	mm
View area	123.0 x 23.0	mm
Active area	118.84x 18.97	mm
Dot size	0.92 x 1.1	mm
Dot pitch	0.98 x 1.16	mm
Character size	4.84 x 9.22	mm
Character pitch	6.0 x 9.75	mm
LCD type	STN Negative, Blue Transmissive (In LCD production, It will occur slightly color difference. We can only guarantee the same color in the same batch.)	
Duty	1/16	
View direction	6 o'clock	
Backlight Type	LED, White	
IC	ST7066U	

4.Absolute Maximum Ratings

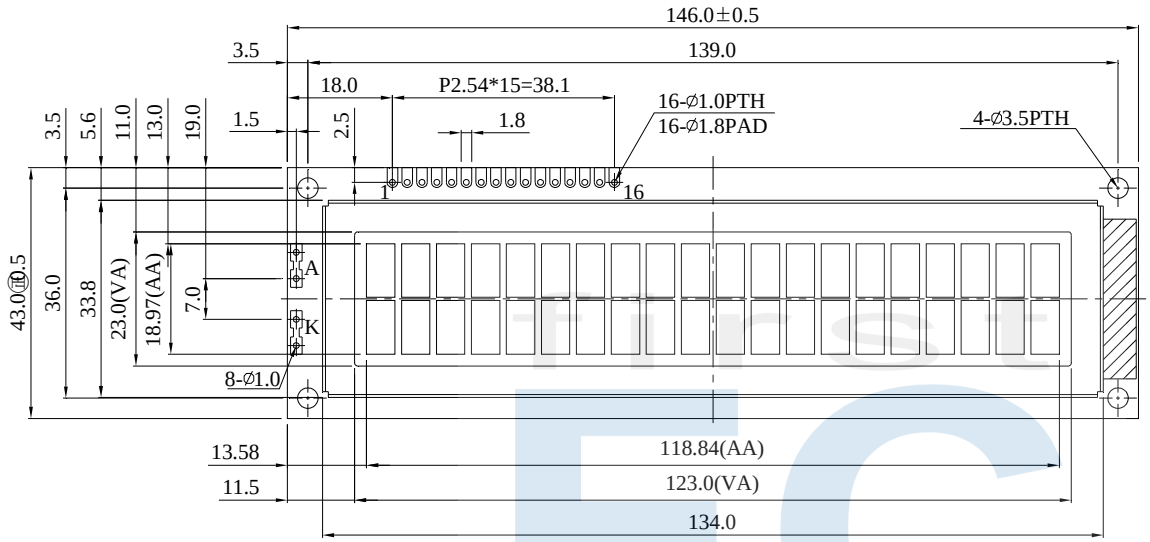
Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	T_{OP}	-20	—	+70	℃
Storage Temperature	T_{ST}	-30	—	+80	℃
Input Voltage	V_I	V_{SS}	—	V_{DD}	V
Supply Voltage For Logic	V_{DD}-V_{SS}	-0.3	—	7	V
Supply Voltage For LCD	V_{DD}-V_o	-0.3	—	13	V

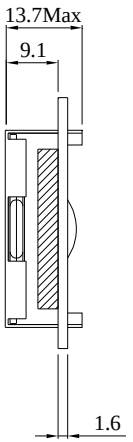
7.Interface Pin Function

Pin No.	Symbol	Level	Description
1	V_{SS}	0V	Ground
2	V_{DD}	3.3V	Supply Voltage for logic
3	VO	(Variable)	Contrast Adjustment
4	RS	H/L	H: DATA, L: Instruction code
5	R/W	H/L	H: Read(MPU→Module) L: Write(MPU→Module)
6	E	H,H→L	Chip enable signal
7	DB0	H/L	Data bus line
8	DB1	H/L	Data bus line
9	DB2	H/L	Data bus line
10	DB3	H/L	Data bus line
11	DB4	H/L	Data bus line
12	DB5	H/L	Data bus line
13	DB6	H/L	Data bus line
14	DB7	H/L	Data bus line
15	Vee	—	Negative Voltage Output
16	NC	—	No connection

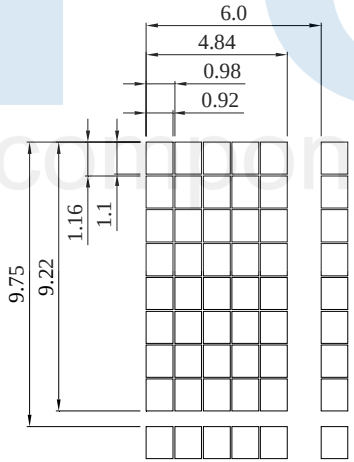
first components

8.Contour Drawing &Block Diagram





PIN NO.	SYMBOL
1	Vss
2	Vdd
3	Vo
4	RS
5	R/W
6	E
7	DB0
8	DB1
9	DB2
10	DB3
11	DB4
12	DB5
13	DB6
14	DB7
15	Vee
16	NC



DOT SIZE
SCALE 5/1