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

SPECIFICATION

CUSTOMER : _____

MODULE NO.: WF18-128160FD#001-FC

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

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
first FC components			葉虹蘭
ISSUED DATE: 2018/04/13			

3.General Specifications

Item	Dimension	Unit
Size	1.77	inch
Dot Matrix	128 x RGB x 160(TFT)	dots
Module dimension	34.6(W) x 46.5(H) x 3.78(D)	mm
Active area	28.03 x 35.04	mm
Dot pitch	0.073 x 0.219	mm
LCD type	TFT, Normally White, Transmissive	
View Direction	6 o'clock	
Gray Scale Inversion Direction	12 o'clock	
Aspect Ratio	Portrait	
IC	ST7735S	
Backlight Type	LED,Normally White	
With /Without TP	With RTP	
Surface	Anti-Glare	

*Color tone slight changed by temperature and driving voltage.

4.Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	TOP	-20	—	+70	℃
Storage Temperature	TST	-30	—	+80	℃

Note: Device is subject to be damaged permanently if stresses beyond those absolute maximum ratings listed above

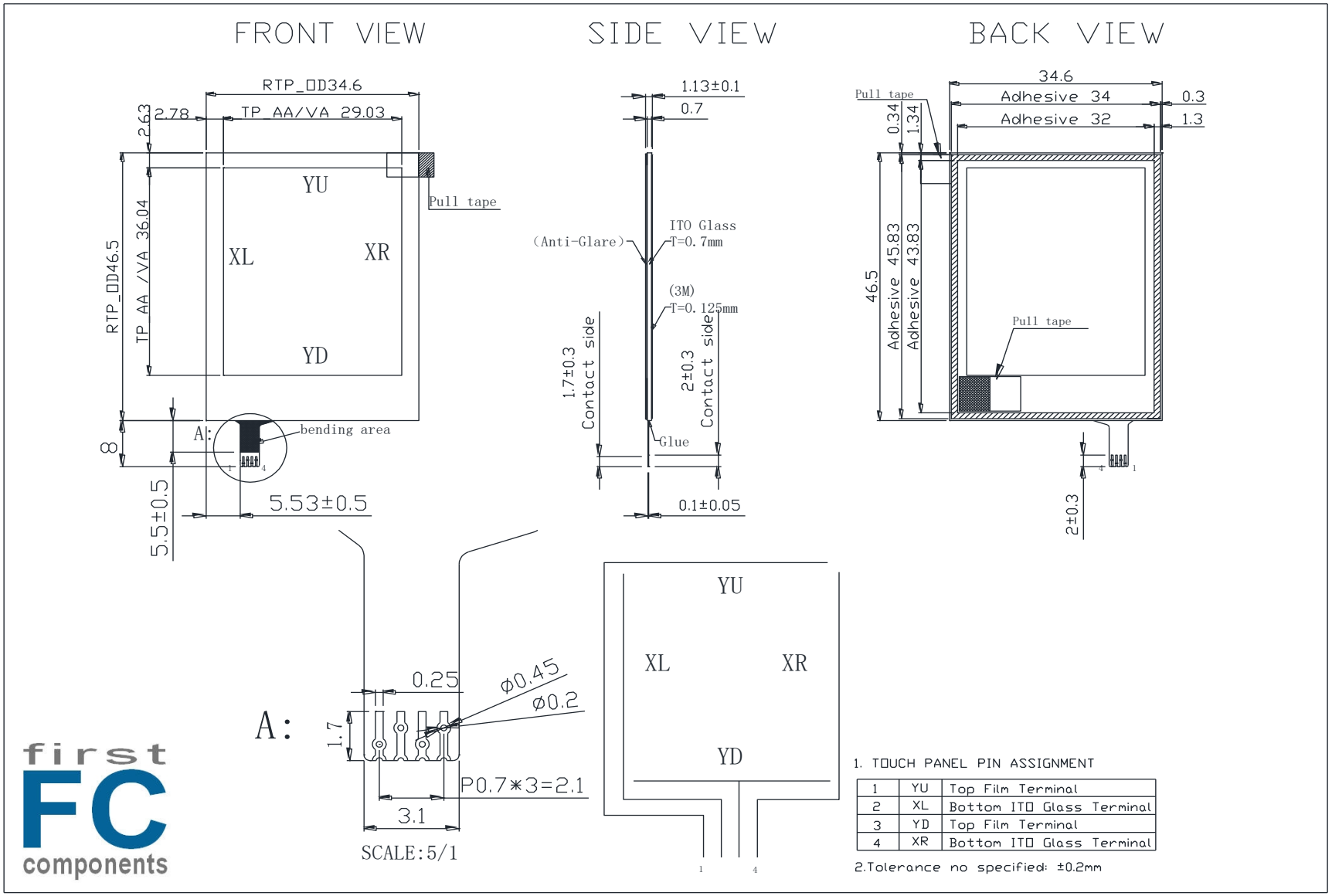
1. Temp. ≦60℃, 90% RH MAX. Temp.＞60℃, Absolute humidity shall be less than 90% RH at 60℃

8.Interface

8.1. LCM PIN Definition

<table>
<tr><th>Pin</th><th>Symbol</th><th>I/O</th><th>Function</th><th>Remark</th></tr>
<tr><td>1</td><td>VLED-</td><td>P</td><td>Back light cathode</td><td></td></tr>
<tr><td>2</td><td>VLED+</td><td>P</td><td>Back light anode</td><td></td></tr>
<tr><td>3</td><td>IM0</td><td rowspan="2">I</td><td rowspan="2">- MCU Parallel Interface Type Selection
-If Not Used, Please Fix this Pin at VDDI or DGND Level.
<table><tr><th>IM1</th><th>IM0</th><th>Parallel Interface</th></tr><tr><td>0</td><td>0</td><td>MCU 8-bit Parallel</td></tr><tr><td>0</td><td>1</td><td>MCU 16-bit Parallel</td></tr><tr><td>1</td><td>0</td><td>MCU 9-bit Parallel</td></tr><tr><td>1</td><td>1</td><td>MCU 18-bit Parallel</td></tr></table></td><td rowspan="2"></td></tr>
<tr><td>4</td><td>IM1</td></tr>
<tr><td>5</td><td>IM2</td><td>I</td><td>MCU Parallel Interface Bus and Serial Interface select
IM2=’1’, Parallel Interface ; IM2=’0’, Serial Interface</td><td></td></tr>
<tr><td>6</td><td>RESET</td><td>P</td><td>Reset signal</td><td></td></tr>
<tr><td>7-12</td><td>NC</td><td>-</td><td>No Connect</td><td></td></tr>
<tr><td>13-28</td><td>DB15-DB0
(SPI_SDA)</td><td>I/O</td><td>DB15:0] are used as MCU parallel interface data bus.
-DBis the serial input/output signal in serial interface mode.
-In serial interface, DB15:1] are not used and should be fixed at VDDI or DGND level.</td><td></td></tr>
<tr><td>29</td><td>NC</td><td>-</td><td>No Connect</td><td></td></tr>
<tr><td>30</td><td>RD</td><td>I</td><td>Read Enable in 8080 MCU Parallel Interface.
-If not used, please fix this pin at VDDI or DGND level.</td><td></td></tr>
<tr><td>31</td><td>WR</td><td>I</td><td>Serial clock
-Write Enable in MCU Parallel Interface.
-If not used, please fix this pin at VDDI or DGND level.</td><td></td></tr>
<tr><td>32</td><td>D/C
(SPI_SCL)</td><td>I</td><td>-Display data/command Selection Pin in MCU Interface.
-D/CX=’1’: Display Data or Parameter.
-D/CX=’0’: Command Data.
-In Serial Interface, this is used as SCL.
-If not used, please fix this pin at VDDI or DGND level.</td><td></td></tr>
<tr><td>33</td><td>CS(SPI_CS)</td><td>I</td><td>Chip enable</td><td></td></tr>
<tr><td>34</td><td>IOVCC</td><td>P</td><td>Interface Operation Voltage</td><td></td></tr>
<tr><td>35</td><td>VCI</td><td>P</td><td>Analog Supply Voltage</td><td></td></tr>
<tr><td>36</td><td>GND</td><td>P</td><td>Ground</td><td></td></tr>
<tr><td>37</td><td>YD</td><td>-</td><td>Bottom electrode</td><td></td></tr>
<tr><td>38</td><td>XR</td><td>-</td><td>Right electrode</td><td></td></tr>
<tr><td>39</td><td>YU</td><td>-</td><td>Top electrode</td><td></td></tr>
<tr><td>40</td><td>XL</td><td>-</td><td>Left electrode</td><td></td></tr>
</table>

10.Touch Panel Information

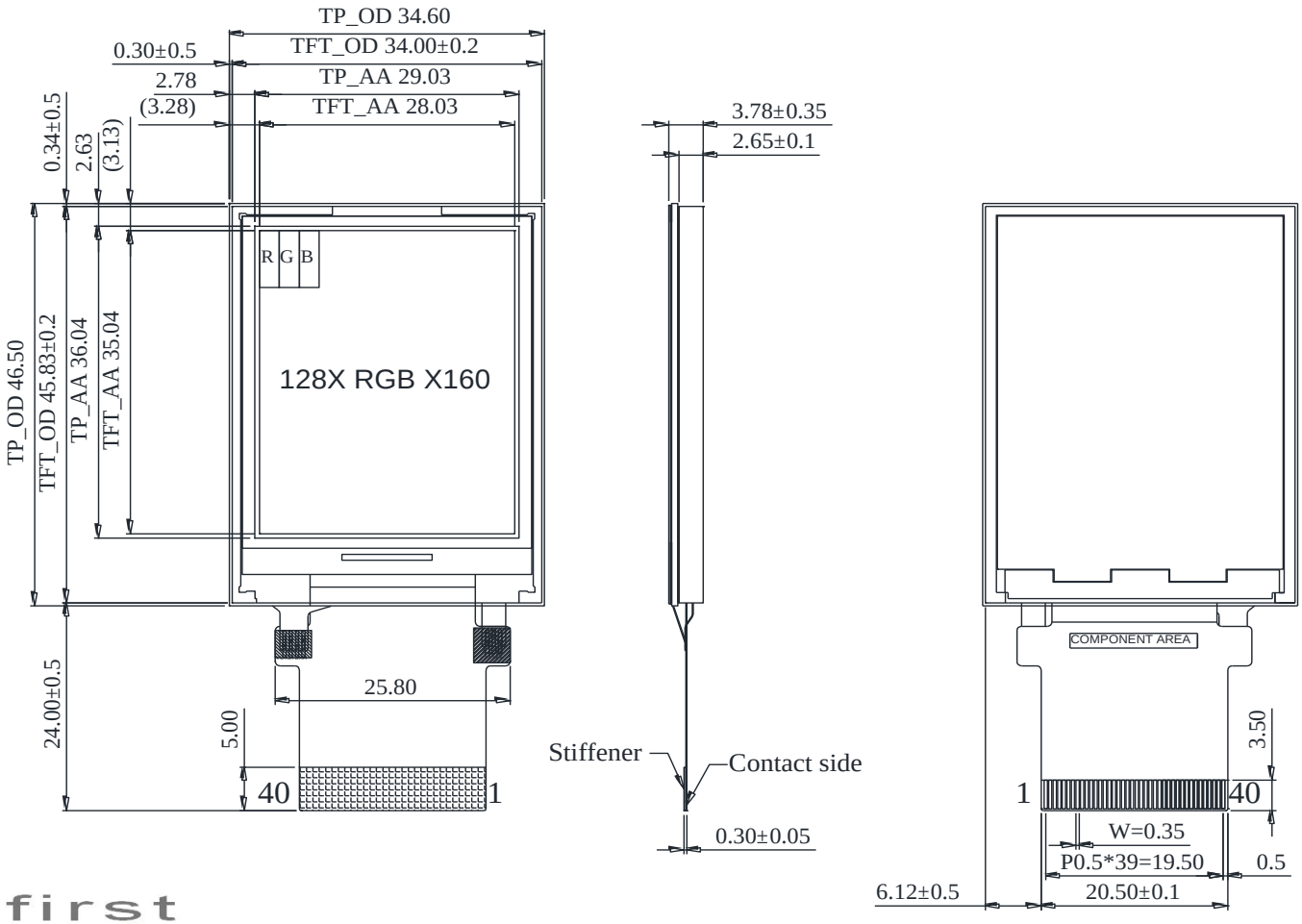


1. TOUCH PANEL PIN ASSIGNMENT

1	YU	Top Film Terminal
2	XL	Bottom ITO Glass Terminal
3	YD	Top Film Terminal
4	XR	Bottom ITO Glass Terminal

2.Tolerance no specified: ±0.2mm

11.Contour Drawing



PIN DESCRIPTION

NO.	SYMBOL
1	VLED-
2	VLED+
3	IM0
4	IM1
5	IM2
6	RESET
7	NC
8	NC
9	NC
10	NC
11	NC(DB17)
12	NC(DB16)
13-27	DB15-1
28	DB0(SPI_SDA)
29	NC
30	RD
31	WR
32	D/C(SPI_SCL)
33	CS(SPI_CS)
34	IOVCC
35	VCI
36	GND
37	YD
38	XR
39	YU
40	XL

IM2	IM1	IM0	MPU Interface	GRAM
1	0	1	8080 MCU 16-bit bus	D[15:0]
1	0	0	8080 MCU 8-bit bus	D[7:0]
0	–	–	3-Line SPI	(DO : SDA) (D/C :SCL) (SPI_CS)

The non-specified tolerance of dimension is ±0.3 mm .