

SPK ELECTRONICS CO., LTD.

TOUCH PANEL SPECIFICATION

Doc No	AS-P3008-02-01	Doc Rev : 1.0
Product	Model Name : SPK-TC104-P3008-02 Rev : 0 Size : 10.39"	Date Released : Jun.8, 2011
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1.0 Mechanical Dimensions and Construction

1.1 General: Projective capacitive touch panel is designed by Cover Lens(Glass)-Film-Film-Film construction

1.2 Mechanical Performance:

1.2.1 Surface Hardness: >Mohs 5

1.2.2 Cover Lens Thickness:1.1mm (Glass)

1.2.3 Overall Thickness: 1.70±0.20mm

1.2.4 Static force requires breaking the glass: >20kgf

1.2.5 Tail Type: FPC,Two Tail.

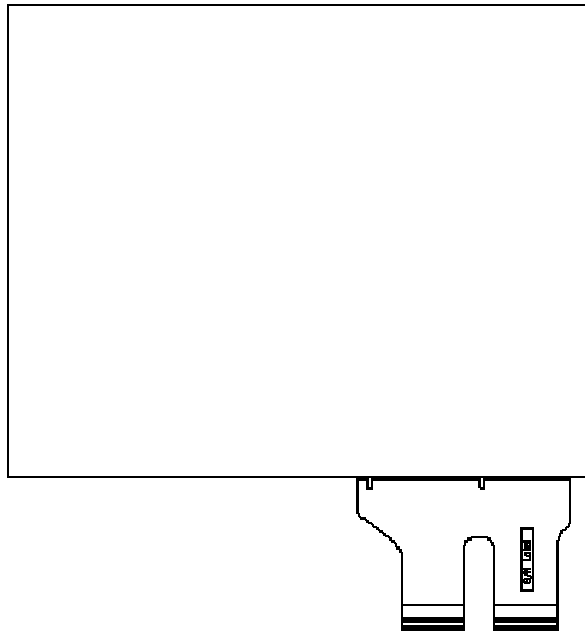
1.2.5.1 Bending radius: R1.0mm

1.2.5.2 Bending endurance:180deg for 10 times

1.2.5.3 Holding Force for Tail, Peeling upward 90deg with 500gw without impact to electric performance.

1.2.6 Top Surface Finish Type: Clear

Touch panel Front view:

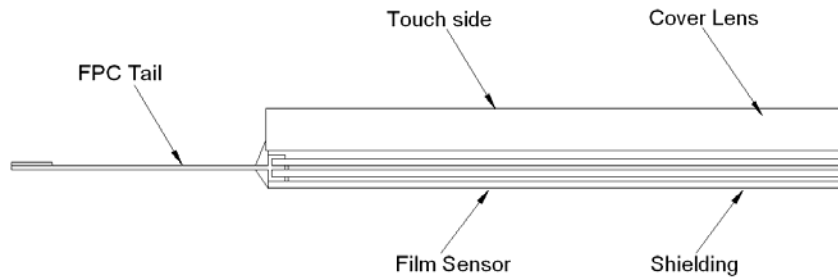


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Touch panel side view:



2.0 Typical Optical Characteristics

- 2.1 Visible Light Transmission: $87\pm 3\%$
- 2.2 Haze: $< 10\%$

3.0 Electrical Specifications

- 3.1 Positional Accuracy: X and Y axis is less than 1.5% of controller report position, (based on Penmount projected capacitive control Board)
- 3.2 Operating Voltage: 5V
- 3.3 Measurement Resolution: 1024 based on PM1300 control Board
- 3.4 Response Time: $< 20\text{ms}$
- 3.5 Activation Force: No minimum touch force requirement

4.0 Environmental Specifications

- 4.1 Operating Temperature: $-20^{\circ}\text{C} \sim +70^{\circ}\text{C}$
If temperature over 60°C , minimum 24 hours operating confirmed.
- 4.2 Storage Temperature: $-40^{\circ}\text{C} \sim +80^{\circ}\text{C}$
- 4.3 Humidity: limits to be at 90% RH at max 40°C
No dew condensation
- 4.4 Air pressure : 1080hPa \sim 660hPa

5.0 Reliability Test

- 5.1 Exposure to high temperature
Touch panel is put into a test machine at the condition of 80°C for 288 hours. Then it is left at room temperature for 24 hours or more. The measurement must satisfy the following:
 - Positional Accuracy: as Sec. 3.1
 - Response Time: as Sec. 3.4

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-Activation Force: as Sec. 3.5

5.2 Exposure to low temperature

Touch panel is put into a test machine at the condition of -40°C for 288 hours. Then it is left at room temperature for 24 hours or more. The measurement must satisfy the following:

-Positional Accuracy: as Sec. 3.1

-Response Time: as Sec. 3.4

-Activation Force: as Sec. 3.5

5.3 Exposure to constant temperature and humidity

Touch panel is put into a test machine at the condition of 60°C , 90%RH for 288 hours. Then it is left at room temperature for 24 hours or more. The measurement must satisfy the following:

-Positional Accuracy: as Sec. 3.1

-Response Time: as Sec. 3.4

-Activation Force: as Sec. 3.5

5.4 Thermal Shock

Touch panel is put into a test machine at the condition of -40°C for 30 minutes, and then 80°C for 30 minutes. The process is repeated by 20 cycles. Then it is left at room temperature for 24 hours or more. The measurement must satisfy the following:

-Positional Accuracy: as Sec. 3.1

-Response Time: as Sec. 3.4

-Activation Force: as Sec. 3.5

5.5 Vibration test

5.5.1 Vibration under Operation: Set frequency at 10~58Hz with 0.075mm amplitude and frequency at 58~500Hz with 1g amplitude; Test 10 cycles, test axis is +X, +Y, +Z axis; 1 octave / min.

5.5.2 Vibration under Storage: Set frequency at 5~9Hz with 3.5mm amplitude and frequency at 9~500Hz with 1g amplitude; Test 10 cycles, test axis is +X, +Y, +Z axis; 1 octave / min.

5.6 Shock test

5.6.1 Shock under Operation: The condition is set at 15g acceleration, half sine by 11ms shock. Test 3 cycles, test axis is +X, -X, +Y, -Y, +Z, -Z axis.

5.6.2 Shock under Storage: The condition is set at 25g acceleration, half sine by 6ms shock. Test 1000 cycles, test axis is +X, -X, +Y, -Y, +Z, -Z axis.

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6.0 Surface Chemical Resistance

Refer to AMT surface chemical resistance test method ASTD-001.

7.0 Optical Performance

7.1 Optical inspection method and optical defect standards refer to AMT document A003-1 updated version : "Touch Screen Optical Quality Standard."

7.2 Outside to Viewing Area: any optical defects in this area should be ignored if no touch panel function is affected.

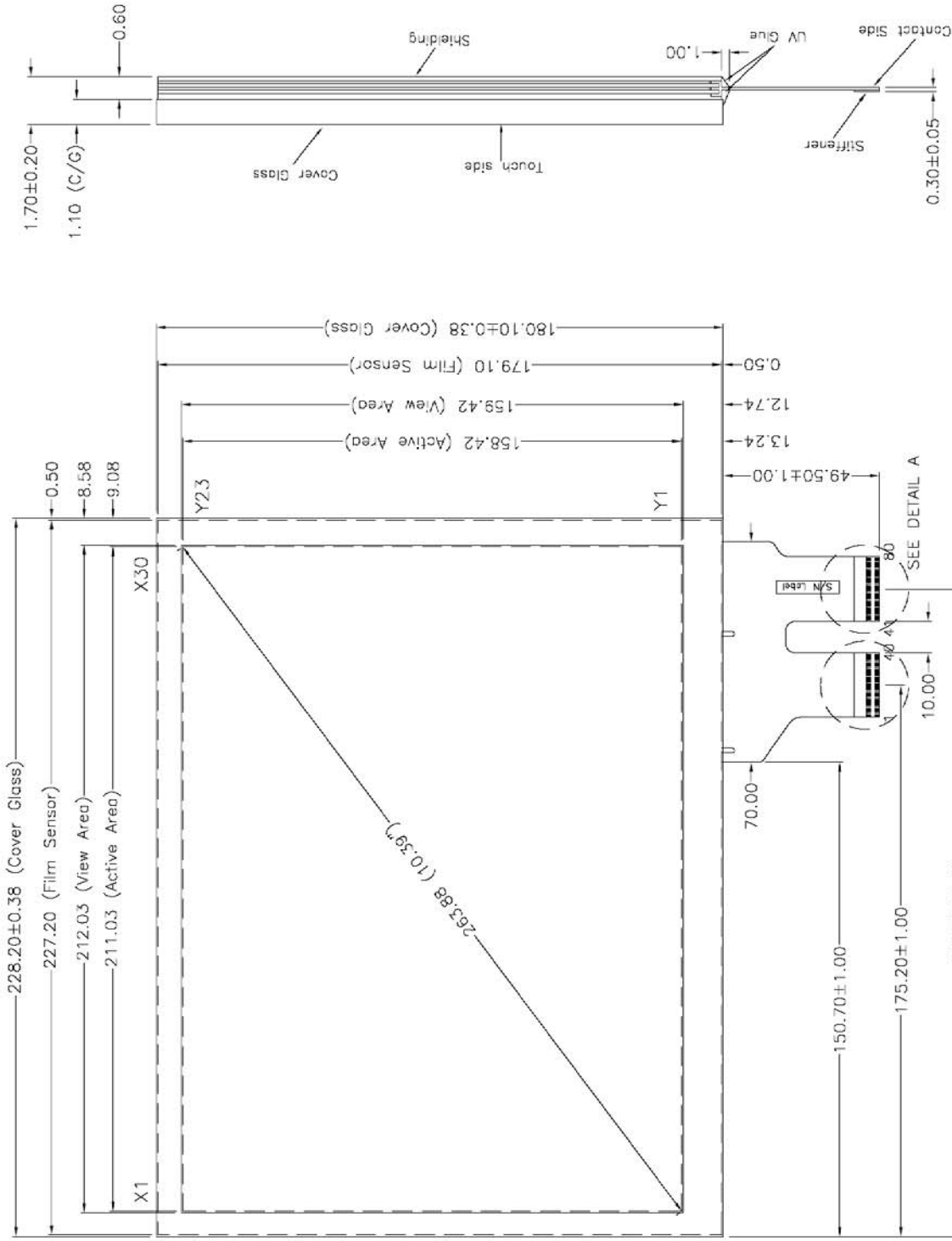
8.0 Others

8.1 Always store the touch panel in its original shipping container under normal conditions (Temperature 20~25° C; Humidity \leq 65%RH).

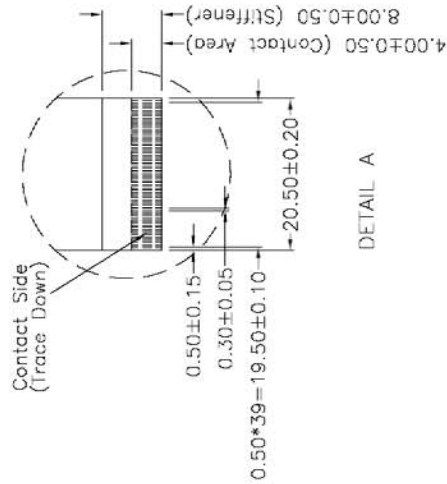
8.2 This Model is RoHS compliant.

8.3 Projected Capacitive Touch control board specification is in another attachment.

Touch Side View



CONNECTOR PINOUT	
PIN#	DESIGNATION
1	Shielding
2-3	Blank
4	Grounding Line
5	Blank
6	Grounding Line
7	Blank
8-37	X1-X30
38-39	Blank
40	Grounding Line
41-51	Blank
52	Grounding Line
53	Blank
54-76	Y1-Y23
77	Blank
78	Grounding Line
79	Blank
80	Grounding Line



NOTES:

1. INPUT MODE : PROJECTED CAPACITIVE
2. OVERALL THICKNESS : 1.70±0.20mm
3. COVER GLASS THICKNESS : 1.10mm
4. FRONT SURFACE : CLEAR TYPE
5. TAIL TYPE : GOLD PLATED FPC , ZIF
6. RECOMMENDED CONTROL BOARDS : PENMOUNT PM1300
7. OTHER SPEC : SEE APPROVAL SHEET



NO.	DATE	DESCRIPTION	CHK
REVISION			
CHIEF OF DESIGN		APPROVED	Jerry
ENGINEER		PROJECT MANAGER	
DRAWN BY	Andre	DATE	JUN 2, 2011
SHT	1	OF	1
		REV.	0

TOLERANCES UNLESS SPECIFIED	
.X	± 0.50
.XX	± 0.50
.XXX	± 0.50
ANGULAR	

P-3008-02
DWG NO : P3008-02-0-01
SCALE: N/S UNIT: mm