

# SPK ELECTRONICS CO., LTD.

TOUCH PANEL SPECIFICATION		
Doc No	AS-P3012-02-01	Doc Rev : 1.0
Product	Model Name : SPK-TC070-P3012-02 Rev : 0 Size : 7.03"	Date Released : Jun.10, 2011
Projective Capacitive Touch Panel Specification		Page.1 of 5

## 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.

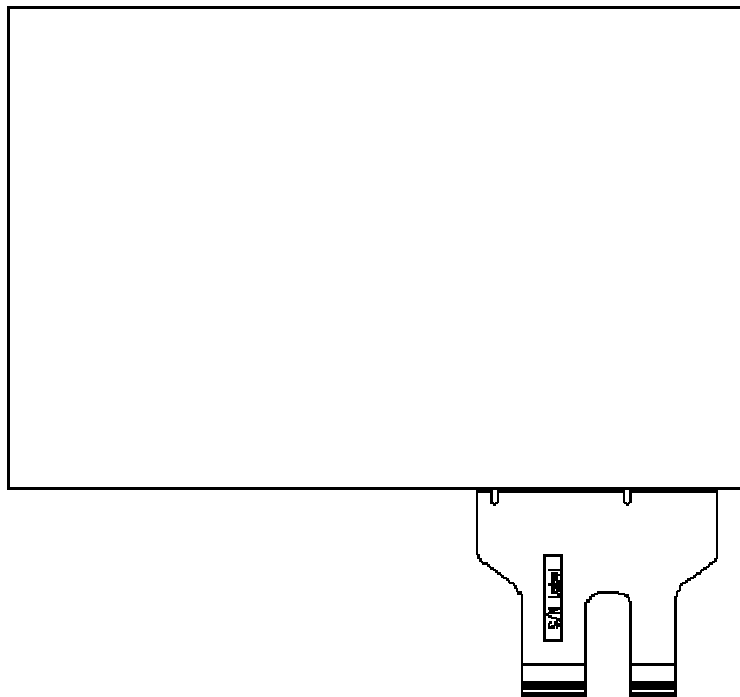
1.2.5.1 Bending radius: R1.0mm

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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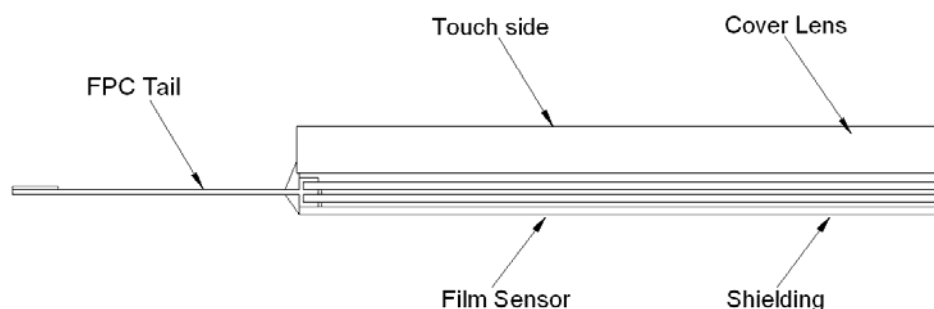
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Touch panel side view:



## 2.0 Typical Optical Characteristics

2.1 Visible Light Transmission:  $87 \pm 3\%$

2.2 Haze:  $< 1.0\%$

## 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 PM1201 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  $60^{\circ}\text{C}$ , 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  $40^{\circ}\text{C}$

No dew condensation

4.4 Air pressure : 1080hPa  $\sim$  660hPa

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## 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
- 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

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### 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.

## 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.

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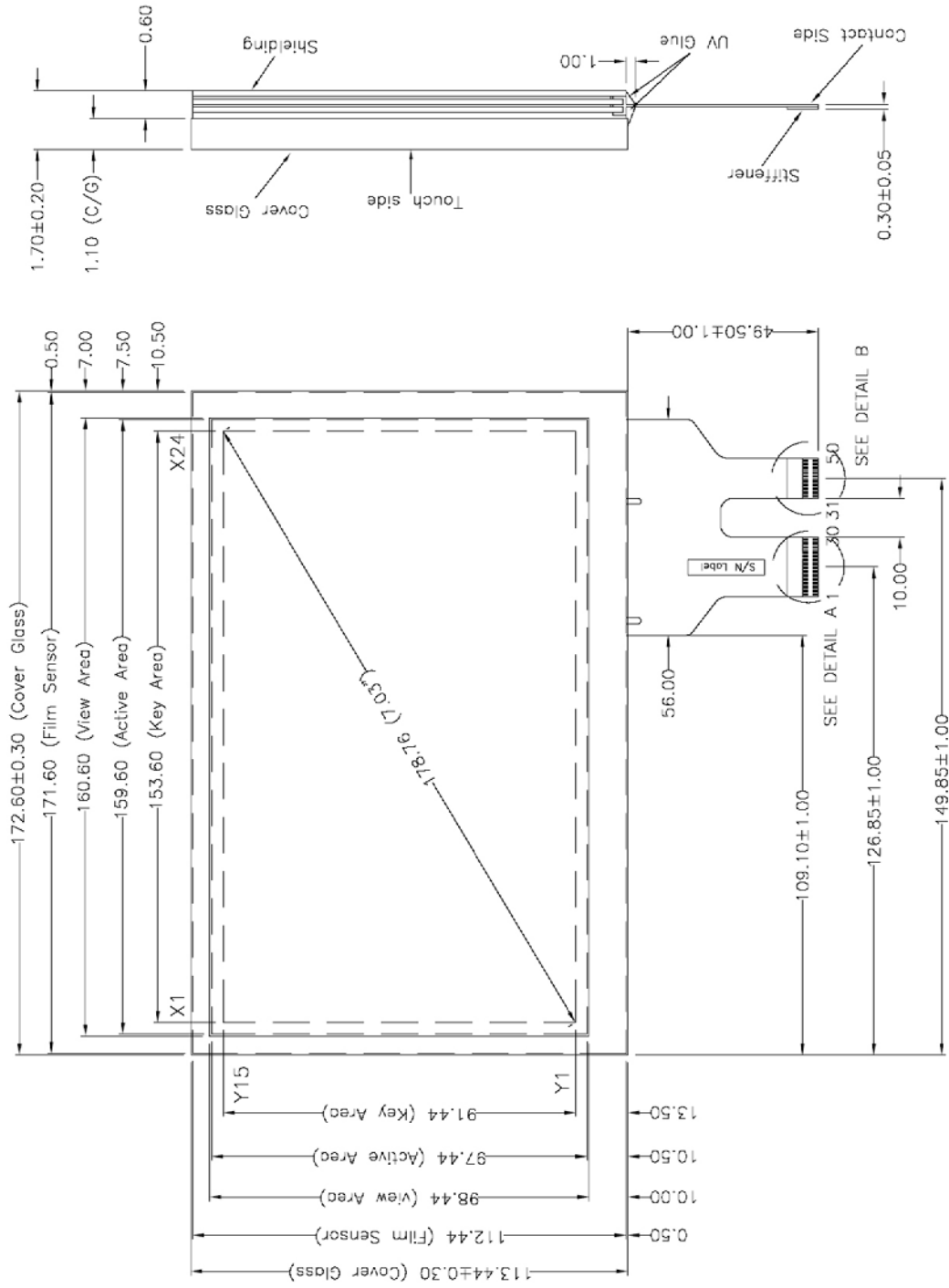
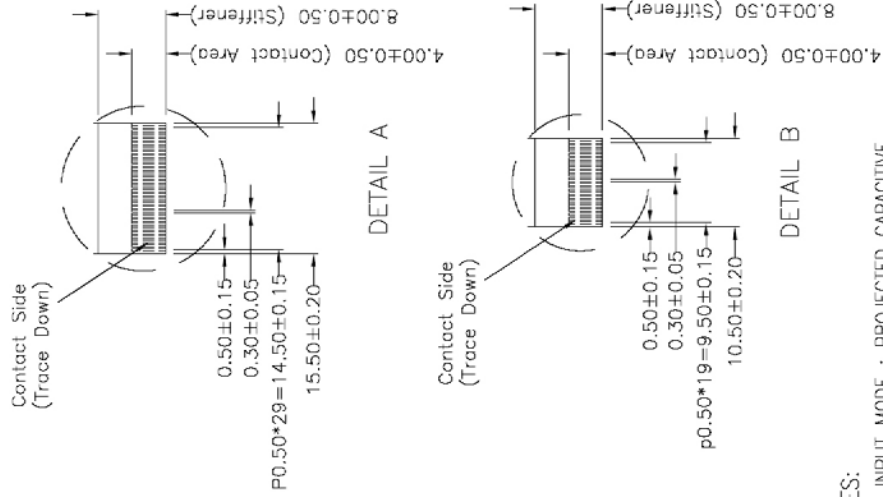
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# Touch Side View

CONNECTOR PINOUT	
PIN#	DESIGNATION
1	Shielding
2	Blank
3-4	Grounding Line
5	Blank
6-29	Sense X1-X24
30-31	Grounding Line
32	Blank
33-47	Sense Y1-Y15
48-49	Grounding Line
50	Blank



## 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 PM1201
7. OTHER SPEC : SEE APPROVAL SHEET



NO.	DATE	DESCRIPTION	CHK
REVISION			
CHIEF OF DESIGN		APPROVED	
ENGINEER		PROJECT MANAGER	
DRAWN BY	Andre	DATE	JUN 10, 2011
SHT 1	OF 1	REV.	0
ANGULAR			SCALE: N/S