

# ITO PROJECTIVE CAPACITIVE TOUCH PANEL

## Product Specification

<b>PRODUCT NUMBER</b>	<b>DTS424-0700-0FX-000</b>
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INTERNAL APPROVALS		
Product Manager	Engineering	Document Control

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**REVISION RECORD**

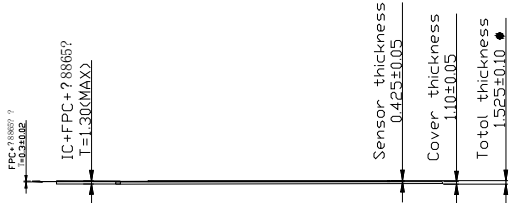
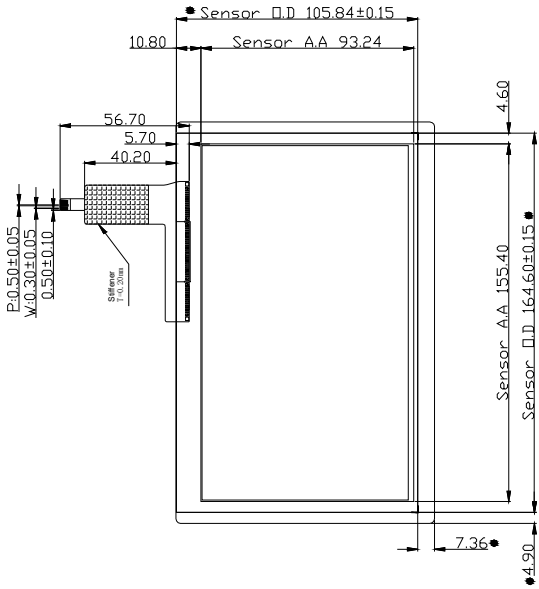
<b>Rev.</b>	<b>Date</b>	<b>Page</b>	<b>Par.</b>	<b>Comment</b>	<b>ECN no.</b>
A	07/09/12	--	--	New DCA Specification	E4678

**1 MAIN FEATURES**

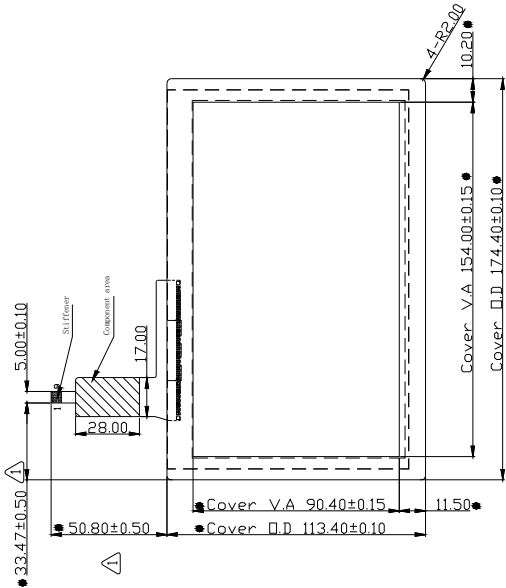
<b>ITEM</b>	<b>CONTENTS</b>	<b>UNIT</b>
Input Mode	Finger / Gloves	--
Structure	Glass on Film Film	--
TP OL	174.40 (W) x 113.40 (H)	mm
Sensor Area(Active Area)	155.40 (W) x 93.24 (H)	mm
IC/Interface	FT5406+C8051F321 /USB (Windows 7 compatible)	--
Touch Panel Resolution	100 dots per inch	Pixel
Total Thickness	1.525 ±0.10 (D)	mm

2 MECHANICAL DRAWING

Rear View



Top View



Pin	NAME
1	VDD5V
2	USB D-
3	USB D+
4	GND
5	NC
6	NC
7	NC
8	NC
9	GND

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### 3 ENVIRONMENTAL CONDITIONS

Item	Specifications	
	Temperature	Humidity (Non Condensing)
Operation	-20 °C ~ +70 °C	10%RH ~ 90%RH
Storage	-20 °C ~ +70 °C	10%RH ~ 90%RH

### 4 PIN ASSIGNMENT

Pin No.	Symbol	I/O	Description
1	VDD 5V	--	Power
2	USB D-	--	USB
3	USB D+	--	USB
4	GND	--	Ground
5	NC	--	No Connection
6	NC	--	No Connection
7	NC	--	No Connection
8	NC	--	No Connection
9	GND	--	Ground

Recommended mating connector:  
Molex 0512810994  
Molex 0527450997

## 5 OPTICAL CHARACTERISTICS

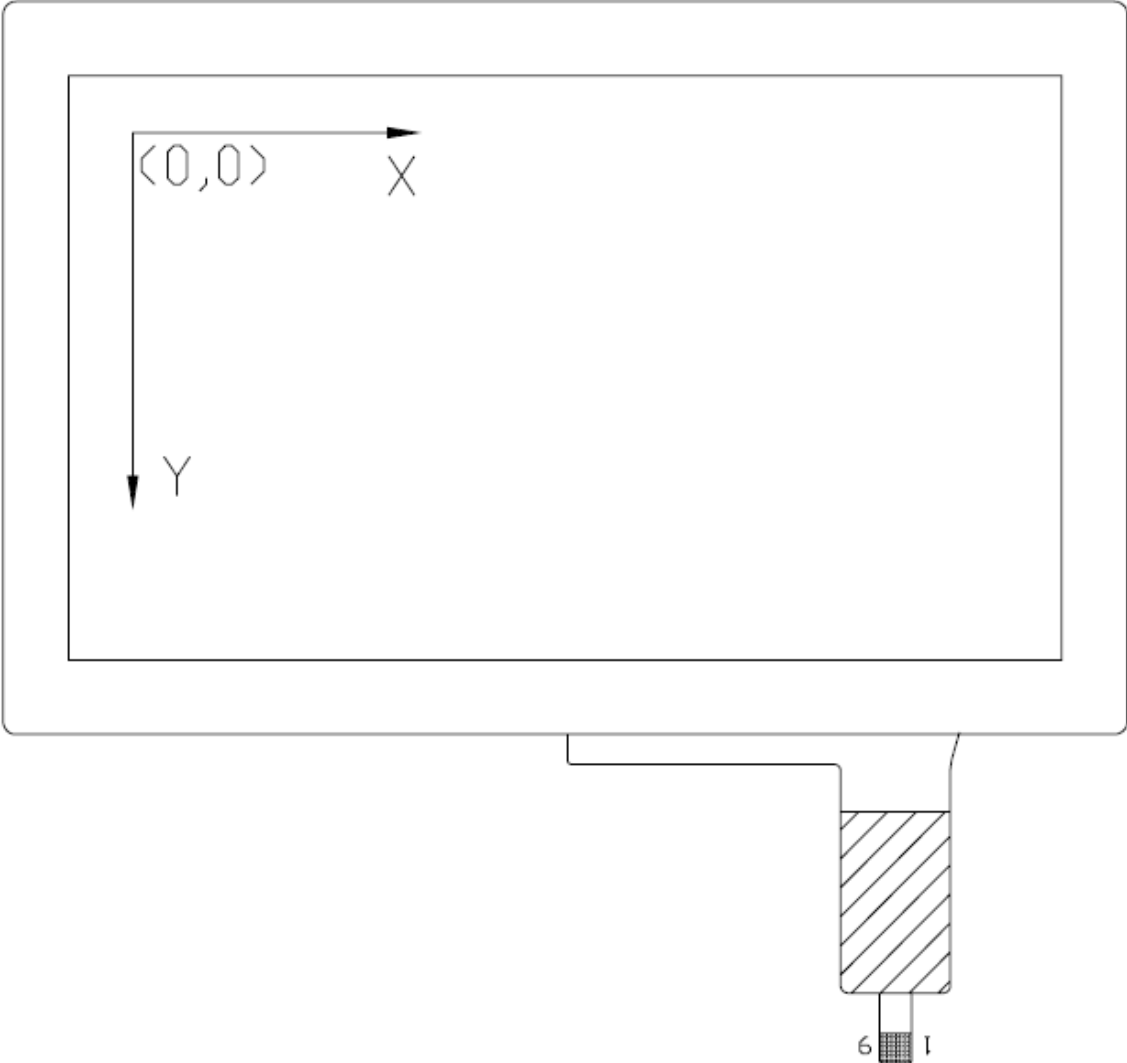
There are 2 optical test specifications that the complete touch panel product must meet as shown below:

<b>Item</b>	<b>Specifications</b>	<b>Remark</b>
Transparency	$\geq 84\%$ Wave length 550 nm	Note 6.1
Haze	5% Max	
ITO pattern	Not invisible	Note 6.2
Hardness	6H	

Note 6.1: After stabilizing the panel, the measurement should be executed. Measurement should be executed in a stable, windless and dark room. Optical specifications are measured by Nippon, NDH-5000 meter 1.0 degree field of view at a distance of 35 cm and normal direction.

Note 6.2: Touch panel should be inspected so that ITO pattern is not visible to the human eye under certain condition as normal light and a distance of 35 cm.

6 FUNCTIONAL BLOCKS



Communication protocol: USB  
IC: FT5406+ C8051F321  
Windows 7 Compatible

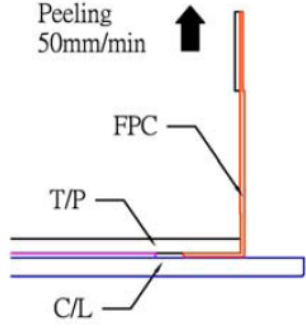
## 7 RELIABILITY TEST

Item	Specifications	Condition
Constant Temperature/Humidity	60°C/90%RH, 120 hrs	Reliability test may cause the film to slightly puffed, yet the functions stays intact. Note 1, 2
High Temperature	70°C, 120 hrs	
Low Temperature	-20°C, 120 hrs	
Thermal Cycle	-10°C~60°C (1.0 hr each), 100 cycles (within 24hr)	
ESD	HBM 5KV	Non-operation
	Contact 8KV	
	Air 15KV	

Note 1: The test samples have recovery time for 4 hours at room temperature before the function check. In the standard conditions, there is no touch panel function NG issue record.

Note 2: All the cosmetic specifications are judged before reliability stress.

## 8 DURABILITY

Item		Specifications	Condition
Panel	Impact	Steel Ball Weight: 50±2g Impact Height : 50 cm	1 time, no damage [Impact at center area]
	Hardness	6H pencil, pressure 1N/45° (JIS K-5400)	≧ 6H
FPC	Peeling (vertical 90°)	strength: ≧ 400g/cm pull rate: 50mm/min  1. FPC holder edge should be in alliance with FPC edge. 2. FPC center line should be in alliance with FPC holder center, to avoid shear force.	Peeling (NG)  
	Bending Test	Bending 10times Min	Function should be OK
Back Side Adhesive	Adhesive Test	strength: ≧ 1000g/cm	Peeling (NG)



## 9 QUALITY ASSURANCE SPECIFICATION

The criteria could be following the description as below:

1. Environment:  $22 \pm 3^{\circ}\text{C}$ , Inspection distance:  $30 \pm 10\text{cm}$ .
2. Angle of Visual:  $30^{\circ}\sim 90^{\circ}$ .
3. Lighting illumination: 17W fluorescent lamp is used appearance inspection.  
Detail settings are shown in figure 1 & 2.
4. Minor impurities outside viewing area are acceptable unless their existence affect electrical functions.

Figure 1:

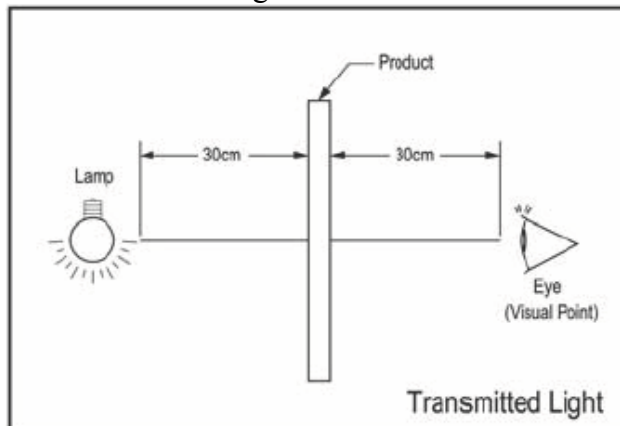
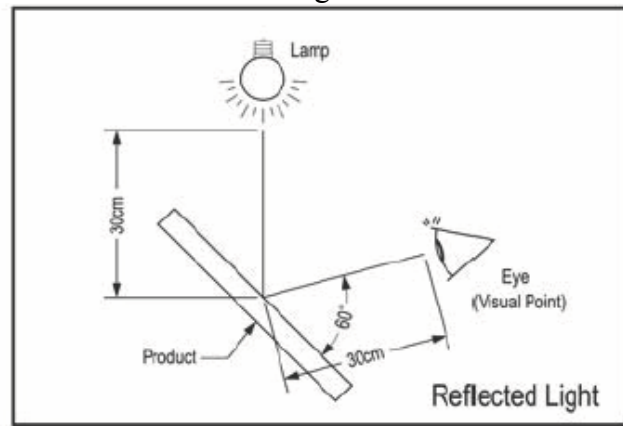
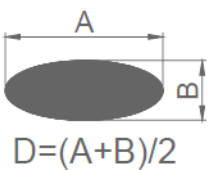
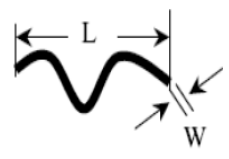
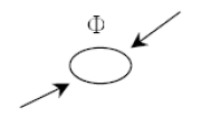
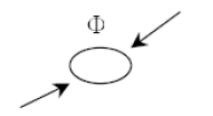
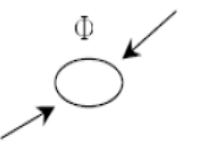
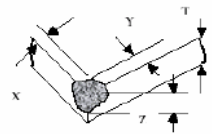
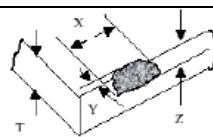


Figure 2:



Item	Specifications	Picture
Particle	(1) $D \leq 0.2$ OK (2) $0.2 < D \leq 0.3$ , $n \leq 2$ , distance over 5mm (3) $0.3\text{mm} < D \leq 0.4\text{mm}$ , $n \leq 1$ , (4) $D > 0.4\text{mm}$ NG	
Linear Object	(1) $W \leq 0.1$ OK (2) $0.1 < W \leq 0.2$ and $L \leq 5.0$ , total $\leq 2$ OK (3) $W > 0.2$ NG Remark: the particle will be ignored when it is removable by cleaning.	
Scratch	(1) $W \leq 0.02$ OK (2) $0.02 < W \leq 0.05$ and $L \leq 5\text{mm}$ , total $\leq 3$ OK, distance over 5mm (3) $0.05 < W \leq 0.1$ and $L \leq 5\text{mm}$ , total $\leq 2$ OK (4) $W > 0.1$ NG	
Bubble	(1) $D \leq 0.2$ OK (2) $0.2 < D \leq 0.3$ , $n \leq 3$ , (3) $0.3\text{mm} < D \leq 0.5\text{mm}$ , $n \leq 2$ , (4) $D > 0.5\text{mm}$ NG	
Dent	(1) $D \leq 0.1$ OK (2) $0.1 < D \leq 0.2$ , $n \leq 2$ , (3) $0.2\text{mm} < D \leq 0.3\text{mm}$ , $n \leq 1$ , (4) $D > 0.3\text{mm}$ NG	
Corner Chipping	$X < 2\text{mm}, Y < 3\text{mm}, Z < 1/2$ Glass thickness $N \leq 1$	
Edge Chipping	$X < 3\text{mm}, Y < 3\text{mm}, Z < 1/2$ Glass thickness $N \leq 1$	
Crack	Not allowed	