



DATA DISPLAY GROUP

Datasheet

DD Group

Projected Capacitive Touchscreen

TO-18-5xx

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Projected Capacitive Touch screen

SPECIFICATIONS

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SPECIFICATIONS

1. Scope

This specification is applied to Projected Capacitive touch screen products.

2. Features

2.1 Structure

Film / Film and cover glass

2.2 Film and cover glass Type

Film Thickness: 0.125 mm, 0.188mm, 0.21±10%

Cover Glass Thickness: 0.7mm, 1.1mm, 2.0 mm, 3.0mm, 4.0mm, 5.0mm, 6.0mm±10%

- Normal glass

- Strengthened glass (optional)

2.3 Available Sizes

5.6" to 24.0 "

3. Electrical Characteristics

3.1 Positional Accuracy

X axis: ±1.0% or less

Y axis: ±1.0% or less

3.2 Response time

Max. 20ms

4. Optical Characteristics

4.1 Light Transmittance

Total: More than 82% (Typical)

4.2 Haze

$2.0 \pm 1.0\%$

5. Mechanical Characteristics

5.1 Input method

Finger, Limited gloves

5.2 Operating Force

No Touch activation force is required.

5.3 Cover Glass

Normal glass

Strengthened glass (optional)

Pencil hardness rating: More than 8H (Typical)

6. Environmental Characteristics

6.1 Operation temperature

Temperature: from -25 to °C 70°C

6.2 Storage temperature

Temperature: from -30 to °C 80°C

7. Reliability

7.1 Low Temperature

Put it in a vessel at the condition of -30 °C for 120 hours, and then leave it at room temperature for 4 hours. (Non-operation)

7.2 High temperature

Put it in a vessel at the condition of 80 °C for 120 hours, and then leave it at room temperature for 24 hours. (Non-operation)

7.3 High temperature and High humidity

Put it in a vessel at the condition of 60 °C, 80%RH for 120 hours, and then leave it at room temperature for 4 hours. (Non-operation)

7.4 Thermal Shock

Put it in a vessel at the condition of -30°C for 30 minutes and then 80 °C for 30 minutes. °C This Process is repeated 10 cycles. (Non-operation)

8. Durability

8.1 Fracture strength

Item	Normal glass		Strengthened glass	
	Cover Glass Thickness	0.7, 1.1mm	2.0~6.0mm	0.7, 1.1mm
Steel ball size	227g/ Ø 38mm	227g/ Ø 38mm	535g/ Ø 50mm	535g/ Ø 50mm
Ball dropping height	50cm	80cm	50cm	100cm

8.2 Chemical Resistance tests (Surface)

Test Method: ASTM D-F-1598-95 Industrial chemicals

Property	Specification	Test Conditions
Hydrochloric Acid	6%	10 Min. 25° C
Nitric Acid	70%	10 Min. 25° C
Sulfuric Acid	40%	10 Min. 25° C
Toluene		10 Min. 25° C
Ethanol		10 Min. 25° C
Xylene		10 Min. 25° C
Acetone		10 Min. 25° C
Methyl Ethyl Ketone		10 Min. 25° C

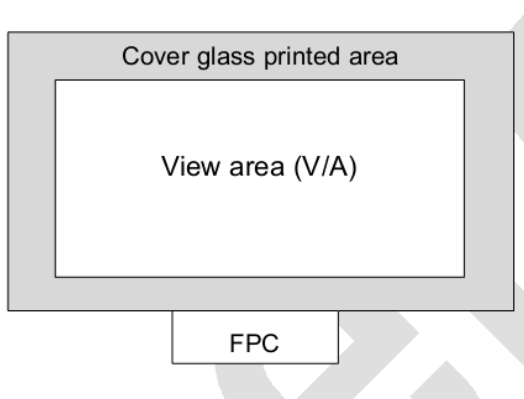
9. Appearance inspection criterion

The followings are applied to the viewing area. Those in the non-viewing area are ignored as long as the electrical performance of the touch panel is normal.

Contamination that can be cleaned using a soft cloth with ethyl alcohol does not apply to these inspection criterions.

But if an object is in the viewing area after rubbed by the soft cloth to a direction 3 times longer, it is considered a linear foreign object.

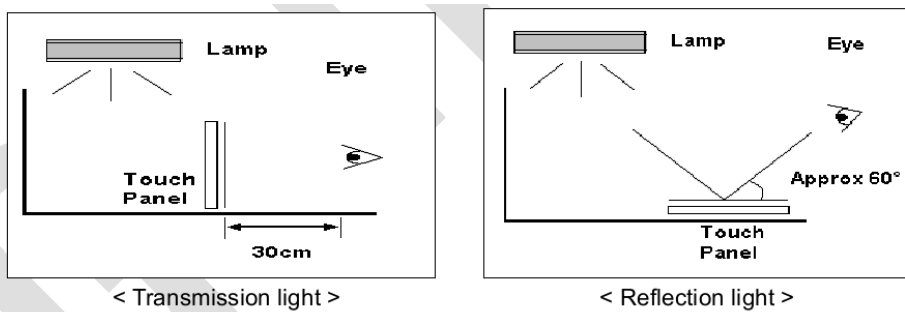
9.1 Inspection Area



9.2 Inspection condition

The inspection shall be performed by using 1000LUX fluorescent lamp.

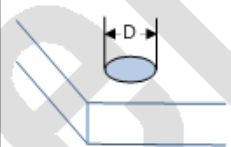
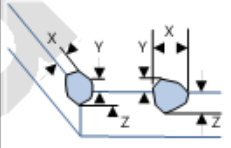
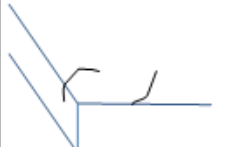
The panel shall be placed at 30cm away from eyes as shown below.



9.3 Inspection Flow



9.4 Visual inspection

DEFECT TYPE		CRITERION		DECISION		
Granular foreign object (Spot, Stain, Dust)		$D \leq 0.3\text{mm}$		Acceptable		
		$0.3\text{mm} < D \leq 0.5\text{mm}$		Acceptable if less than 5 pcs		
		$D > 0.5\text{mm}$		Unacceptable		
Bubble, Surface Defect		$D \leq 0.3\text{mm}$		Acceptable		
		$0.3\text{mm} < D \leq 0.5\text{mm}$		Acceptable if less than 5 pcs		
		$D > 0.5\text{mm}$		Unacceptable		
Liner foreign object (Light lint, Dark lint, Hair)		$W \leq 0.1\text{mm}$	$L \leq 2\text{mm}$	Acceptable		
		$0.1\text{mm} < W \leq 0.2\text{mm}$	$L \leq 2\text{mm}$	Acceptable if less than 5 pcs		
		$W > 0.2\text{mm}$	$L \leq 2\text{mm}$	Unacceptable		
Scratch		$W \leq 0.1\text{mm}$	$L \leq 3\text{mm}$	Acceptable		
		$0.1\text{mm} < W \leq 0.2\text{mm}$	$L \leq 3\text{mm}$	Acceptable if less than 5 pcs		
		$W > 0.2\text{mm}$	$L \leq 3\text{mm}$	Unacceptable		
Cover Glass	Dent			Front	$D \leq 0.3\text{mm}$	Acceptable
				Back	$D \leq 0.5\text{mm}$	
	Breakage		Corner	Not-Printed	$X \leq 2\text{mm}, Y \leq 2\text{mm}$ $Z \leq t/2\text{mm}$	Acceptable
				Printed	-	Unacceptable
			Edge	Non-Printed	$X \leq 3\text{mm}, Y \leq 2\text{mm}$ $Z \leq t/2\text{mm}$	Acceptable
				Printed	-	Unacceptable
	Crack		Corner, Edge	Non-Printed	-	Unacceptable
				Printed	-	

10. Controller Specifications

USB / RS232 / I2C Type Controller	
Input Voltage	3.5V~5.5V.Typical 5V.
Operating Temperature	-40 to 85 °C
Storage Temperature	-40 to 90 °C
Relative Humidity	95% at 60 °C, RH Non-condensing
Interface	USB: 1.1 Full Speed RS232: No parity, 8 data bits, 1 stop bit, baud rate 57600bps I2C:100K/400K Hz
Resolution	2048×2048 resolution
Power consumption	Active Mode: Max 50 mA Idle Mode : 5mA Sleep Mode :0.5mA (Operation Mode :Active Mode only)
Response time	Max. 20 ms

11. Handling Remarks

SUBJECT	NOTE
Storage	<ul style="list-style-type: none"> ▪ Store the products at the temperature and humidity range presented in the specification. ▪ Store the products in the state of package.
Unpacking	<ul style="list-style-type: none"> ▪ Do not hold FPC tail to take out touch panels in the package.
Handling	<ul style="list-style-type: none"> ▪ Use gloves and finger coat to prevent stains on the touch panel and injury by the sharp edge of the touch panel. ▪ Do not take hold of FPC tail when handing the touch panel. ▪ Do not pile up touch panels. ▪ Do not put anything on the touch panel. ▪ Do not fold the FPC tail. ▪ Clean off the touch panel with alcohol and a soft clothes when necessary ▪ Prevent alcohol from penetrating into the touch panel. ▪ Do not use organic solvents except for alcohol.
Assembly	<ul style="list-style-type: none"> ▪ Avoid excessive force on the touch panel. ▪ Do not give unnecessary strain to the FPC tail while assembling.
Operation	<ul style="list-style-type: none"> ▪ Do not operate touch panel by applying excessive force. ▪ Do not use a sharp thing for input.

12. Others

This specification shall guarantee the quality of the product.

When using the products, be sure to check and evaluate after installing on your equipment.

It is fragile product. Please put the box down gently and prevent dropping the box.

Any changes of the approved specification should be approved by both parties.

It cannot be changed if not approved.

13. Warranty

Film to Film type sensor manufactured to this specification shall be capable of meeting all characteristics for a minimum period of one year from the shipping date of Inotouch when stored or used as specified under normal conditions within the contents of these sheets.

If touch panel products are not stored or used as specified herein, this warranty cannot be applicable.

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