



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司



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SPECIFICATION

CUSTOMER : _____

MODULE NO.: TST0004R3C1241XXXX01

APPROVED BY: (FOR CUSTOMER USE ONLY)	PCB VERSION: _____ DATA: _____
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SALES BY	APPROVED BY	CHECKED BY	PREPARED BY

VERSION	DATE	REVISED PAGE NO.	SUMMARY
B	2014/12/03		Updata Rev.



RECORDS OF REVISION			DOC. FIRST ISSUE
VERSION	DATE	REVISED PAGE NO.	SUMMARY
0	2013/01/15		First issue
A	2013/07/23		Add optical characteristics & electrical characteristics & mechanical characteristics & Reliability
B	2014/12/03		Updata Rev.

Contents

- 1.General Specification
- 2.Electrical Characteristics
- 3.Contour Drawing
- 4.Other

1.General Specification

1.1. Type: resistive touch panel

1.2. Input mode: Stylus or finger

1.3. Structure and material:

Structure	Material	Thickness	Thickness Remark
Cover lens			
Upper circuits	ITO Film(Anti-Glare)	0.188mm(Anti-Glare)	
Bottom circuits	ITO Glass	0.70mm	
Back tape	3M467	0.10mm	

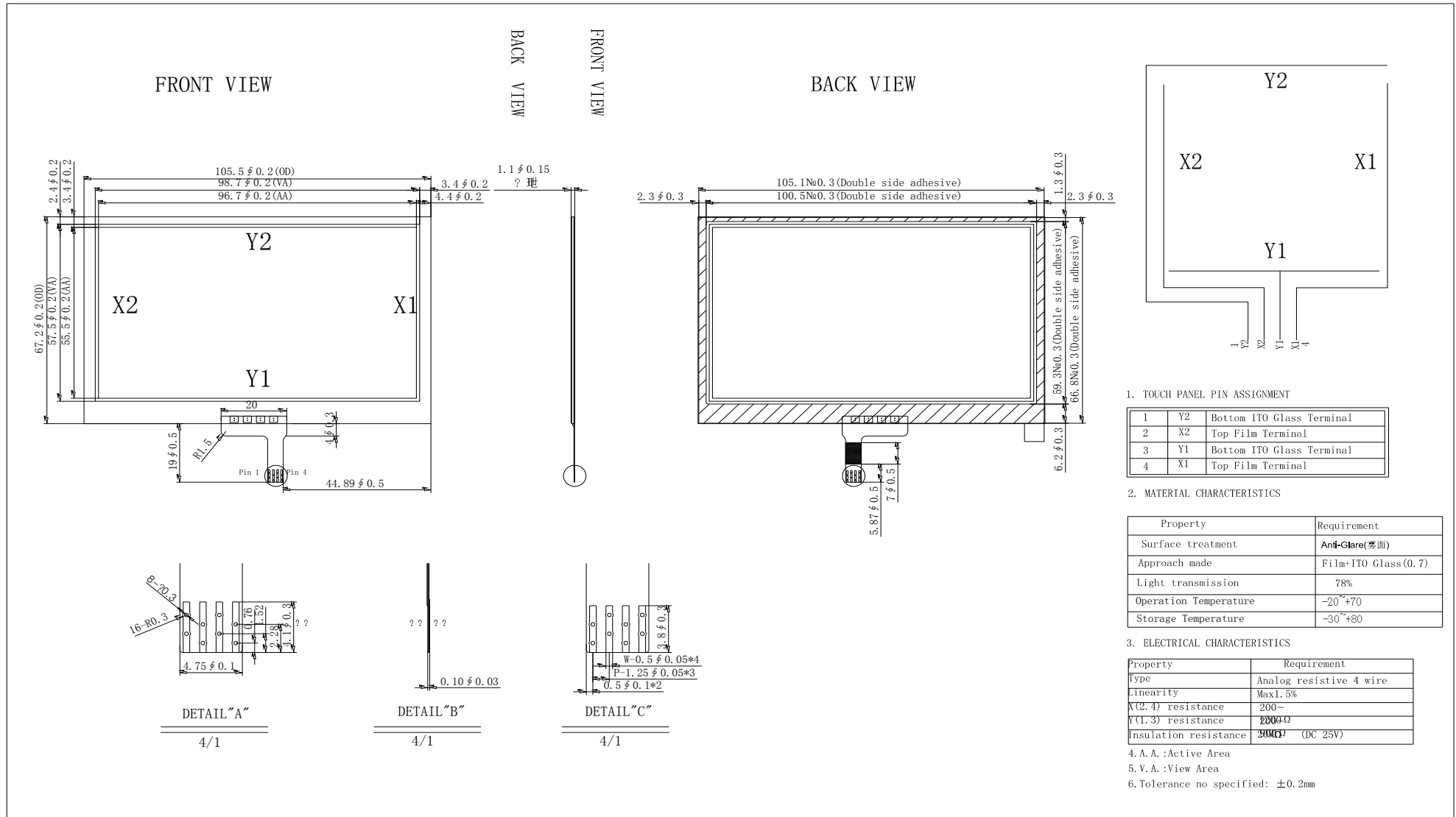
1.4. Dimension:

Item	Description	Unit
Outline dimension	105.5*67.2±0.2	mm
View Area	98.7*57.5±0.2	mm
Active area	96.7*55.5±0.2	mm
Total thickness	1.1±0.15(With Double side adhesive)	mm
Length of FPC	19±0.5	mm
Thickness of FPC terminal	0.10±0.03	mm

2. Electrical Characteristics

Item	Specification
Loop resistance	X: $200 \leq 1200 \Omega$
	Y: $200 \leq 900 \Omega$
Insulation resistance	$>20M\Omega$ (DC 25V)
Chattering time	$\leq 10ms$
Supply voltage	DC 5V Max

3. Contour Drawing



4. Other

4.1. Environmental characteristics

Item	Specification
Operating Temp.	-20°C ~ 70°C (35 ~ 90%RH No dew fall)
Storage Temp.	-30°C ~ 80°C (35 ~ 90%RH No dew fall)

4.2. Mechanical characteristics

Item	Specification	Remark
Activation force	Stylus R 0.8mm, 60~150g	
Surface hardness	≥3H	

4.3. Optical characteristics

Item	Specification	Remark
Light transmission	≥78	

4.4. Reliability and Durability test

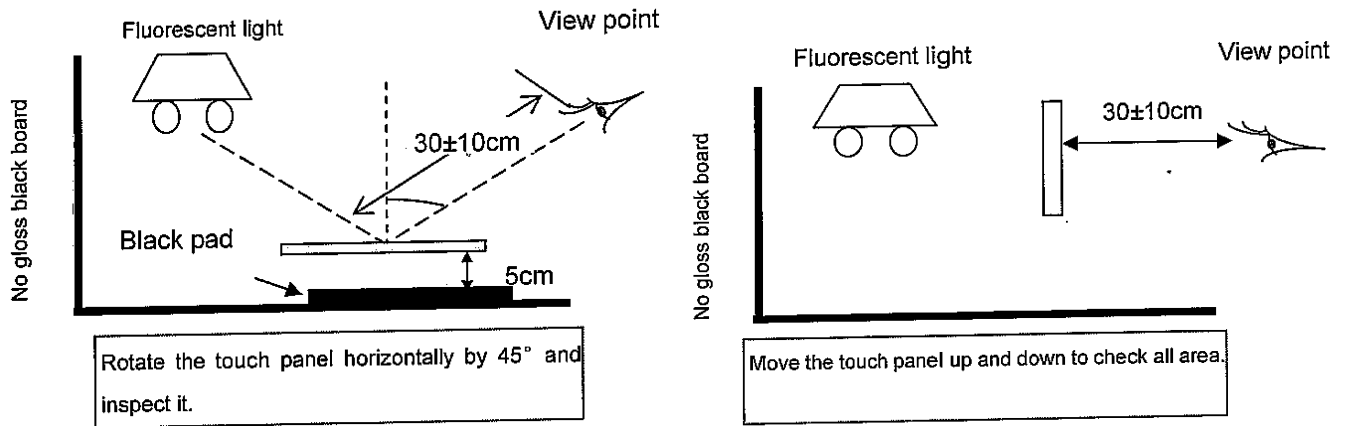
Item	Specification	Remark
High temperature storage	70°C for 240H	After the above test, the touch panel is to be exposed at room condition for 24H or more. The loop resistance, linearity, insulation resistance must be within the spec. stated as 3.2
Low temperature storage	-20°C for 240H	
High temperature & high humidity storage	60°C, 90%RH for 240H	
Thermal shock	-20°C (0.5H) ~ 70°C (0.5H), 20 cycles	

Item	Condition	Criteria
Hitting test	Stylus R 0.8mm, 250g, Hitting 1000000 times	The loop resistance, linearity, insulation resistance must be within the spec. stated as 3.2 after test.

4.5. Appearance specification

Condition of inspection

The inspection should be conducted at the fluorescent light (800-1200lux) ,and at a distance of around 30cm between TP and inspector's eye.

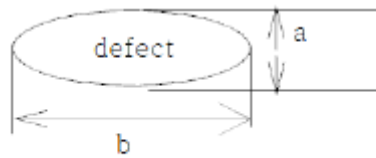


Area of inspection

Any defects that are not in view area should be ignored unless it affects electrical performance.

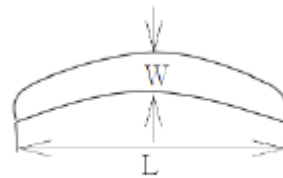
Defects description

Dot , $D=(a+b)/2$



[Fig.1] Dot Defect

linear



[Fig.2] Line Defect

Fisheye & dent



Newton ring



Regular



Irregular

4.6. Standards

linear objects

Description	Criteria
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$W < 0.05\text{mm}, L \leq 10\text{mm}$	Ignore
$0.05\text{mm} \leq W \leq 0.10\text{mm}, L \leq 10\text{mm}$	3 or less , distance over 10mm, Ignore
$W > 0.1\text{mm}, L > 5\text{mm}$	NG

Scratch

Description	Criteria
$W < 0.03\text{mm}, L \leq 5\text{mm}$	Ignore
$0.03\text{mm} \leq W \leq 0.05\text{mm}, L \leq 5\text{mm}$	Those are ignored with more than 10mm separation
$0.03\text{mm} \leq W \leq 0.05\text{mm}, L \leq 5\text{mm}$	Scratch with another space $< 10\text{mm}$, rejection
$L > 5\text{mm}$	Defective goods.
$W > 0.05\text{mm}$	Defective goods.

Foreign particles

Description	Criteria
$D \leq 0.10\text{mm}$	Ignore
$0.10\text{mm} < D \leq 0.20\text{mm}$	3 or less, distance over 10mm, Ignore
$0.20\text{mm} < D \leq 0.25\text{mm}$	Only one
$D > 0.25\text{mm}$	NG

Fisheye & dent

Description	Criteria
$D \leq 0.2\text{mm}$	Ignore
$0.2\text{mm} \leq D \leq 0.5\text{mm}$	5 or less, distance over 10mm, Ignore
$D > 0.5\text{mm}$	NG

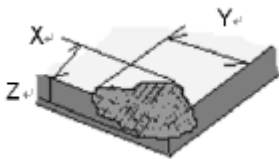
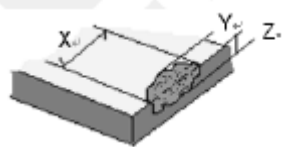
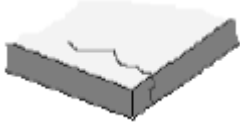
Newton ring

Description	Criteria
Regular	Covering less than 1/6 of the view area, Ignore
Irregular	Covering less than 1/6 of the view area, Ignore

Cover lens

Description	Criteria
Chromatics	According to the limited sample or standard colour
Icon & Script	According to the confirmed drawing or limited sample
White/diachronic specks in the printing area	Script area: $\varnothing < 0.2\text{mm}$, other area: $\varnothing < 0.3\text{mm}$; 2 or less , distance over 5mm, ignore
Lumps in the printing area	Script area: $\varnothing < 0.2\text{mm}$, other area: $\varnothing < 0.3\text{mm}$; 2 or less , distance over 5mm, ignore

Glass damage

Description	Criteria
<p>Conner damage</p> 	$X \leq 3, Y \leq 3, Z < \text{GT}$, Ignore
<p>Edge damage</p> 	$X \leq 3, Y \leq 3, Z < \text{GT}$, Ignore
<p>Crack</p> 	NG

4.7. Packing

Packing illustration

The batch outgoing goods use in the paper box to inlay plastic board packing

1. In the packing uses plastic board models packing.
2. The outside wrapping uses the paper box way packing.

4.8. Cautions:

Storage

Store product in room condition. Avoid exposing product to direct sunlight or contact with acid, alkali or other types of solution.

Do not pile or place heavy objects on top of product.

Handle product with care. Avoid dropping, bumping or colliding.

Handling and cleaning

Wear finger-cots and masks when handling product. Avoid direct contact with product surface in case of stains.

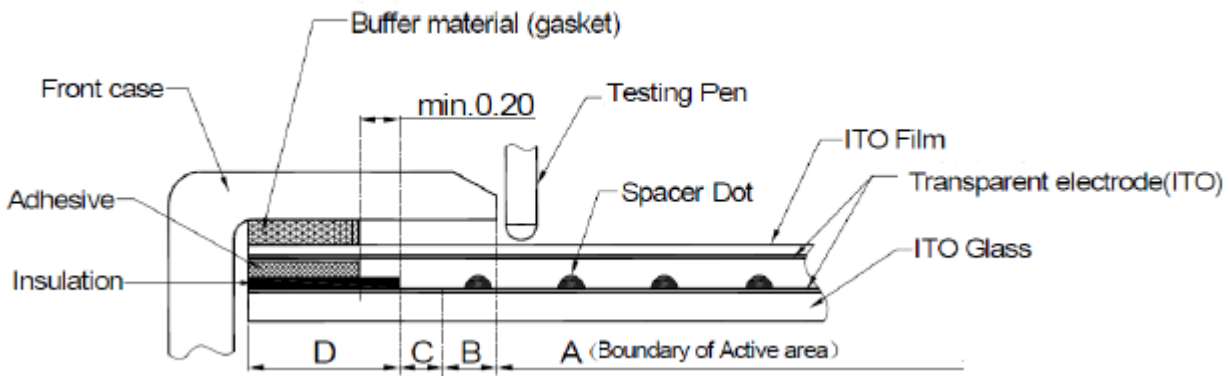
Do not pull FPC in case of damage when handling product.

Product can be cleaned with soft cloth. Soak cloth in a solution of neutral detergent or alcohol, wipe surface of the product with it.

Mounting

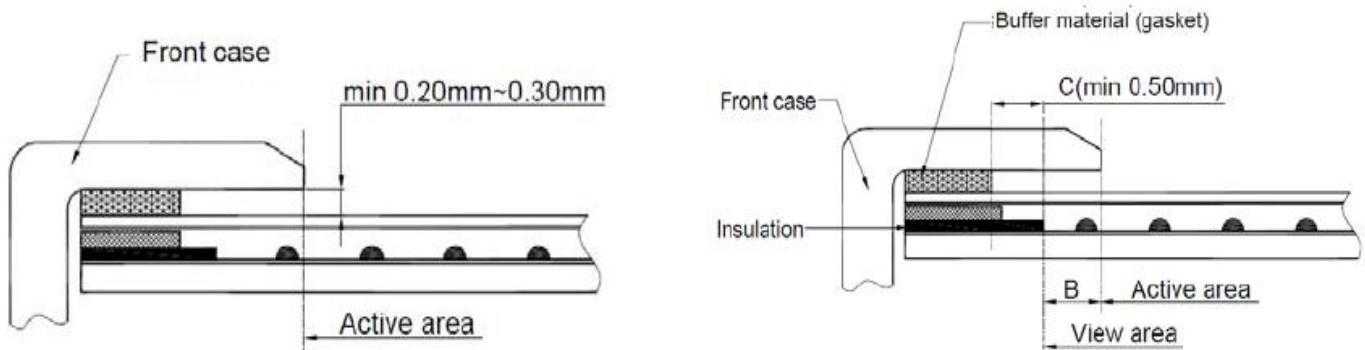
For structure: F+G

See the structure below for an example of mounting.



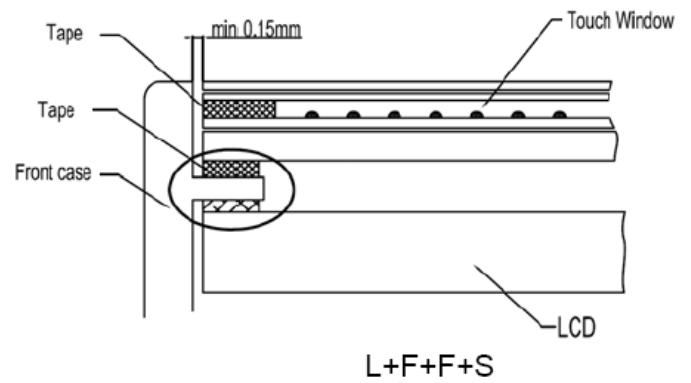
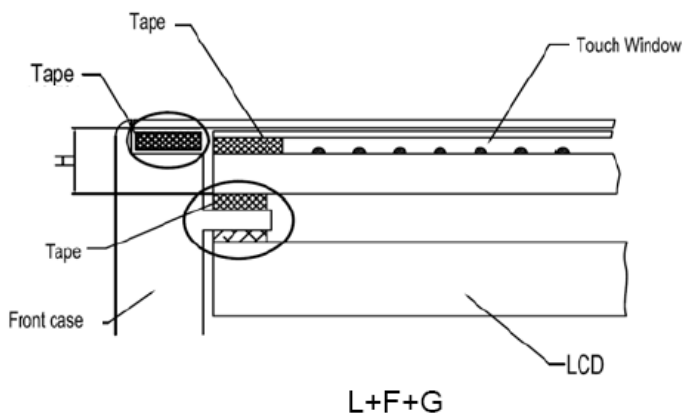
When assembling front case, please leave a clearance of 0.2-0.3mm. Refer to the illustration below.

Front case must cover the B area in order to avoid mishandling this area which can shorten the durability of product. Use a buffer material between the front case and TP to avoid damage and wrong operating. Refer to the illustration below for the suggested dimension.



For structure: L+F+G/L+F+F+S

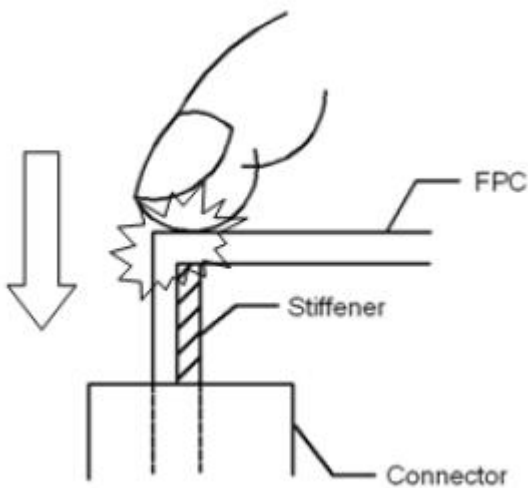
See the structure below for an example of mounting.



For structure : L+F+G. The glass should be finely supported to avoid separation.)

Please leave a clearance of 0.15mm at min. between the front case and cover lens.)

Don't pull or bend the FPC when mounting. Don't insert the FPC into connector at the edge of stiffener to avoid fracture or damage. Please avoid the mounting method as shown in the following illustration.)



Operating

Avoid operating with hard and sharp objects in case of damage to product.)