



TOP -TOUCH ELECTRONICS CO., LTD

Sample Approval

Supplier Name: Top-Touch Electronics Co., Ltd

Supplier Address: Shenyue Industry Zone, Li quang Village, Guan lan Town, Bao'an District, Shenzhen, China

Part Number: TTW4035032--- (T9210FG)

Description: 4 Wires Resistive Type

Top-Touch Approve:

Engineering	Technology	QA	Sales	Approve	Remark

Customer Approve:

Engineering	QA	Project Management	Other

4 Wires Touch Panel Product Specification

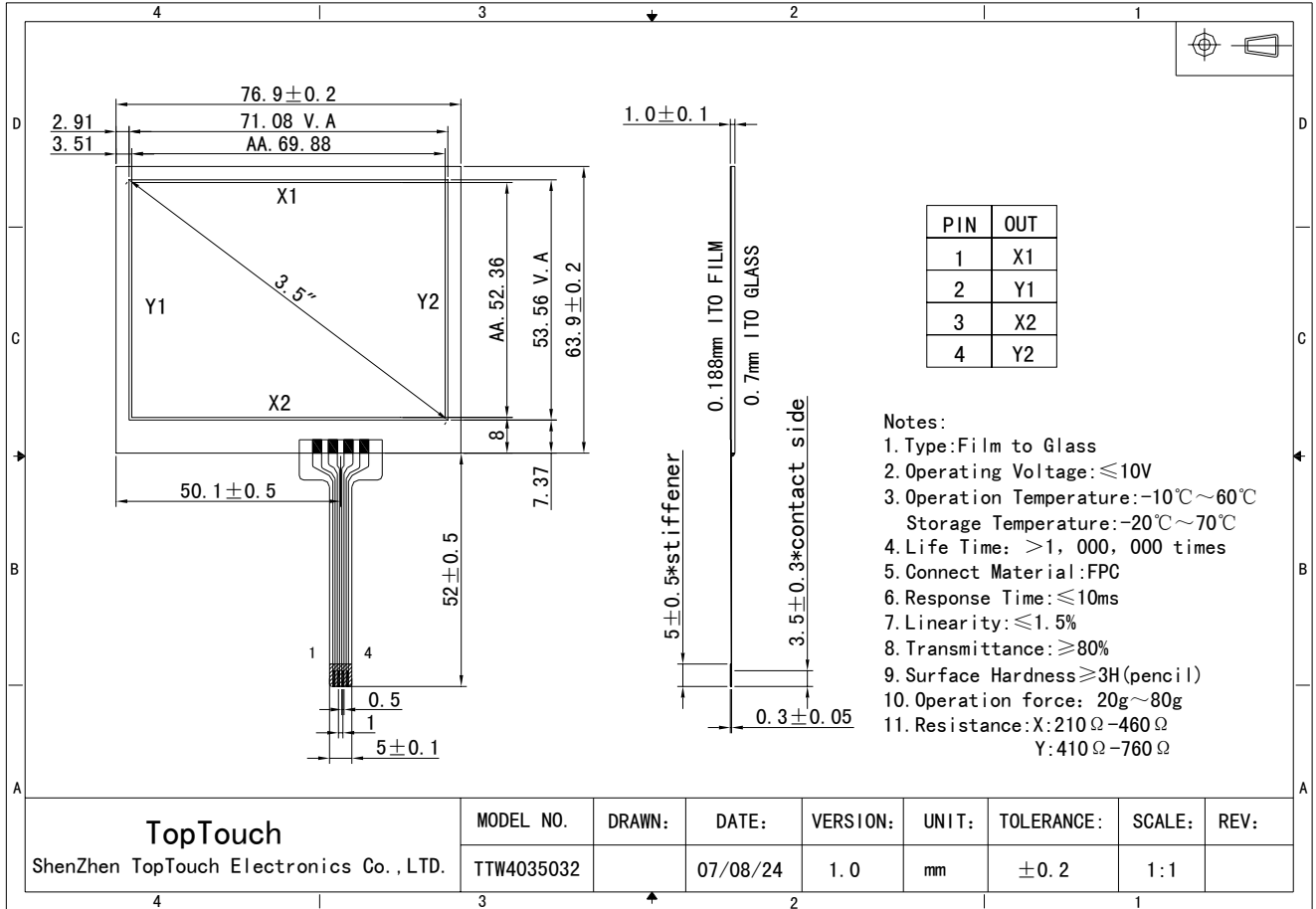
Structure : PET----- Glare hard coating
Glass----- ITO glass 0.7 mm
Dot Pitch-----3mm×3mm
Connector: FPC(4-Pin)

General Specifications:

Item	Specifications	Unit
Dimensional Outline	76.90±0.2(L) ×63.90±0.2(W)	mm
Viewing Area	71.08 (L)×53.56 (W)	mm
Active Area	69.88 (L) ×52.36 (W)	mm

		Touch Panel Specification	Issue No.		
SET	Index		Page	1	
<p>1. Index 01</p> <p>2. Apply To Specification 02</p> <p>3. Dimension 03</p> <p>4. Optical Performance 04</p> <p>5. Electrical Performance 04</p> <p>6. Trust Test 05 06</p> <p>7. Appearance Inspection Standard 07</p> <p>8. Packing & Others 08</p>					
AMEND NO		TOP-TOUCH ELECTRONICS CO., LTD	APPROVAL BY	CHECK BY	PREPARE BY
AMEND DATE					
PUBLISH DATE					

	Touch Panel Specification	Issue No.			
SET	Apply To Specification	Page	2		
<p>1. Suitability This specification suit analog resistance touch panel. Which used in LCD module.</p> <p>2. Apply To Specification 2.1 Surface Hardness: 3H 2.2 Optical Clarity: 80 %↑ 2.3 Operating Temperature: -10°C ~ 60°C 2.4 Endurance Test strikes: Over 1 million 2.5 Operating Voltage: DC5V 2.6 Resistance: 200Ω ~ 900Ω 2.7 Linearity : <1.5% 2.8 Faceplate Surface: Anti-glare coating 2.9 Operation Pressure: 15 ~ 70g 2.10 Storage Temperature: - 20°C ~ 70°C 2.11 Message Noise: 5 m sec ~ 15 m sec 2.12 Operating Current: 5mA ~ 25mA 2.13 Isolation Resistance: 20MΩ↑ @ DC 25V</p> <p>3. Dimension Size Refer diagram I</p>					
AMEND NO		TOP-TOUCH ELECTRONICS CO., LTD	APPROVAL BY	CHECK BY	PREPARE BY
AMEND DATE					
PUBLISH DATE					



Model No.				TOP - TOUCH ELECTRONICS CO.LTD	Unit: mm	DATE:	
						Amend Date:	

	Touch Panel Specification		Issue No.		
SET	Optical & Electrical		Page	4	
<p>4. Optical Performance Light transparency should keep above 80%↑ under the visible wave when the wave length is 550mm.</p> <p>5. Electrical Performance</p> <p>5.1 Connector Resistance 300Ω < X Axis < 900Ω 200Ω < Y Axis < 800Ω</p> <p>5.2 Insulation Resistance 20MΩ↑ @ DC 25V</p> <p>5.3 Electrostatic Endurance No abnormal appearance after 10kv, 100Ω, 250PF electrostatic used.</p> <p>5.4 Linearity X Axis : 1.5% ↓ Y Axis : 1.5% ↓</p> <p>5.5 Operating Voltage 3V ~ 12V DC</p> <p>5.6 Operating Current 5mA ~ 25mA °</p>					
AMEND NO		TOP-TOUCH ELECTRONICS CO., LTD	APPROVAL BY	CHECK BY	PREPARE BY
AMEND DATE					
PUBLISH DATE					

	Touch Panel Specification	Issue No.	
SET	Reliability Test	Page	5

6. Environment Test

6.1 High Temperature Test

After putting panels at 70°C for 240 hours, then leaving for 24 hours at room temperature.

A. Resistance between leads

300Ω < X Axis < 900Ω

200Ω < Y Axis < 800Ω

B. Linearity

X Axis : ±1.5%↓

Y Axis : ±1.5%↓

C. Insulation Resistance

20MΩ↑ @ DC25V

6.2 Low Temperature Test

After putting panels at -20°C for 240 hours, then leaving for 24 hours at room temperature.

A. Resistance between leads

300Ω < X Axis < 900Ω

200Ω < Y Axis < 800Ω

B. Linearity

X Axis : ±1.5%↓

Y Axis : ±1.5%↓

C. Insulation Resistance

20MΩ↑ @ DC25V

6.3 Temperature and Humidity Test

After putting panels at 40°C, 90%RH for 240 hours, then leaving for 24 hours at room temperature.

A. Resistance between leads

300Ω < X Axis < 900Ω

250Ω < Y Axis < 800Ω

B. Linearity

X Axis : ±1.5%↓

Y Axis : ±1.5%↓

C. Insulation Resistance

20MΩ↑ @ DC25V

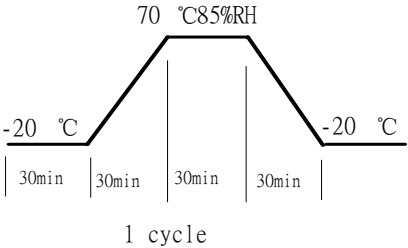
AMEND NO		TOP-TOUCH ELECTRONICS CO., LTD	APPROVAL BY	CHECK BY	PREPARE BY
AMEND DATE					
PUBLISH DATE					

	Touch Panel Specification	Issue No.	
SET	Reliability Test	Page	6

6.4 Repetition of High and Low Temperature and Test

After putting panels at the condition of -20°C for 30 minutes and then 70°C85%RH for 30 minutes and this process is repeated by 20 cycles , then leaving for 24 hours at room temperature.

- A. Resistance between leads
 $300\Omega < X \text{ Axis} < 900\Omega$
 $200\Omega < Y \text{ Axis} < 800\Omega$
- B. Linearity
X Axis : $\pm 1.5\% \downarrow$ Y Axis : $\pm 1.5\% \downarrow$
- C. Insulation Resistance
 $20M\Omega \uparrow$ @ DC25V



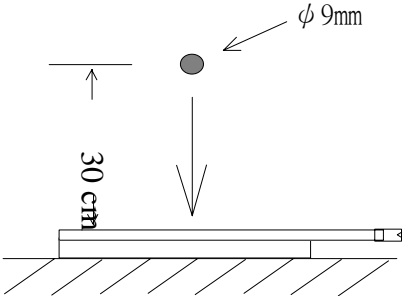
6.5 Punching Life

After punching 1,000,000 times with the R8.0 silicon rubber Force : 60g , Speed : 5/sec

- A. Resistance between leads
 $300\Omega < X \text{ Axis} < 900\Omega$
 $200\Omega < Y \text{ Axis} < 800\Omega$
- B. Linearity
X Axis : $\pm 1.5\% \downarrow$
Y Axis : $\pm 1.5\% \downarrow$
- C. Insulation Resistance
 $20M\Omega \uparrow$ @ DC25V

6.6 Impact Resistance

No damage when $\phi 9\text{mm}$ steel ball is dropped on the surface from 30cm height at 1 time.

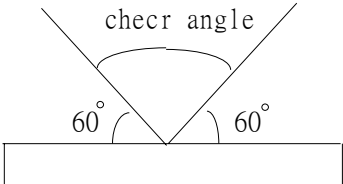


AMEND NO		TOP-TOUCH ELECTRONICS CO., LTD	APPROVAL BY	CHECK BY	PREPARE BY
AMEND DATE					
PUBLISH DATE					

	Touch Panel Specification	Issue No.	
SET	Appearance Inspection Standard	Page	7

7. Appearance

- 7.1 Inspection condition
 - (A).The lightness of place: 500 LUX
 - (B)The distance of eyeshot:30 CM(The panel must be checked under the light transparency condition.)
 - (C)The angle of eyeshot: >60°
 - (D)The light source of place : natural sunlight.



7.2 Inspection Standard

Suitable in the visible area. Except dot space.

1. Spot, otherness	$\phi \leq 0.15\text{mm}$	Ignorance
	$0.15\text{mm} \leq \phi \leq 0.25\text{mm}$	≤ 2
	$\phi > 0.25\text{mm}$	NG
2. Scratch	$w \leq 0.05\text{mm}$ and $L \leq 2.0\text{mm}$	Ignorance
	$w \leq 0.05\text{mm}$ $2.0\text{mm} < L \leq 4.0\text{mm}$	2 or less & distance > 5mm
	$W > 0.05\text{mm}$ or $L > 4.0\text{mm}$	NG
3. Cicatrices (Line) L: Length W: Width	$W \leq 0.03\text{mm}$	Ignorance
	$L \leq 4\text{mm}$ & $0.03\text{mm} \leq W \leq 0.05\text{mm}$	≤ 2 2 line distance $\leq 10\text{mm}$
	$W > 0.05\text{mm}$	NG
4. Edge warp	Edge warp $\leq 3\text{mm}$	allowable
	Edge warp $\leq 2\text{mm}$	allowable

7.3 Quality inspection standard

Adapt to AQL MIL-STD-105D
 Samples inspection QTY: according to AQL MIL-STD-105D(Charter I)
 Inspection Base: according to AQL MIL-STD-105D(Charter II)
 Broken seriously(othersness, scrape)0.01% --- Cr (Critical Defect)
 Obvious(othersness, scrape)0.65% ----- Ma(Major Defect)
 Not obvious(othersness, scrape)2.5% ----- Mi(Minor Defect)

AMEND NO		TOP-TOUCH ELECTRONICS CO., LTD	APPROVAL BY	CHECK BY	PREPARE BY
AMEND DATE					
PUBLISH DATE					

	Touch Panel Specification		Issue No.		
SET	Packing & Others		Page	8	
<p>8.Packing Detail</p> <p>8.1 Packing: Can't have otherness on panel. Pack with EPE material.</p> <p>8.2 Delivery: For Avoiding the badly affect to the product quality, shouldn't delivery in the situation of high humidity and unusually high or low temperature</p> <p>9.Others</p> <p>(1) If there is any question in specification , the decision depends on conferment between manufacturer and customer.</p> <p>(2) If there is any change in specification , can't actualize without document permit.</p> <p>(3) The specification content is different from the individual specification one, decision bases on the latter.</p>					
AMEND NO		TOP-TOUCH ELECTRONICS CO., LTD	APPROVAL BY	CHECK BY	PREPARE BY
AMEND DATE					
PUBLISH DATE					