



萬達光電科技股份有限公司
HIGGSTEC INC.

PRODUCT SPECIFICATIONS

產品規範書

Customer (客戶) :

Model (型式) : T170S-5RB004N-0A18R0-200FH

Mode (種類) : Five-wire Analog Touch Panel

Date (日期) : May 06, 2008

Version (版本) : 6.3

Customer Approval

客戶簽認

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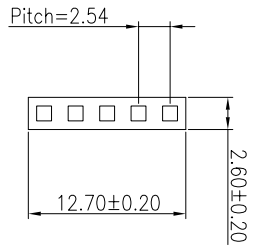
TABLE OF CONTENTS

目 錄

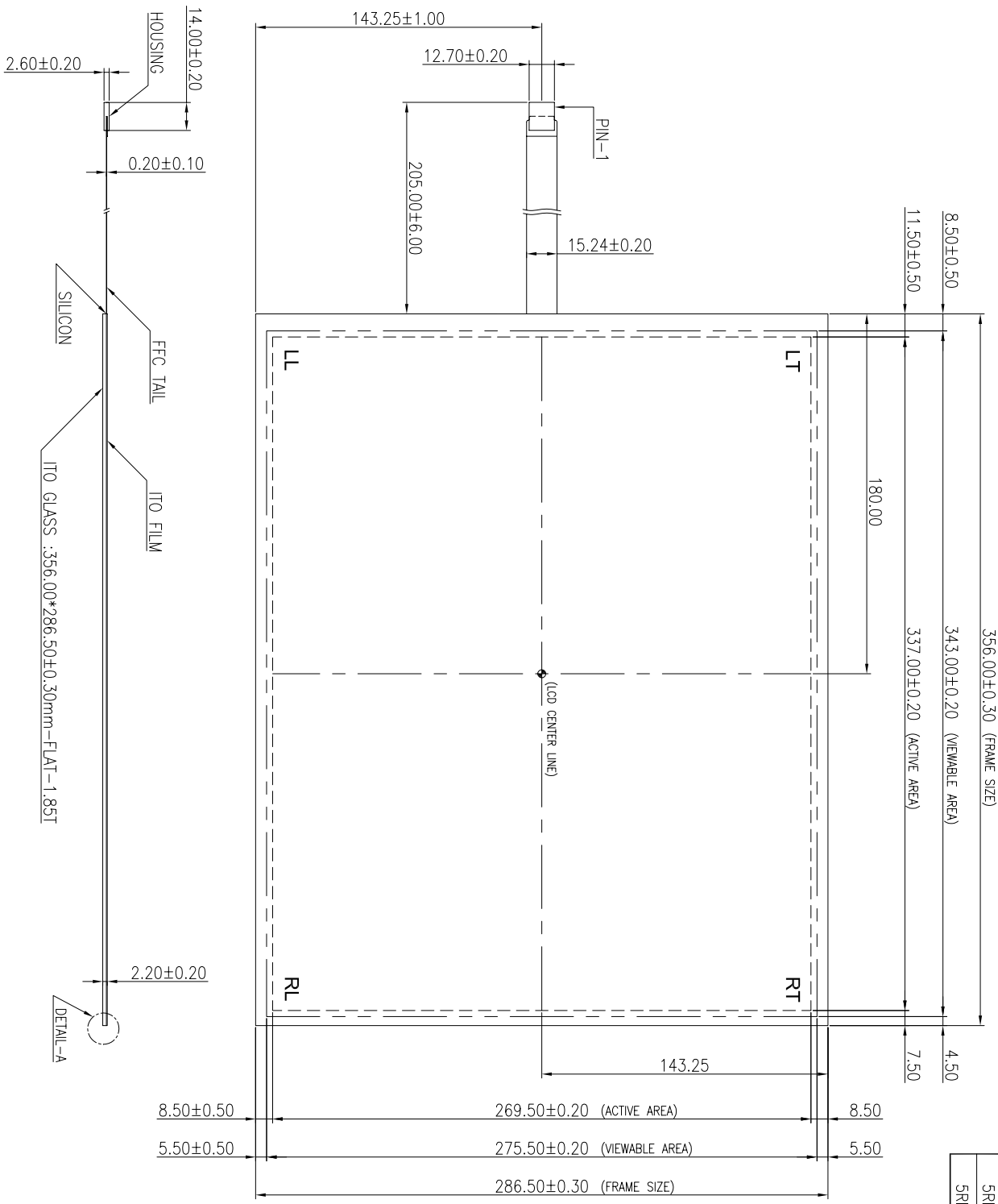
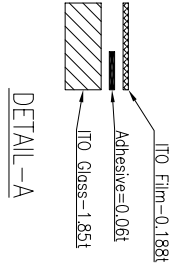
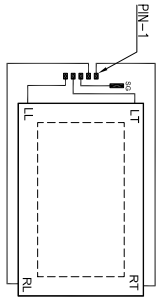
00. Specification Revision Record [規格變更記錄].....	01
00. Dimension Drawing [尺寸圖].....	02
01. Scope [範圍].....	03
02. Features [特性].....	03
03. General Specification [一般規格].....	03
04. Environmental Characteristics [環境特性].....	03
05. Optical Characteristics [光學特性].....	04
06. Electrical Characteristics [電子特性].....	04
07. Mechanical Characteristics [機械特性].....	05
08. Reliability [可靠度].....	05
09. Durability [耐久性].....	05
10. Inspection Methods [檢查方法].....	06
11. Appearance Inspection [外觀檢查].....	07
12. Attention for Mounting Condition [裝機注意事項].....	08
13. Warranty [保固].....	09
14. Appendices [附註].....	09
Appearance Specification [外觀檢查規格].....	11
15. Caution [注意事項].....	10



TOUCHSCREEN TABULATION	
PART NUMBER	TYPE
5RB004G	CLEAR
5RB004N	ANTI-GLARE



CONNECTOR PINOUT	
PIN NO.	DESIGNATION
1	RT
2	RL
3	SG
4	LT
5	LL



OB HIGGSTEC INC.

DESCRIPTION	WD-TR5-16	DATE	DEC.24,2007	APPROVED	Rev.	A
MODEL	T170S-5RB004X-0A18R0-200FH	SCALE	-/-	DESIGN	Study	Page of
PART NO.		UNIT	mm.	DRAWING	Revised	B-Page of

01. Scope

[範圍]

The specification is for Five-Wire Analog Resistive touch panel.

[此規格適用於五線-類比電阻式觸控屏幕]

02. Features

[特性]

Item [項目]		Specifications [規格]
(1)	Type [型式]	Five-Wire Analog Resistive [五線-類比電阻式]
(2)	Input Mode [操作模式]	Stylus or Finger [筆觸或手觸]
(3)	Cable [連結線]	FFC

03. General Specification

[一般規格]

Item [項目]		Specifications [規格]
(1)	Frame Size [外框尺寸]	356.00±0.30 X 286.50±0.30 mm
(2)	View Area [可視區]	343.00±0.20 X 275.50±0.20 mm
(3)	Active Area [動作區]	337.00±0.20 X 269.50±0.20 mm
(4)	Total Thickness [總厚度]	2.20±0.20 mm
(5)	Tail Length [出線長度]	205.00±6.00 mm

04. Environmental Characteristics

[環境特性]

Item [項目]		Specifications [規格]	
		Temperature [溫度]	Humidity [濕度] (Non Condensing) [未凝結]
(1)	Operation [操作]	-10°C ~ +70°C	20%RH ~ 80%RH
(2)	Storage [儲存]	-40°C ~ +80°C	10%RH ~ 85%RH

Note: All terms under 1 atmosphere.

[註:於正常的 1 大氣壓下]

05. Optical Characteristics

[光學特性]

Item [項目]		Specifications [規格]
(1)	Transparency [透光度]	80% ± 3% (Measured by BYK-Gardner)
(2)	Haze [霧化度]	8% ± 3%

06. Electrical Characteristics

[電子特性]

Item [項目]		Specifications [規格]
(1)	Loop Resistance [迴路阻抗]	X:20~500Ω, Y:20~500Ω (See Figure 6-1)
(2)	Linearity [線性]	$X \leq 1.0\%$, $Y \leq 1.0\%$ (See Figure 10-2)
(3)	Chattering [作動時間]	$\leq 15\text{ms}$
(4)	Insulation [絕緣阻抗]	$\geq 20\text{M}\Omega/25\text{V}(\text{DC})$
(5)	Endurance [耐電壓]	No acting damage at DC50V/60sec.

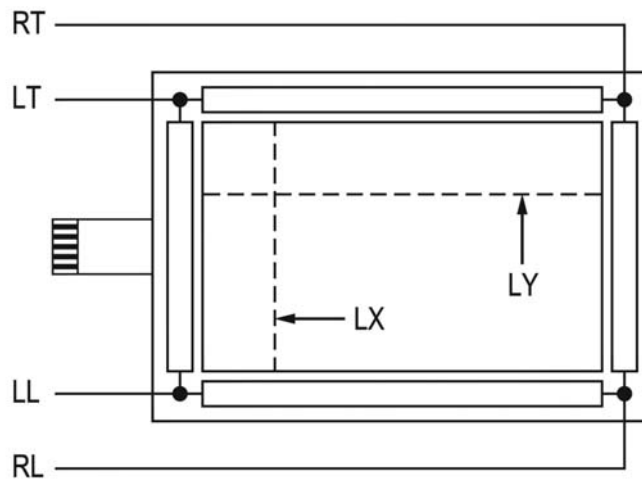


Figure 6-1

Loop Resistance X = short RT and RL , short LT and LL , measure the resistance between RT and LT
 Loop Resistance Y = short RT and LT , short RL and LL ,measure the resistance between RT and RL

07. Mechanical Characteristics
[機械特性]

Item [項目]	Specification [規格]	Condition [條件]
Operating Force [作動力]	Stylus=R0.8 [筆式=R0.8]	≤50g
Impact [撞擊]	13.0 φ DIA. Steel Ball/9g Height=30cm [13 φ /9g 鋼球 高度=30cm]	1 time, no damage [Impact at center area] [中央區域撞擊 1 次,不能破損]
Static Load [靜態承重]	500g within 10cm ² area for 30sec [500g 置於 10cm ² 內, 30 秒]	Satisfy(1) of Item 7 and (1), (2),(4) of Item 6 [符合 7 項目(1)及 6 項目(1),(2),(4)]
Hardness [硬度]	3H pencil, pressure 1N/45° [鉛筆 3H, 壓力 1N/45° (JIS K5400)]	≥3H
Peeling [剝離]	800g by vertical 90° [800g, 垂直 90°]	Satisfy (1) of Item 6 [符合 6 項目(1)]
Bending [彎折]	135° 10 times left & right [135° 角, 左右來回 10 次]	Satisfy (1) of Item 6 [符合 6 項目(1)]

08. Reliability
[可靠度]

Item [項目]	Specification [規格]	Condition [條件]
High Temperature /Humidity [高溫高濕]	70°C /90%RH, 500 hrs, allow panel stays in normal environment for 4 hrs [70°C /90%RH, 500 小時, 回常溫 4 小時後始可測試]	Reliability test may cause the film puffed yet the electric characteristic stays intact. (1), (2) of Item 5; (1), (4) of Item 6; (2) of item 6 satisfies
High temperature [高溫]	70°C /500 hrs allow panel stays in normal environment for 4 hrs [70°C /500 小時, 回常溫 4 小時後始可測試]	X≤2.0%, Y≤2.0%; Actuation force must not exceed 150g after reliability test.
Low temperature [低溫]	-40°C /500 hrs allow panel stays in normal environment for 4 hrs [-40°C /500 小時, 回常溫 4 小時後始可測試]	經由可靠度測試後, 外觀不在其規範內, 但功能性仍符合以下條件 [符合 5 項目(1)、(2)及 6 項目(1)、(4); 6 項目(2)符合 X≤2.0%, Y≤2.0%; 測試後作動力不能超過 150g]
Thermal Cycle [冷熱循環]	-40°C ~70°C [60 min./cycle] *100 cycles allow panel stays in normal environment for 4 hrs [-40°C ~70°C, 每循環 60 分鐘, 共 100 次循環, 回常溫 4 小時後始可測試]	

09. Durability
[耐久性]

Item [項目]	Specification [規格]	Condition [條件]
Knock Test [觸擊測試]	35,000,000 times [3500 萬次]	Satisfy (1), (2) of Item 5; (1), (4) of Item 6; (2) of item 6 satisfies X≤2.0%, Y≤2.0%; Actuation force must not exceed 150g after durability test. [符合 5 項目(1)、(2)及 6 項目(1)、(4); 6 項目(2)符合 X≤2.0%, Y≤2.0%; 測試後作動力不能超過 150g]

10. Inspection Methods :

[檢查方法]

(1) Linearity Condition [線性測試條件]

Step 1: short RT and RL(or short RL and LL).

Step 2: apply voltage DC 5V.

Step 3: short LT and LL (or short RT and LT).

Step 4: apply grounding.

Step 5: draw points along LX and LY at 5.0mm intervals within pattern area and detect the voltage at SG.

Step 6: measure the voltage differences between RT and LT (or RT and RL) (Fig 10-1) (Fig 10-2)

[將 RT, RL 短路(或 RL, LL 短路)並接上 5V 的直流電, 另外將 LT, LL 短路(或 RT, LT 短路)並接上接地線 0V, 以 5.0mm 的間隔, 利用手寫筆(stylus)劃直線(如圖 2 中 LX 和 LY), 並量測 SG 的電壓, 量測並計算 RT 與 LT 間的電位差(或 RT 與 RL 間的電位差)] (Fig 10-1) (Fig 10-2)

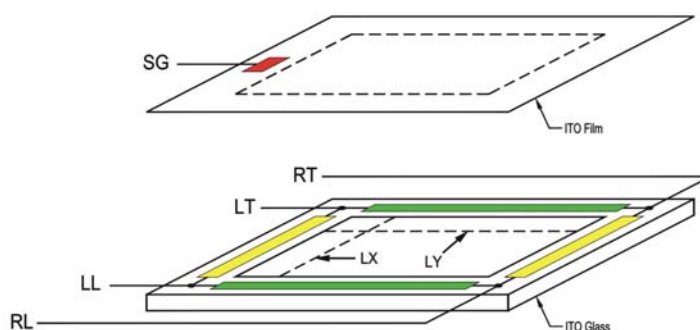


Figure 10-1

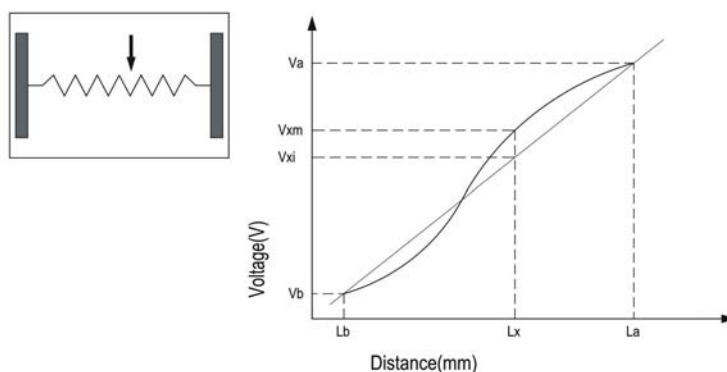


Figure 10-2

$$\text{※ Linearity: } [| V_{xm} - V_{xi} |] / (V_a - V_b) \times 100\%$$

(2) Specification [規範]

Linearity must meet the electrical characteristic specified in Item 6

[線性必須符合 6 項目的電性規範]

11. Appearance Inspection

[外觀檢查]

(1) A 17W fluorescent luminant lamp is used for appearance inspection. Detail settings are shown in (Fig 11-1) and (Fig 11-2).

[(1) 檢測始用之燈光為一盞 17W 白熾燈光，詳細的擺設方式，請參考圖(Fig11-1), (Fig11-2)]

(2) Minor impurities outside viewing area are acceptable unless their existence affect electrical functions.

[(2) 只要不影響電器功能性，可視區外之外觀瑕疵是可以被允許的]

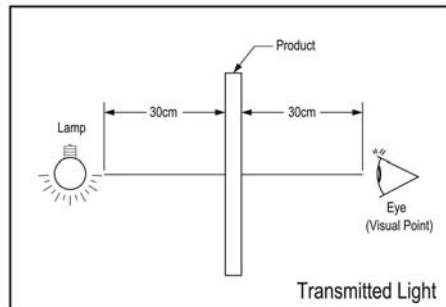


Figure 11-1

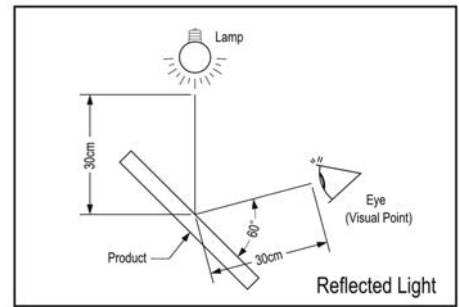


Figure 11-2

(3) Glass Flaw [玻璃瑕疵]

Item [項目]	Picture [圖示]	Specification [規格]
Corner Flaw [角瑕疵]		$X \leq 3.0\text{mm}$ $Y \leq 3.0\text{mm}$ $Z \leq T$
Edge Flaw [邊緣瑕疵]		$X \leq 3.0\text{mm}$ $Y \leq 3.0\text{mm}$ $Z \leq T$
Progressive Flaw [裂縫瑕疵]		Not allowed [不允許]

Note: T=Glass thickness

(4) Please refer to Appendix I : Appearance Specification.

[(4) 外觀規格請詳見(附註 1)]

12. Attention of Mounting Condition

[裝機注意事項]

(1) The gasket support of touch panel must allocate outside of Viewable Area. Reserve enough clearance between panel surface and enclosure for normal panel operation.

To avoid pressing error, please retain enough space between surface panel and Bezel.

[請將固定觸控屏用的支撐體(support)設計於可視區(Viewable area)之外。為避免不小心碰到觸控屏而產生動作，請預留空間於面板與機體外殼之間]

(2) Bezel opening must not touch Viewable Area, Bezel opening must be designed between Viewable Area and Active Area.

[外殼內緣(Bezel opening)應設計於可視區及動作區之間，並且不得碰到可視區]

(3) We recommend elastic material support.

[建議使用彈性物質製成的支撐體]

(4) Due to the conductive characteristic of the panel backside, prevent metal contact after mounting.

[觸控屏面板背面具導電性質，