

CIRCUIT DIAGRAM

NOTE:

- 1.Genreal tolerances $\pm 0.3\text{mm}$
- 2.Solder thickness : 0.10mm

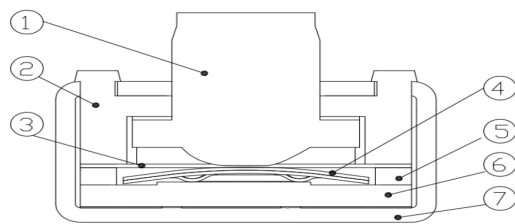
SPECIFICATIONS:

- 1.Rating : $20\text{mA}, \text{DC}12\text{V Max}$
- 2.Contact Resistance : $100\text{m}\Omega \text{ Max.}$
- 3.Insulation Resistance : $\text{DC } 100\text{V}-100\text{M}\Omega \text{ Min}$
- 4.Dielectric Strength : $\text{AC } 250\text{V For } 1\text{minute}$
- 5.Operating Force(OF): $160\pm 50\text{gf}$
- 6.Life: $200,000 \text{ CYCLES Min.}$
- 7.Travel : $0.2\pm 0.1\text{mm}$

△			
△			
△			
△			
△	A1	REL.DWG	17'09.28
△	ZONE	REV.	DESCRIPTION
		DATE.	APPD.

APPD:	QTY:		PART NAME:
CHKD:	SCALE: 5:1		TACT SWITCH
DR: Tai	REV: A	UNITS: mm	DWG NO:
DESIGN: -tai	17'09.28	<input type="checkbox"/> STCK <input type="checkbox"/> QR	<input type="checkbox"/> STCK <input type="checkbox"/> QR
		MAT'L:	
		FINISH:	

ITEM	DESC	Q'TY	METERIALS	TREATMENT	REMARK
1	STEM	1	HIGH - TEMP THERMOPLASTIC NYLON UL94V - 0	MOLDED BLACK	—
2	FRAME	1	HIGH - TEMP THERMOPLASTIC NYLON UL94V - 0	MOLDED BLACK	—
3	SEALED	1	KAPTON	NONE	—
4	CONTACT	2	STAINLESS STEEL	WITH SILVER PLATING	—
5	SPACER	1	PI	NONE	—
6	BASE	1	NPG-R	WITH TIN /GOLD PLATING	—
7	COVER	1	BRASS	WITH TIN PLATING	—



STCK Q R

Package :
R = Tape & Reel

Soldering :
Q = Halogen Free

Operating Force :
2 = 160gf

A	DWG.REL	
REV.	ECO. NO.	APPD.

TITLE :	APPD. :
TACT SWITCH	CHKD. :
PRROD. NO. : STCK <input type="checkbox"/> QR	PR. : 戴嘉宏
FILE NO. : E-Q-CT110	REV. : A
	SHEET : 1/1

STCK□QR Specification

File No. : E-Q-AT99
 REV. : A1
 Page : 1 / 6

1. General (一般事項):

1.1 Operating Temperature Range (使用之溫度範圍): -40°C ~ +85°C

1.2 Storage Temperature Range (儲存之溫度範圍): -40°C ~ +85°C

1.3 Test conditions (測試狀態)

Unless otherwise specified, the test and measurements shall be carried out as follows.

除非另有說明，測試與測量應如下條件進行。

Ambient temperature (環境溫度) : 5 ~ 35 °C

Relative humidity (相對溼度) : 45 ~ 85 %

Air pressure (氣壓) : 86 ~ 106 kPa

However, if doubt arises on the decision based on the measured values under the above-mentioned conditions, the following conditions shall be employed.

無論如何，如果上述條件量測時有疑慮時，應在下列條件使用

Ambient temperature (環境溫度) : 20± 2°C

Relative humidity (相對溼度) : 65±5 %

Air pressure (氣壓) : 86 ~ 106 kPa

2. Rating (額定負載):

20mA, 12V DC (Max.)

3. Type of Actuation: Tactile feedback. (類型：觸動回復式)

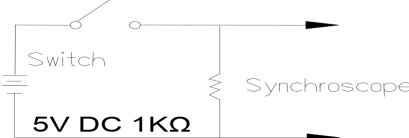
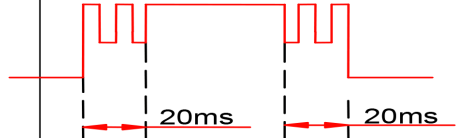
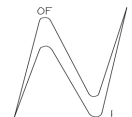
4. IP Code : IP _7

5. Test Sequence (測試項目) :

	Item	Description	Test Conditions	Requirements
Appearance 外觀	1	Visual Examination 目視檢查	By visual examination check without any out pressure & testing. 在未施加任何外力及試驗前，以目視方式檢測	There shall be no defects that affect the serviceability of the product. 產品的外觀不能有影響產品功能之不良缺點
Electrical Performance 電氣特性	2	Contact Resistance 接觸阻抗	Applying a static load 1.5-2 times the operating force to the center of the stem, measurements shall be made with a 1 kHz small current contact resistance meter 用一作動力 1.5-2 倍力量的靜態荷重，實際按壓觸鈕的中央處，並以 1KHz 規格的微電流阻抗計測量接觸阻抗值	100mΩ Max. (initial)
	3	Insulation Resistance 絕緣阻抗	100V DC, 1 minute ± 5 sec. 直流電壓 100V, 1 分鐘±5 秒	100MΩ Min.

STCK□QR Specification

File No. : E-Q-AT99
 REV. : A1
 Page : 2 / 6

Electrical Performance 電氣特性	4	Withstand Voltage 耐電壓	250V AC (50Hz or 60 Hz 2mA) shall be applied between all the adjacent terminals and between the terminal and the frame for 1 minute. 以 250V 的交流電(50Hz 或 60Hz 2mA), 施於兩相鄰端子與底座間, 並保持 1 分鐘之加壓狀態後, 檢查是否能耐該值	No dielectric breakdown shall be occurred 成品不得有故障, 跳火及絕緣體破壞等不良現象
	5	Bounce 彈跳	3 to 4 operations at a rate of 1 cycles per second 每秒 3~4 次的速度為一循環, 觀察示波器上之顯示 	20 m seconds Max. 不得高於 20 毫秒 
Mechanical Performance 機械特性	6	Operation Force 作動力	Applied in the direction of operation. 測定觸鈕操作方向之力量 	160±50gf
	7	Stroke 作動量	Placing the switch such that the direction of switch operation is vertical and then gradually increasing the load applied to the center of the stem to a stop shall be measured 將成品放置定位後, 以一垂直力慢慢施壓在按鈕的中央處, 使按鈕從開始按壓到無法按壓停止, 測量實際按壓過程的距離	0.2±0.10mm
	8	Control strength 操作部強度	The static load of 3kgf shall be applied in the operating direction of the control unit for 15 seconds. 以 3kgf 的靜態荷重施於推鈕上方, 操作時間 15 秒	As shown in item 2~7 受測後之成品仍需合述 2~7 測試項規格之要求
	9	Solder Heat Resistance 抗錫熱	■ SMT Type STCK Series (5/6) (PCB 的厚度為 1.2mm)	1) Shall be free from pronounced backlash and falling-off or breakage terminals 2) As shown in item 2~7 1) 浸錫後, 端子不得有明顯的焦黑鍍層剝落或斷裂現象 2) 受測後的成品仍需符合前述 2~7 測試項規格的要求

STCK□QR Specification

File No. : E-Q-AT99
 REV. : A1
 Page : 3 / 6

Mechanical Performance 機械特性	10	<p>Vibration 振動測試</p>	<p>Shall be vibrated in accordance with Method 201A of MIL-STD-202F</p> <p>1) Swing distance=1.5mm 2)Frequency: 10-55-10 Hz 1 minute/cycle. 3)Direction: 3 vertical directions including the direction of operation. 4)Test Time: 2 hours each direction.</p> <p>請依照 MIL-STD-202F, 201A 所規定之方法做測試</p> <p>1)振幅=1.5mm 2)頻率:10-55-10Hz 的頻率循環測試, 週期 1 分鐘 3)振動方向:以 X, Y, Z 三軸向, 包含推鈕操作之方向 4)測試時間:每一方向 2 小時</p>	<p>As shown in item 2~7 受測後之成品仍需符合前述 2~7 測試項規格的要求</p>
	11	<p>Shock 衝擊試驗</p>	<p>Shall be shocked in accordance with Method 213B condition A of MIL-STD-202F</p> <p>1)Acceleration: 50G. 2)Action Time : 11 ± 1 m sec. 3)Testing Direction: 6 sides. 4)Test cycle : 3 times in each direction</p> <p>請依照 MIL-STD-202F, 213B 條件 A 所規定之方法做測試</p> <p>1)加速度 : 50G 2)測定時間 : 11±1 毫秒 3)受測方向 : 以成品全周, 三軸六個方向做測試 4)受測次數 : 每一方向 3 次</p>	<p>As shown in item 2~7 受測後之成品仍需符合前述 2~7 測試項規格的要求</p>
Durability 耐久性	12	<p>Life Test 壽命測試</p>	<p>Measurements shall be made following the test forth below:</p> <p>1)5mA,5VDC resistive load 2)Rate of Operation: 2 operation per second 3)Applying a static load the operating force to the center of the stem in the direction of operation 4)Cycle of Operation: 200,000 次</p> <p>測試時需按照下列所設定之情況:</p> <p>1)施以 5 mA, 5VDC 之直流電 2)測定速度:2 次/秒 3)測定時需於開關操作方向以 OF 上限之靜態荷重施於按鈕中央處 4)壽測次數: 200,000 次</p>	<p>1)As shown in item 4,7 2)Operating force:±30% of initial force 3)Contact Resistance: 1Ω Max. 4)Insulation Resistance: 10MΩ Min. 5)Bounce: 30 seconds Max.</p> <p>1)受測後的成品仍需符合 4, 7 測試項規格的要求 2)測試後, 作動力之變化需為初始值±30% 3)測試後的接觸阻抗值不得高於 1Ω 4)受測後的絕緣阻抗值不得低於 10MΩ 5)受測後的回彈反應時間須於 30 毫秒內</p>

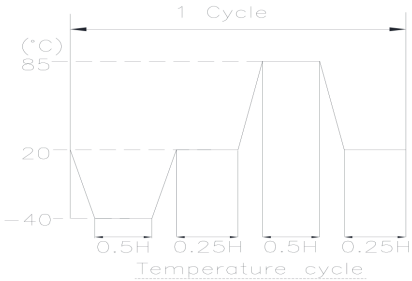
STCK□QR Specification

File No. : E-Q-AT99
 REV. : A1
 Page : 4 / 6

Environmental Endurance 耐候性	13	Cold Resistance 耐寒性	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made : 1)Temperature : -40°C±2°C. 2)Time: 96 hours. 請依照下列所設定的條件測試後,並於常溫常濕中放置 1 小時後測定 1)受測溫度:-40±2°C 2)受測時間:96 小時	As shown in item 2~7 受測後之成品仍需合述 2~7 測試項規格之要求
	14	Heat Resistance 耐熱性	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made : 1)Temperature : 85°C±2°C 2)Time: 96 hours 請依照下列所設定的條件測試後,並於常溫常濕中放置 1 小時後測定 1)受測溫度:85±2°C 2)受測時間:96 小時	As shown in item 2~7 受測後之成品仍需合述 2~7 測試項規格之要求
	15	Humidity Resistance 耐濕性	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made : 1)Temperature : 60°C±2°C 2)Relative Humidity :90~95% 3)Time: 96hour 請依照下列所設定的條件測試後,於常溫常濕中放置 1 小時後測定 1)受測溫度:60±2°C 2)相對濕度:90-95% 3)受測時間:96 小時	1)Contact Resistance: 1Ω Max 2)Insulation Resistance: 10MΩ Min 3)As shown in item 4~7 1)測試後的接觸阻抗值不得高於 1Ω 2)受測後的絕緣阻抗值不得低於 10MΩ 3)受測後的成品仍需符合 4~7 測試項規格的要求

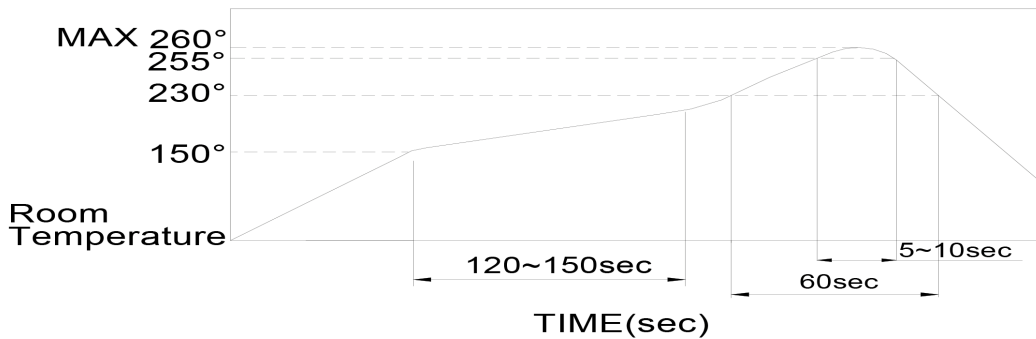
STCK□QR Specification

File No. : E-Q-AT99
 REV. : A1
 Page : 5 / 6

16	Change of temperature 溫度循環	After 10 cycles of following conditions, the switch shall be allowed to stand under normal room temperature and humidity conditions for 1 hr, and measurement shall be made within, 1 hr after that. Water drops shall be removed. 1) 測試週期：10 個循環 2) 標準條件試驗後：1 小時 3) 1 個循環： 	As shown in item 2~7 受測後之成品仍需合述 2~7 測試 項規格之要求
----	-------------------------------	--	---

6. Soldering Conditions (銲錫條件):

● SMT



- The condition mentioned above is the temperature on the Cu foil of the P.C.B surface. There are cases where board' s temperature greatly differs from switches surface temperature depending on board' s material, size, thickness, etc. Care, therefore, should be used not to allow switch' s surface temperature to exceed 260°C

上述提到的情況, 是 PCB 上銅箔之溫度。有一些情形是這 PCB 的溫度和開關表面之溫度會有很大的不同, 這和 PCB 材質. 大小. 厚度等有很大的關係, 因此要小心不要讓開關表面的溫度超過 260°C

● Manual Soldering (手工銲錫)

Soldering Temperature (銲錫溫度)	Max. 350°C
Continuous Soldering Time (連續銲錫時間)	Max. 3 seconds

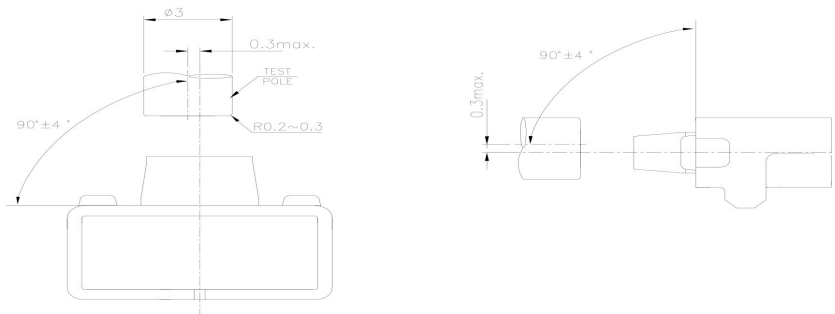
Use a soldering iron 20W max. (使用烙鐵最大 20 瓦)

STCK□QR Specification

File No. : E-Q-AT99
REV. : A1
Page : 6 / 6

■ Precautions in Handling(處理時注意事項):

1. Care should be exercised so that flux from the upper part of the printed circuit board does not adhere to the switch.
在 P. C. B 板面上之助錫劑，不要黏到開關本身
2. Recommended operating conditions(建議之操作條件)



■ Notes on storage conditions(儲存條件的注意事項):

Do not store in the following environment or it may affect product's function and solderability:

當物品被儲存於以下的情形與條件它可能會影響產品功能變差及吃錫性等..

應避免儲存於下列情形

1. temperature of -10 (max)、 +40 (min) °C & humidity at 85% (min)
攝氏溫度低於-10 °C 或高於 40°C，且濕度高於 85%之環境
2. environment with corrosive gas
空氣中含有腐蝕性氣體
3. storage over 6 months
長期儲存超過六個月
4. place of direct sunlight
陽光直接照射的地方

*Store with proper packaging conditions and to avoid loading heavy force.

儲存時保持包裝完整，以免外應力施加於產品

*We suggest to use the products within 3 months or at least 6 months.

收到產品後請盡快使用，建議三個月內使用完畢，若須存放請勿超過六個月

*After opening the package, the rest products must be stored in the appropriate moisture-proof & airtight environment

剩餘產品若已開封，請將產品儲存於防潮、密閉的環境中