

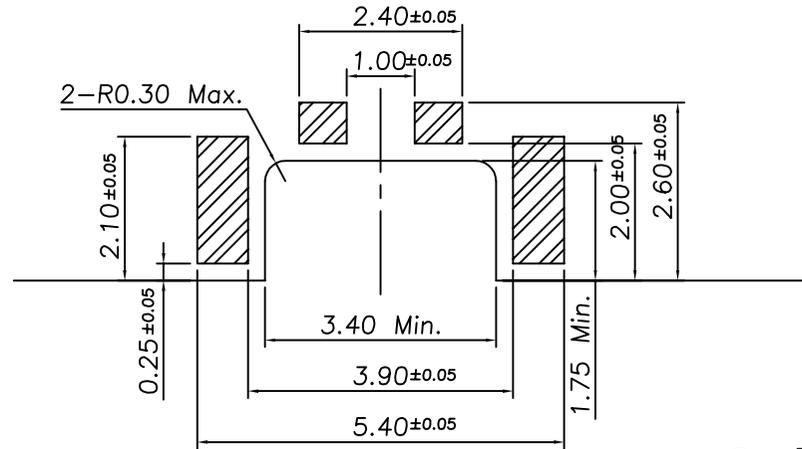
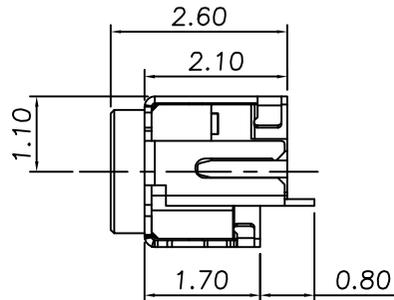
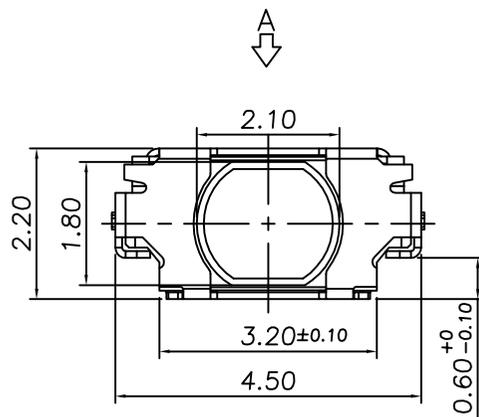
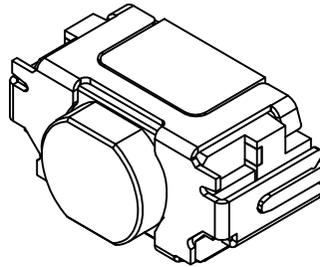
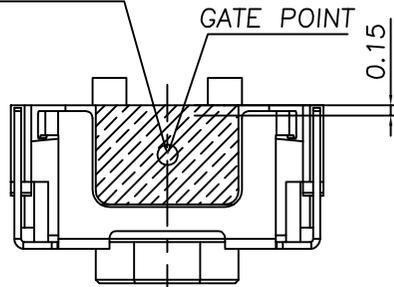
NOTE:
 1. ALL DIMENSIONS ARE IN MILLIMETERS
 2. GENREAL TOLERANCES : $\pm 0.2\text{mm}$.

參考圖面

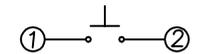
Specifications:

1. Rating : 50mA,DC 12V
2. Contact resistance : 500m Ω Max.
3. Insulation resistance : DC 100V-100M Ω Min.
4. Operating force : 160 \pm 50gf
5. Operating life : 600,000 cycles Min
6. Operating temperature : -30 $^{\circ}$ ~85 $^{\circ}$ C
7. Storage temperature : -40 $^{\circ}$ ~90 $^{\circ}$ C

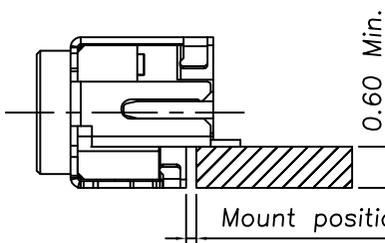
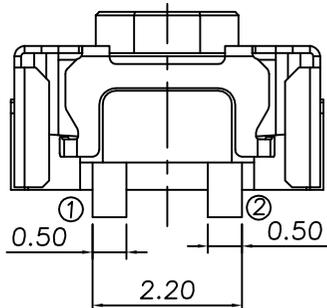
Absorded by nozzle



P.C.B Layout
 (view from the direction A)



Circuit Daigram



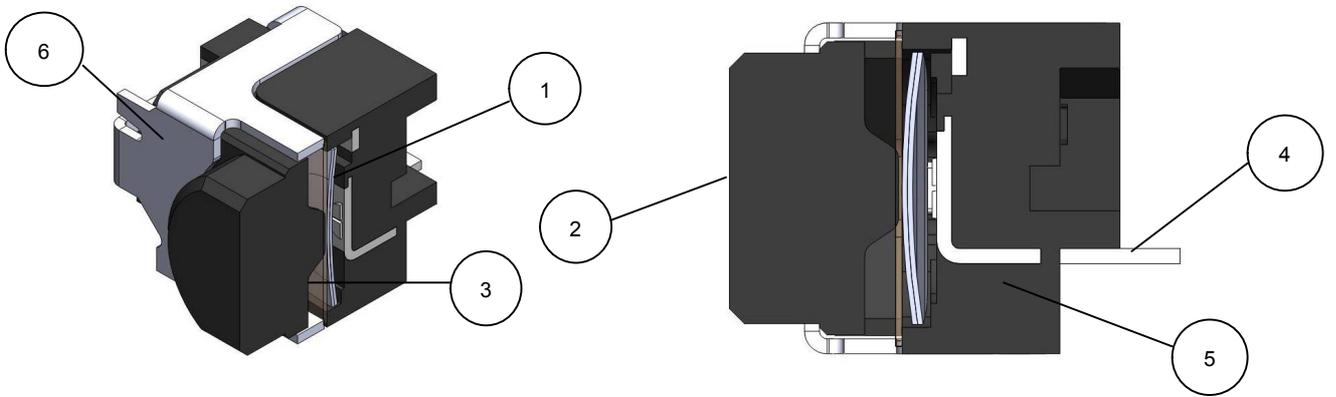
Mount position : within 0.15mm from P.C.B edge

ZONE	REV.	DESCRIPTION.	DATE.	APPD.
A1		REL.DWG	14'10.08	

APPD:	Q'TY:	圓達實業股份有限公司 DIPTRONICS MANUFACTURING INC.		PART NAME:
CHKD:	SCALE: 1:1			TACT SWITCH
DR: Will	REV: A1	UNITS: mm	PART NO: TCH	MAT'L:
DESIGN: 14'10.08	Will			FINISH:

DWG NO:

ITEM	DESC	Q'TY	METERIALS	TREATMENT	REMARK
1	Contact	2	STAINLESS STEEL	WITH SILVER CLADDING	-
2	STEM	1	HIGH-TEMP THERMOPLASTIC LCP	-	-
3	TAPE	1	KAPTON	NONE	-
4	TERMINAL	1	PHOSPHORBRONZE	WITH SILVER PLATING	-
5	BASE	1	HIGH-TEMP THERMOPLASTIC PA9T	MOLDED BLACK	-
6	COVER	1	STAINLESS STEEL	WITH GOLD FLASH	-



T C H □ □ Q R

— R=Tape & Reel

— Q= Halogen Free

— Operation Force:
2=160gf
3=220gf

□=Without Post

C= With Post

— Right Angle Tact Switch

A	DWG.REL	林嚴政
REV.	ECO. NO.	APPD.

TITLE	APPD. : 林嚴政
TACTILE SWITCH TYPE	CHKD. : 潘淑媛
PRROD. NO. T C H □ □ Q R	PR. : PATTY 11.26'14
FILE NO. : E-Q-CT91	REV. : A SHEET : 1/1



1. Style

This specification describes "TACTILE SWITCH", mainly used as signal switch of electric devices, with the general requirements of mechanical and electrical characteristic.

1.1 Operating Temperature Range : -30 °C ~+85°C

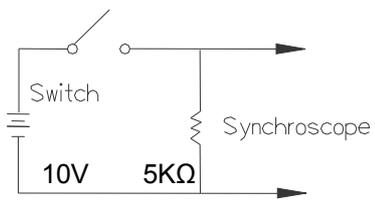
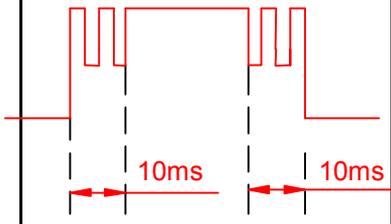
1.2 Storage Temperature Range : -40°C ~+90°C

1.3 The shelf life of product is within 6 months.

2. Current Range: 50mA, 12V DC

3. Type of Actuation: Tactile Feedback

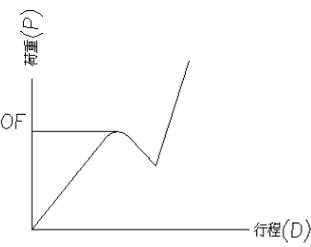
4. Test Sequence:

	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
APPEARANCE	1	Visual Examination	By visual examination check without any out pressure & testing	There shall be no defects that affect the serviceability of the product.
ELECTRIC PERFORMANCE	2	Contact Resistance	Applying a static load twice the actuating force to actuator. Measurements shall be made with a 1 kHz small current contact resistance meter.(20mV 50mA max)	500 mΩ Max.
	3	Insulation Resistance	Measurements shall be made following application of 100 V DC potential across terminals and across terminals and frame.	100MΩ Min.
	4	Dielectric Withstanding Voltage	100 V AC(50Hz or 60Hz) shall be applied across terminals and across terminals and frame for 1 minute.	There shall be no breakdown or flashover
	5	Bounce	Lightly striking the actuator at a rate encountered 3 to 4 operations per sec, bounce shall be tested at "ON" and "OFF" 	10m Seconds Max. 



TCH□□QR SPECIFICATION

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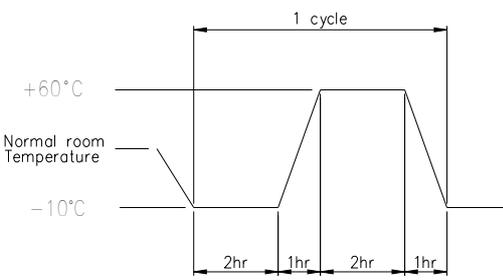
MECHANICAL PERFORMANCE	6	Operating Force	Applied in the direction of operation. 	OF	
				TCH2QR	TCH3QR
				160±50gf	220±50gf
	7	Stroke	Measure the actual operating distance from open to contact position by on straight force in the middle of actuator.	0.15±0.1mm	
	8	Max. actuation force	Placing the switch such that the direction of switch operation is vertical, a static load of (3Kgf) for 15 seconds.	①As shown in item 3~7	
9	Vibration	Shall be vibrated in accordance with Method MIL-STD-202F,201A ①Frequency: 10-55-10Hz in 1-min/cycle. ②Direction of oscillation: Three mutually perpendicular directions, including the directions of stem travel. ③Test time: 2 hours each direction ④Swing distance :1.5mm	①As shown in item 6、7 ②Contact Resistance: 500mΩ Max.		
10	Shock	① Acceleration:80G ② Testing Direction: 6 sides ③ Test Cycle: 3 times in each direction	①As shown in item 6~7 ② Contact Resistance: 500mΩ Max.		

11	Operating Life	Measurements shall be made following the test forth below : ①5mA,5V DC resistive load ② Operating frequency: 2~3times/s ③Applying a static load the operating force to the center of the stem in the direction of operation Static Load=OF Max. ④Cycle of Operation : 600,000 cycles Min	①As shown in item 3~7 ②Operating force:±30% of initial force ③ Contact Resistance: 1Ω Max	
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TCH□□QR SPECIFICATION

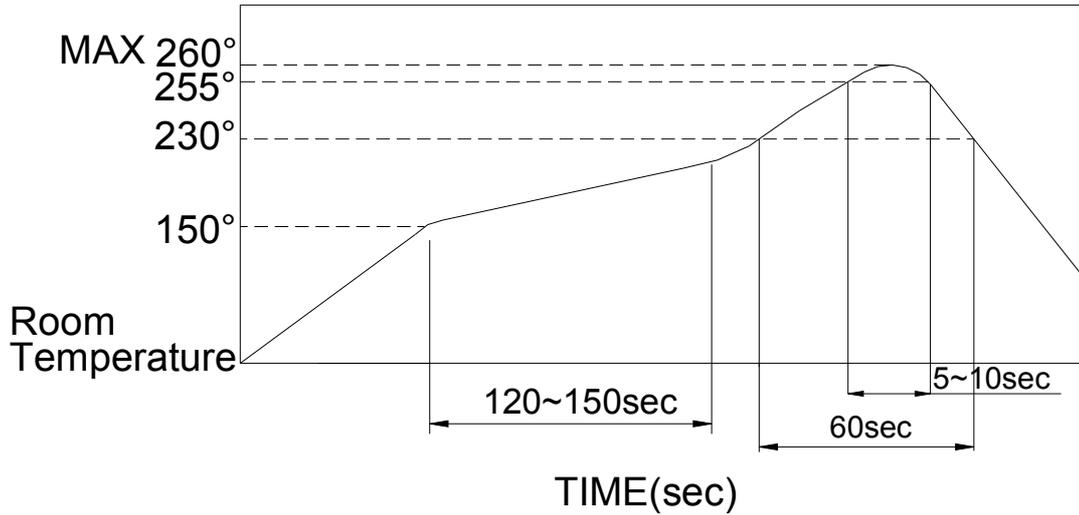
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12	Resistance Low Temperature	<p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before the measurements are made:</p> <ul style="list-style-type: none"> ① Temperature: $-40 \pm 2^{\circ}\text{C}$ ② Time: 96 hours ③ Can not have water 	<ul style="list-style-type: none"> ① As shown in item 2~7 ② Contact Resistance: 500Ω Max
13	Heat Resistance	<p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before the measurements are made:</p> <ul style="list-style-type: none"> ① Temperature: $90 \pm 2^{\circ}\text{C}$ ② Time: 96 hours 	<ul style="list-style-type: none"> ① As shown in item 2~7 ② Contact Resistance: 500Ω Max
14	Humidity Resistance	<p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before the measurements are made:</p> <ul style="list-style-type: none"> ① Temperature: $60 \pm 2^{\circ}\text{C}$ ② Relative Humidity: 90~95% ③ Time: 96 hours 	<ul style="list-style-type: none"> ① As shown in item 2~7 ② Contact Resistance: 500Ω Max
15	Change of Temperature	<p>1) Test cycles: 5 cycles 2) Standard conditions after test: 1 hour</p> 	<ul style="list-style-type: none"> ① As shown in item 2~7 ② Mechanical properties should remain normal



5. REFLOW SOLDERING CONDITIONS:

■ Condition for Reflow Soldering S.M.T Series



- The condition mentioned above is the temperature on the Cu foil of the PCB surface. There are cases where board's temperature greatly differs from switch's surface be used not to allow switch's surface temperature to exceed 260°C.

■ Manual Soldering

Soldering Temperature	Max. 350°C
Continuous Soldering Time	Max. 3 seconds

■ Notes on storage conditions:

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

1. temperature of -10 (max) ~ +40 (min) °C & humidity at 85% (min)
2. environment with corrosive gas
3. storage over 6 months
4. place of direct sunlight



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Store with proper packaging conditions and to avoid loading heavy force

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

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