

DATA SHEET

SUNGMUN CODE : STP-1230A

DESCRIPTION : TACT SWITCH

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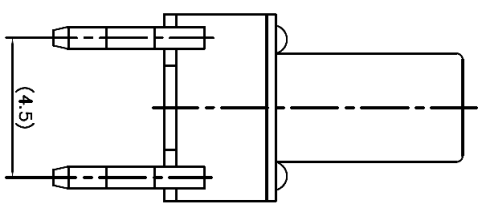
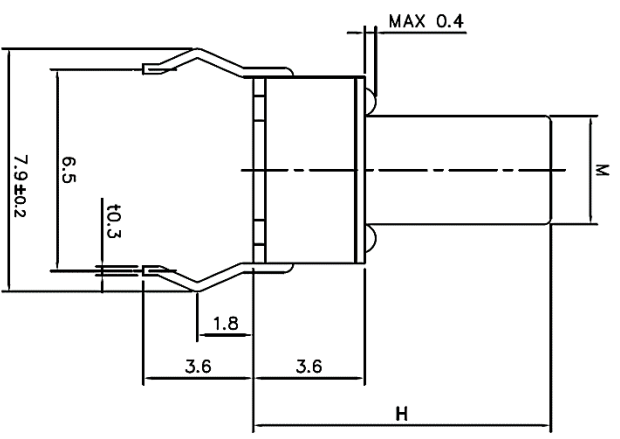
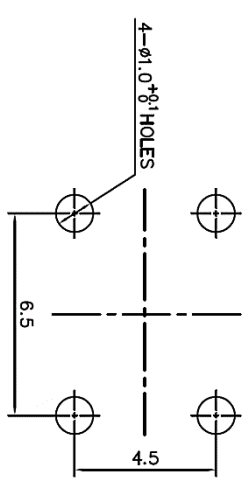
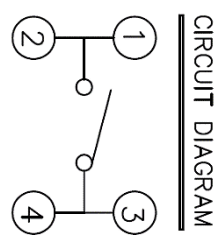
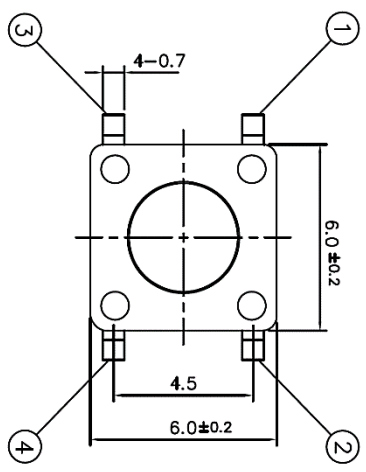
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MRK.	DATE	REVISION	SIGN
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SPECIFICATION

1. RATING : DC 12V 50mA
2. TRAVEL : 0.25 ±0.1mm
3. CONTACT RESISTANCE : 100mΩ MAX.
4. BOUNCE : 10m SEC MAX.
5. LIFE CYCLE : 80,000 CYCLE
6. OPERATING FORCE : 160±50gf

Model NO.	STP 1230	STP 1230A	STP 1230B	STP 1230C	STP 1230D
H	4.3	5.0	9.5	8.0	13.0
M	φ3.5	φ3.5	φ3.5	φ3.5	φ3.5

01	-	DESCRIPTION	MATERIAL	-	1	-
DRAW/DESIGNED	CHECKED	APPROVED	G.TOL	COLOR/FINISH	Q.TV	VENDOR
Y.N.JEON	S.M.PARK	J.P.ROH	±0.1			
2018-10-23			UNIT	MODEL		
			mm	STP-1230A		
SUNGJUN ELECTRONICS CO.,LTD			SCALE	STP-1230A-S-01		
			4:1			
			SIZE			
			A4			
			DRAW NO.			
			STP-1230A-S-01			
						1/1

TACT SWITCH

1. Description:

This specification covers the requirements for single key switches which have no key top(Tact switches mechanical contact).

1-1 Operating Temperature Range : -40°C ~ +70°C (normal humidity, normal press)

1-2 Storage Temperature Range : -40°C ~ +80°C

1-3 Test Conditions :

Tests and measurements shall be made in the following standard conditions unless otherwise specified :

Normal temperature (temperature 5 to 35°C)

Normal humidity (relative humidity 45 to 85%)

Normal pressure (pressure 860 to 1,060 mbars)

In case any question arises from the judgment made, tests shall be conducted in the following conditions:

Temperature (20±2°C)

Relative humidity (65±5%)

Pressure (860 to 1,060 mbars)

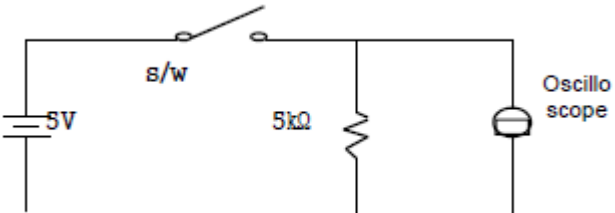
2. Rating:

2-1 Maximum Rating : 50 mA, DC 12V

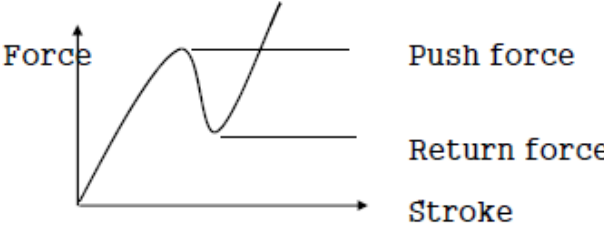
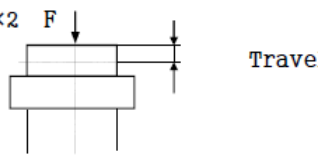
3. Type of Actuation : Push – ON Type

4. Contact Arrangement : 1 poles 1 throws (SPST)

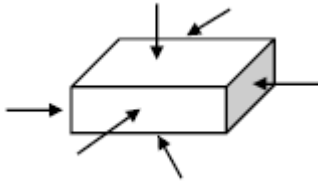
5. Electrical Characteristics

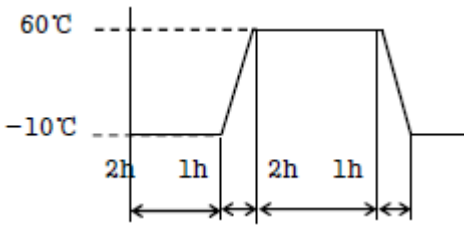
ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
5-1	Visual Examination	By visual examination check without any out pressure & testing.	There shall be no defects that affect the serviceability of the product.
5-2	Contact Resistance	① Applying static load twice the actuating force to the center of the stem. ② Measurements shall be made with a 1kHz shall current contact resistance meter.	100mΩ max.
5-3	Insulation Resistance	100V DC, 1minute ±5seconds	100 MΩ min.
5-4	Dielectric withstanding Voltage	250V AC(50Hz or 60Hz)shall be applied between all the adjacent terminal and between the terminal and the frame for 1 minute.	There shall be no breakdown or flashover.
5-5	BOUNCE	Lightly striking the center of the stem at a rate encountered in normal use (3 to 4 operations per sec), Bounce shall be tested when "ON" and "OFF". 	10ms max.

6. Mechanical Characteristics

ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
6-1	Operation Force	Push by recommended operating condition.  <p>The graph shows Force on the vertical axis and Stroke on the horizontal axis. A curve rises to a peak labeled 'Push force', then drops to a lower level labeled 'Return force', and finally rises again.</p>	Refer to the above drawing
6-2	Travel	Push by recommended operating condition. $F = (\text{Operation force}) \times 2$  <p>The diagram shows a cross-section of a tact switch stem. A downward arrow labeled 'F' indicates the force applied to the top. A vertical double-headed arrow indicates the 'Travel' distance.</p>	0.25 ± 0.1 mm
6-3	Stem Strength	The maximum force to withstand a pull applied opposite to the direction of stem operation shall be measured.	0.5 kgf min
6-4	Stop Strength	A static load of 3 kgf shall be applied in the direction of stem operation for a period of 60 seconds.	There shall be no sign of damage mechanically and electrically.
6-5	Operation Life	Measurements shall be made following the test set forth below: 1) 50mA, 12V DC resistive load 2) Rate of operation: 2~3 cycles/ sec 3) Step of operation: See outside drawing	1)As shown in item 5-3, 5-4, 6-2 2)Contact Resistance: 200mΩ max 3)Bounce : 20m sec max 4)Actuating force : $\pm 30\%$ initial force

7. Environmental Characteristics

ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
7-1	Moisture Resistance	<p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements. Are made :</p> <p>1) Temperature : $60 \pm 2^{\circ}\text{C}$ 2) Relative humidity : 90 to 95% 3) Time : 96 hours</p> <p>Water drops shall be removed.</p>	<p>1)As shown in item 5-3, 5-4, 5-5, 6-1, 6-2 2)Contact Resistance: 200mΩ max</p>
7-2	Resistance Low Temperature	<p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made:</p> <p>1)Temperature: $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 2)Time: 96 hours</p> <p>Water drops shall be removed.</p>	<p>1)As shown in item 5-3, 5-4, 5-5, 6-1, 6-2 2)Contact Resistance: 200mΩ max</p>
7-3	Resistance High Temperature	<p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made:</p> <p>1)Temperature: $80^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 2)Time: 96 hours</p>	<p>1)As shown in item 5-3, 5-4, 5-5, 6-1, 6-2 2)Contact Resistance: 200mΩ max</p>
7-4	Impact Shock Resistance	<p>Measurements shall be made following the test set forth below :</p> <p>1) Acceleration : 80G 2) Cycles of test : 3 cycles each in 6 directions, for a total of 18 cycles.</p> <div style="text-align: center;">  </div>	<p>Item 5 Item 6-1, 6-2</p>

ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
7-5	Change of Temperature	<p>Following ten cycles of high temperature test. The sample shall be placed in normal temperature and humidity conditions for one hour before measurements are made. During this test, water drops shall be removed.</p>  <p style="text-align: center;">Cycling : 1 cycle</p>	<p>1)As shown in item 5-3, 5-4, 5-5, 6-1, 6-2</p> <p>2)Contact Resistance: 200mΩ max</p>
7-6	Vibration Resistance	<p>Measurements shall be made following the test set forth below :</p> <ol style="list-style-type: none"> 1) Range of oscillation : 10 to 55Hz 2) Amplitude, peak to peak : 1.5mm 3) Cycle of sweep : 10-55-10Hz in a minute. 4) Mode of sweep : Logarithmically seep or uniform sweep. 5) Direction of oscillation : Three mutually perpendicular direction, including the direction of stem travel. 6) 2 hours each for a total of 6 hours. 	<p>Item 5 Item 6-1, 6-2</p>

8. This item is "RoHS" Compliant

9. Manual Soldering Conditions:

9-1 Temperature : 350±5°C

9-2 Time : 3 sec max

10. Soldering

- 10-1 Preheat temperature : 110°C max. (Environmental temperature of soldering surface of P.W.B)
- 10-2 Preheat time : 60 sec max.
- 10-3 Area of flux : 1/2 max. of P.W.B thickness
- 10-4 Temperature of solder : 255°C max.
- 10-5 Time of immersion : Within 5 sec.
- 10-6 Soldering number : Within 2 time (But should bring down heat of the first soldering)
- 10-7 Printed wiring board : Single sided copper-clad laminates.
- 10-8 After switches were soldered, please be careful not to clean switches with solvent.
- 10-9 In the case of using soldering iron, soldering conditions shall be 280°C max. and 3 sec max.
- 10-10 After switches were soldered, please be careful not to load the knobs of switches.