DATA SHEET

SUNGMUN CODE : **STP-1234 SERIES**

DESCRIPTION : **TACT SWITCH**

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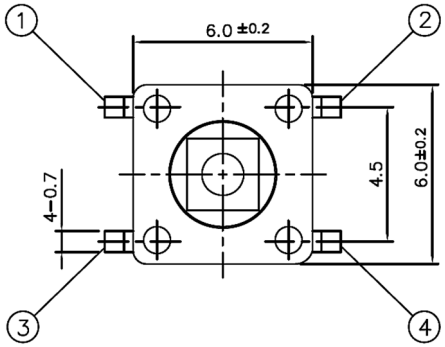
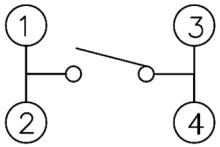
SUNGMUN
ELECTRONICS

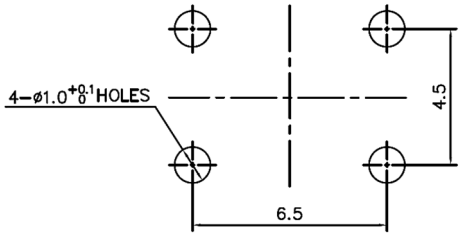
MRK.	DATE	REVISION	SIGN
△			

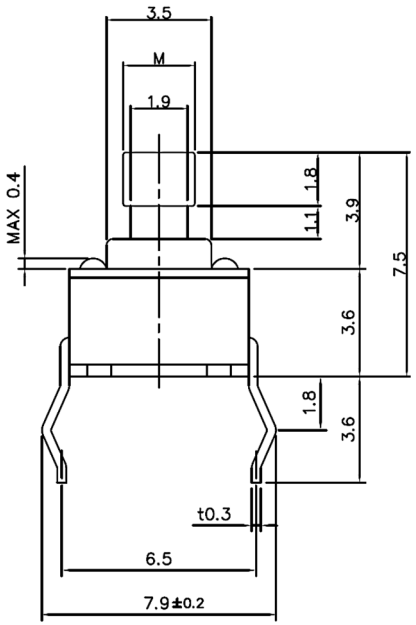


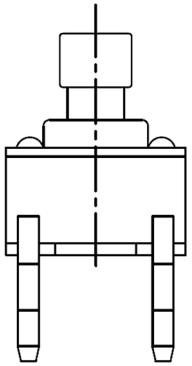
CIRCUIT DIAGRAM



P.C.B MOUNTING PATTERN







MODEL	M(mm)
STP-1234	2.4
STP-1234A	2.8

SPECIFICATION

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

NO.	DESCRIPTION	MATERIAL	COLOR/FINISH	Q.TY	VENDOR
01	-	-	-	1	-

DRAW/DESIGNED	CHECKED	APPROVED	G.TOL	TITLE	TACT SWITCH	
Y.N JEON	S.M PARK	J.P ROH	±0.1			
			UNIT / SCALE	MODEL	STP-1234X	SHEET
2019-03-14			mm			
SUNGMUN ELECTRONICS CO.,LTD			SIZE	DRAW NO.	STP-12340-S-01	1/1

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℃ ~ +70℃ (normal humidity, normal press)

1-2 Storage Temperature Range : -40℃ ~ +80℃ (normal humidity, normal press)

1-3 Test Conditions :

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

Normal temperature (temperature 5 to 35℃)

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℃)
Relative humidity	(65±5%)
Pressure	(860 to 1,060 mbars)

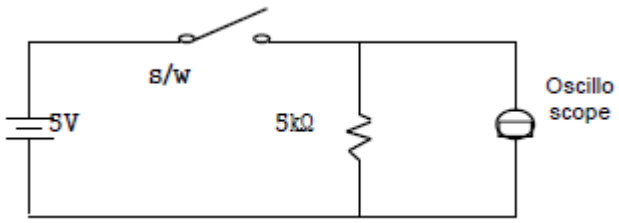
2. Rating:

2-1 Switch rating : 50 mA, DC 12V

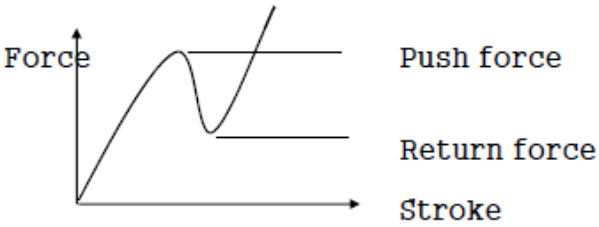
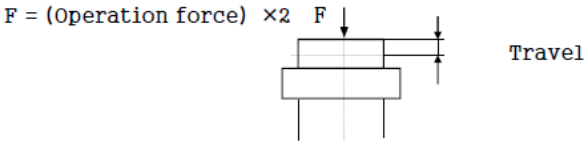
3. Type of Actuation : Push – ON type

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

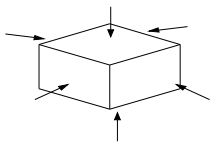
5. Electrical Characteristics

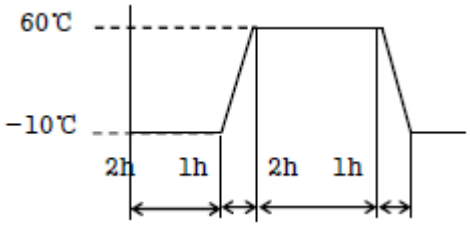
ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
5-1	Visual Examination	By visual examination check without any out pressure & testing.	There shall be no defects that affect the serviceability of the product.
5-2	Contact Resistance	Push force : (Operation force) x 2 Measurements shall be made with a 1kHz small current contact resistance.	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. 	See outside drawing
6-2	Travel	Push by recommended operating condition. 	0.25±0.1 mm
6-3	Stop Strength	A static load of 3 kgf shall be applied in the direction of stem operation for a period of 60 seconds.	No damage (Electrical and mechanical)
6-4	Stem Strength	The maximum force to withstand a pull applied opposite to the direction of stem operation shall be measured.	0.5 kgf min
6-5	Operation Life	Measurements shall be made following the test set forth below: 1) 50mA, 12V DC resistive load 2)Operation speed: 2 ~ 3 cycles / sec. 3)Push force: Maximum value of operation force 4)Cycles 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 : ±30% initial force

7. Environmental Characteristics

ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
7-1	Moisture Resistance	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for one hour before measurements. Are made : 1) Temperature : 60±2℃ 2) Relative humidity : 90 to 95% 3) Time : 96 hours Water drops shall be removed.	1)As shown in item 5-3, 5-4, 5-5, 6-1, 6-2 2)Contact Resistance: 200mΩ max
7-2	Resistance Low Temperature	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℃ ± 2℃ 2)Time: 96 hours Water drops shall be removed.	1)As shown in item 5-3, 5-4, 5-5, 6-1, 6-2 2)Contact Resistance: 200mΩ max
7-3	Resistance High Temperature	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: 80℃ ± 2℃ 2)Time: 96 hours	1)As shown in item 5-3, 5-4, 5-5, 6-1, 6-2 2)Contact Resistance: 200mΩ max
7-4	Impact Shock Resistance	Measurements shall be made following the test set forth below : 1) Acceleration : 80G 2) Cycles of test : 3 cycles each in 6 directions for a total 18 cycles 	Item 5 Item 6-1, 6-2

ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
7-5	Change of Temperature	Following 5 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.  Cycling : 1 cycles	1)As shown in item 5-3, 5-4, 5-5, 6-1, 6-2 2)Contact Resistance: 200mΩ max
7-6	Vibration Resistance	Measurements shall be made following the test set forth below : 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.	Item 5 Item 6-1, 6-2
7-7	Soldering Test	Soldering area: t/2 of P.W.B thickness (P.W.B : t = 1.6) Soldering temperature: 260±5℃ Soldering time: 5±1 sec	No damage (Electrical and mechanical)
7-8	Salt Mist Test	Switch shall be checked after following test 1) Temperature: 35±2℃ 2) Salt solution: 5±1% 3) Duration of test: 48 hours	Without excessive rust or discoloration

8. This item is "RoHS" Compliant

9. Manual Soldering Conditions:

9-1 Temperature : 350±5℃

9-2 Time : 3 sec max

10. Soldering

10-1 Preheat temperature : 110℃ 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℃ max.

10-5 Time of immersion : Within 5 sec.

10-6 Soldering number : Within 2 times (But should bring down heat of the first soldering)

10-7 Printed wiring board : Single sided copper-clad laminates.

1) After switches were soldered, please be careful not to clean switches with solvent.

2) In the case of using soldering iron, soldering conditions shall be 280℃ max. and 3 sec max.

3) After switches were soldered, please be careful not to load the knobs of switches.