DATA SHEET

SUNGMUN CODE : STP-1194 SERIES

DESCRIPTION : TACT SWITCH

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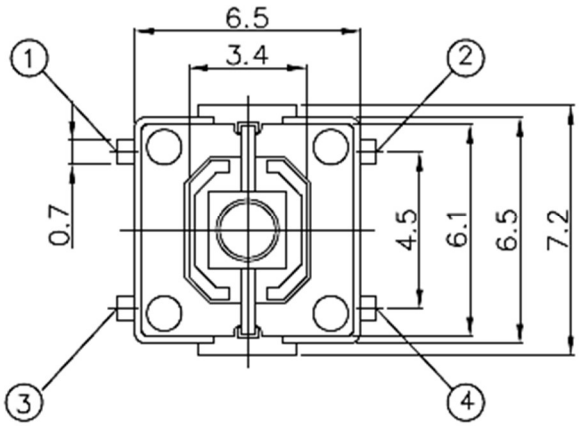
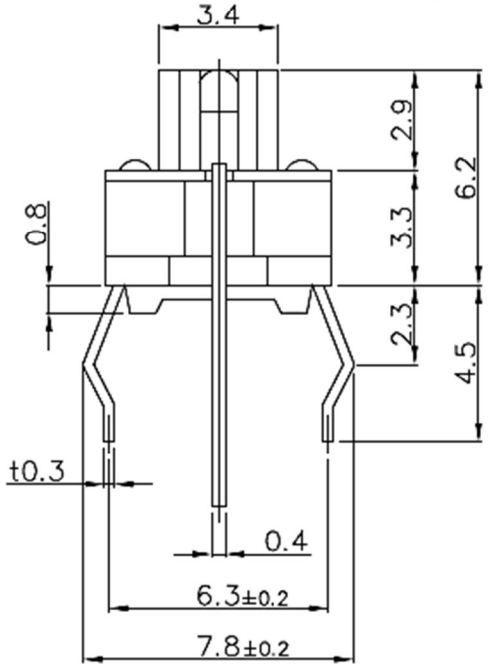
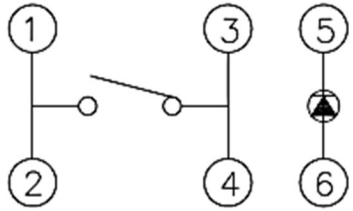
SUNGMUN ELECTRONICS

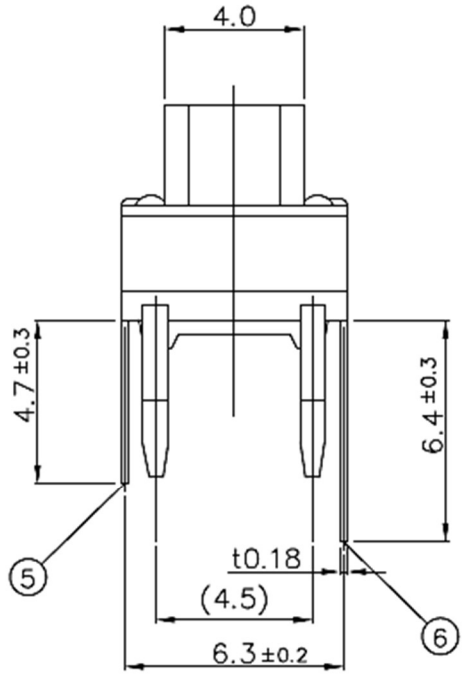
MRK	DATE	REVISION	SIGN



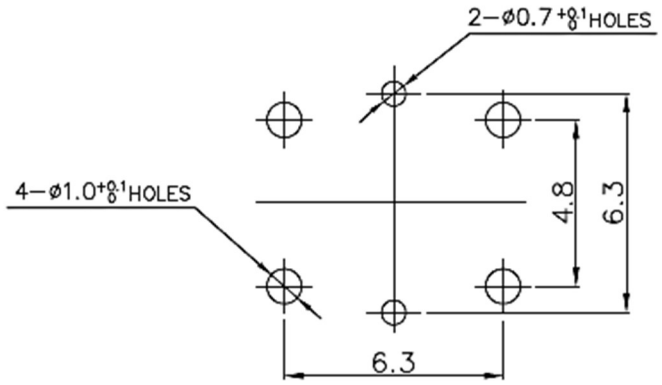


CIRCUIT DIAGRAM





P.C.B MOUNTING PATTERN



MODEL	COLOR
STP-1194G	GREEN
STP-1194R	RED
STP-1194B	BLUE

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±30gf
6. LIFE CYCLES :100,000 CYCLES
7. WITH LED : OPTION

01	-	-	-	1	-
NO.	DESCRIPTION		MATERIAL	COLOR / FINISH	QTY / VENDOR
DRAW/DESIGNED	CHECKED	APPROVED	G.TOL ±0.1	TITLE	TACT SWITCH
Y.M.BYUN	J.P ROH	K.I LEE	UNIT: mm / SCALE: 4:1	MODEL	STP-1194X
SUNGMUN ELECTRONICS CO., LTD			SIZE: A4	DRAW NO.	STP-1194-S-02

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℃ ~ +70℃

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)

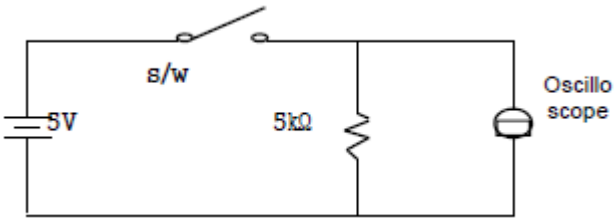
2. Rating:

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

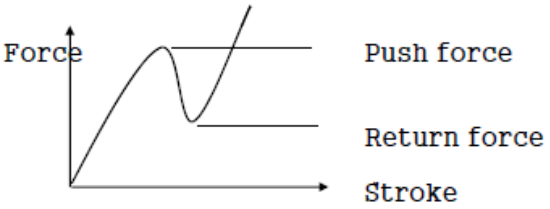
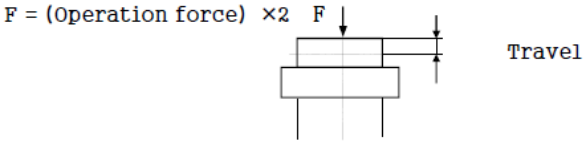
3. Type of Actuation : Push – ON type

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

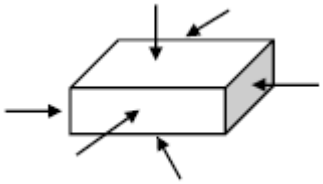
5. Electrical Characteristics

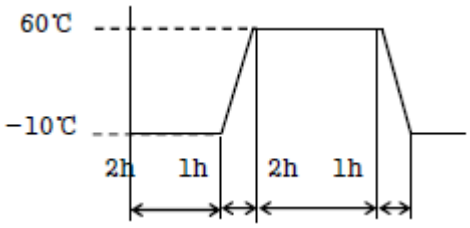
ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
5-1	Visual Examination	By visual examination check without any out pressure & testing.	There shall be no defects that affect the serviceability of the product.
5-2	Contact Resistance	Push force : (Operation force) X 2 Measurements shall be made with a 1kHz small current contact resistance.	100mΩ max.
5-3	Insulation Resistance	D.C 100V for 1 minute. (Between terminals)	100 MΩ min.
5-4	Dielectric withstanding Voltage	A.C 250V for 1 minute. (Between terminals)	There shall be no breakdown or flashover.
5-5	BOUNCE	Operation speed : 3~4 time / sec 	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) Rate of operation: 2~3 cycles/ sec 3) Depression: 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: -30℃ ± 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 of 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. 	1)As shown in item 5-3, 5-4, 5-5, 6-1, 6-2 2)Contact Resistance: 200mΩ max.
7-6	Salt Mist Test	Switch shall be checked after following test. 1) Salt solution: 5±1% 2) Temperature: 35±2℃ 3) Time: 48 hours	Without excessive rust or discoloration
7-7	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
7-8	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)

8. This item is "RoHS" Compliant

9. Auto Soldering Conditions:

Preheat temperature	110℃ max. (Environmental temperature of soldering surface of P.W.B)
Preheat time	60 sec max.
Area of flux	1/2 max. of P.W.B thickness
Temperature of solder	255℃ max.
Time of immersion	Within 5 sec
Soldering number	Within 2 times (But should bring down heat of the first soldering)
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.

10. Manual Soldering Conditions: 300±5℃, 3 sec max.