

DATA SHEET

SUNGMUN CODE : STP-1125B

DESCRIPTION : TACT SWITCH

SUNGMUN ELECTRONICS CO., LTD.

Address 301-302, Bucheon Technopark 345, Seokcheon-ro, Ojeong-gu
Bucheon-si, Gyeonggi-do, Korea

TEL. +82-32-328-1941~4

FAX +82-32-328-1945

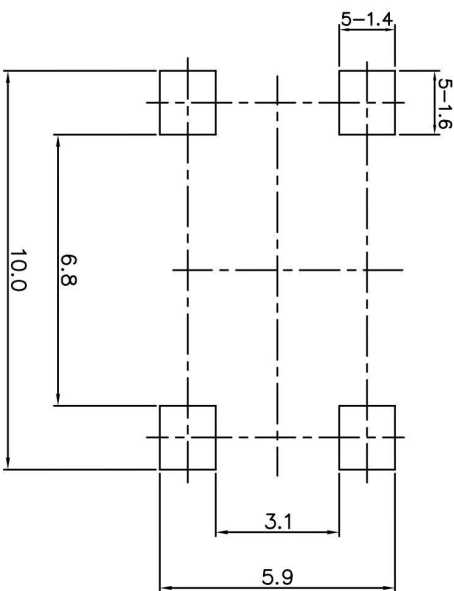
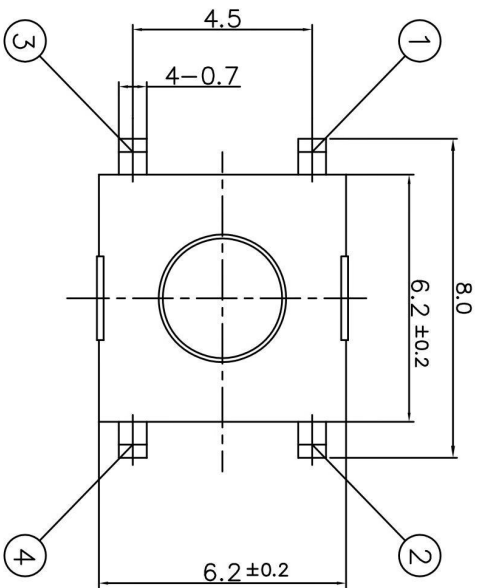
E-mail sungmun@sungmun.co.kr

Website www.sungmun.com

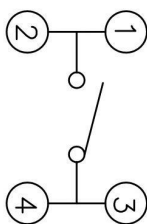


SUNGMUN
ELECTRONICS

P.C.B LAND PATTERN



CIRCUIT DIAGRAM



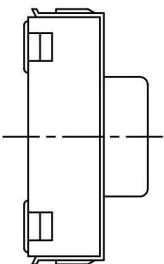
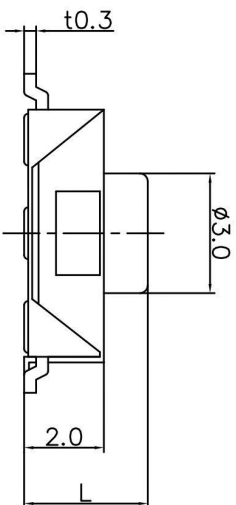
KNOB HEIGHT

MODEL	L(mm)
STP-1125B	2.5

SPECIFICATION

1. RATING : DC 12V 50mA
2. TRAVEL : 0.25±0.1mm
3. CONTACT RESISTANCE : 100mΩ MAX.
4. BOUNCE : 10m SEC MAX.
- 5.

MODEL	OPERATING FORCE	LIFE CYCLES
STP-1125B	160±50gf	80,000 CYCLE



PART NO.		MODEL		QTY		MATERIAL		SPECIFICATION		TREATMENT		REFERENCE	
TOLERANCE UNLESS OTHERWISE STATED(mm)				TRIGONOMETRY		UNIT		SCALE		USER		TITLE	
less than 10				APPROVAL		m/m		1/1		TACT SWITCH			
10~30				CHECK						STP-1125B			
30~100				DESIGN						L.M.G			
ANGLE				M.J.y		K.S.G		L.M.G		DWG NO.			
±0.1													
±0.2													
±0.3													
±2°													
MARK		DATE		APPR.		CHECK		DESIGN					

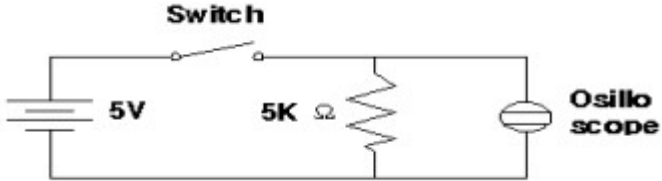
1. General:

1.1 Switch action	PUSH – ON type S.P.S.T
1.2 Switch rating	DC 12V, 50mA max
1.3 Operating temperature range	-20°C~70°C
1.4 Preservative temperature range	Single condition -30°C~80°C
	Taping condition -20°C~40°C
1.5 Appearance and dimensions	As per individual assembly drawing.
1.6 Standard conditions	Unless otherwise specified, the test and measurements shall be carried out as follows:
	Ambient temperature : 5~35°C
	Relative humidity : 45~85%
	Air pressure : 86~106kPa (860~1060mbar)
	However, if doubt arises on the decision based on the measured values under the above-mentioned conditions, the following conditions shall be employed.
	Ambient temperature : 20±2°C
	Relative humidity : 60±5%RH
Air pressure : 86~106kPa (860~1060mbar)	

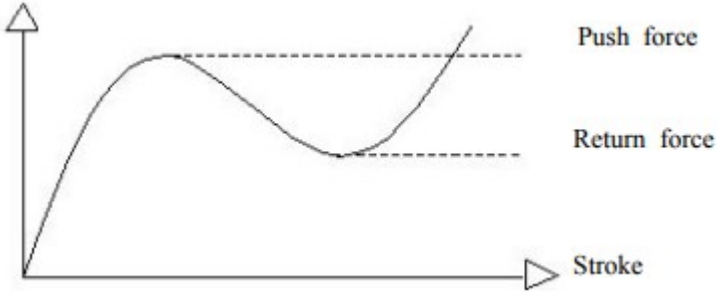
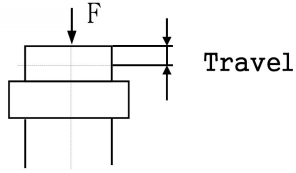
2. Performance

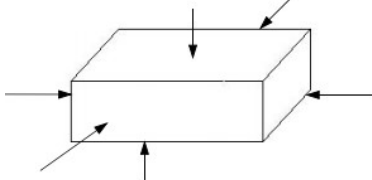
2.1 Electrical characteristics

ITEM	DESCRIPTION	TEST CONDITIONS	Criteria
2.1.1	Contact resistance	Applying a static load twice the actuating force to the center of the stem, measurements shall be made with a 1kHz small-current contact resistance meter.	100mΩ MAX
2.1.2	Insulation resistance	Measurements shall be made following application of DC 100V potential across terminals and frame for one minute.	100MΩ min.
2.1.3	Dielectric withstandin voltage	AC 250V (50Hz or 60Hz) shall be applied across terminals and frame for one minute.	There shall be no break-down

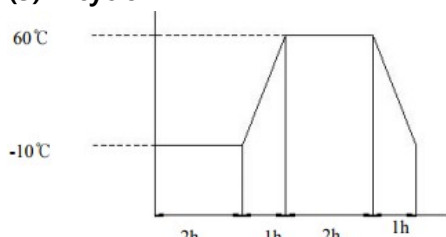
2.1.4	Bounce	<p>Lightly striking the center of the stem at a rate encountered in normal use (3 to 4 operations per sec.) bounce shall be tested at 'ON' and 'OFF'</p> 	10 msec max
-------	--------	---	-------------

2.2 Mechanical characteristics

	Items	TEST CONDITIONS	Criteria
2.2.1	Operating force	<p>Push by recommended operating condition</p> 	See outside drawing
2.2.2	Travel	<p>Push by recommended operating condition $F = (\text{Operation force}) \times 2$</p> 	0.25±0.1mm
2.2.3	Stop Strength	A static load of 3kgf shall be applied in the direction of stem operation for a period of 60 seconds.	No damage (Electrical and mechanical)
2.2.4	Vibration test	<ol style="list-style-type: none"> (1) Amplitude : 1.5mm (2) Sweep rate : 10-55-10Hz for 1 minute. (3) Sweep method : Logarithmic frequency sweep rate. (4) Vibration direction : X.Y.Z (3 directions) (5) Time : Each direction 2 hours (Total 6 hours) 	No 2.1 and 2.2.1 to 2.2.2 shall be satisfied.

2.2.5	Impact shock test	<p>(1) Acceleration : 80G (2) Cycle of test : 3 cycles each in 6 directions for a total 18 cycles</p> 	No 2.1 and 2.2.1 to 2.2.2 shall be satisfied.
2.2.6	Soldering heat test	<p>Soldering area : t/2 of P.W.B thickness (P.W.B : t = 1.6) Soldering temperature : 260±5°C Soldering time : 5±1se</p>	No damage (Electical and mechanical)
2.2.7	Stem strength	The maximum force to withstand a pull applied opposite to the direction of stem operation shall be measured.	0.5 kgf min

2.3 Climatic characteristics

	Items	TEST CONDITIONS	Criteria
2.3.1	Cold test	<p>(1) Temperature : -30±2°C (2) Duration of test : 96hours (3) Take off a drop water (4) Standard condition after test : 1 hour</p>	<p>Contact resistance : 200mΩ max No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied.</p>
2.3.2	Heat test	<p>(1) Temperature : 80±2°C (2) Duration of test : 96hours (3) Standard condition after test : 1 hour</p>	<p>Contact resistance : 200mΩ max No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied.</p>
2.3.3	Temperature cycle	<p>(1) Test cycles : 5 cycles (2) Standard conditions after test : 1 hour (3) 1 cycle</p> 	<p>Contact resistance : 200mΩ max No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied</p>

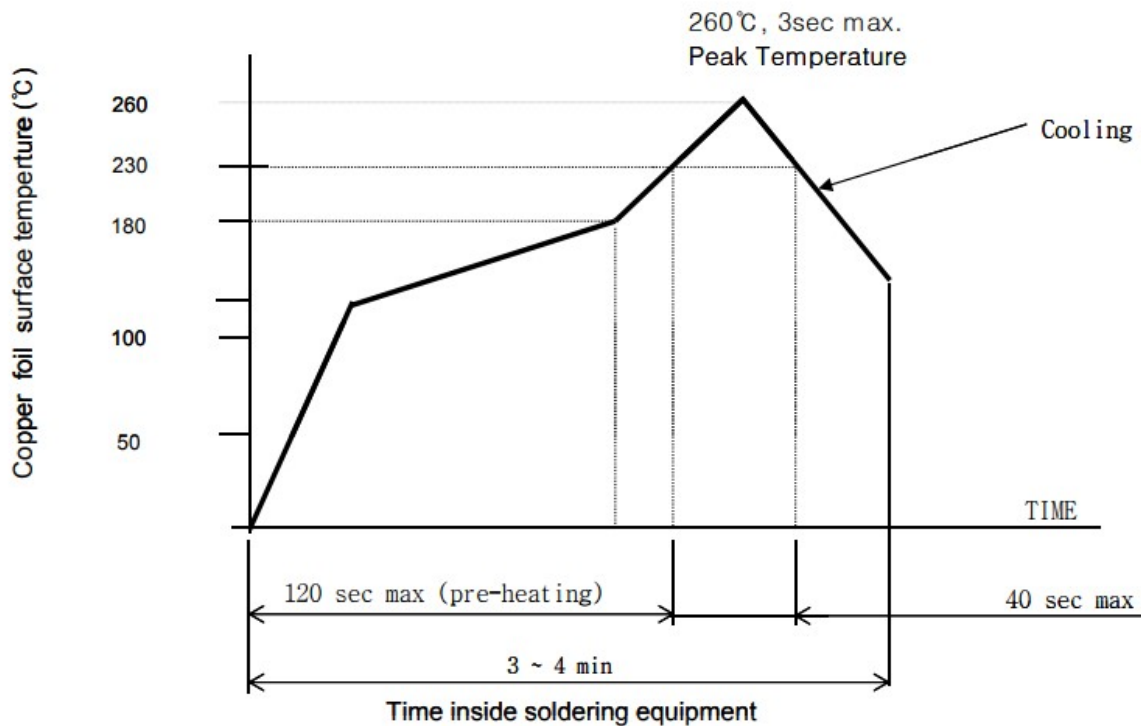
2.3.4	Humidity test	<p>(1) Temperature : $60\pm 2^{\circ}\text{C}$ (2) Relative humidity : 90~95% (3) Duration of test : 96 hours (4) Take off a drop water (5) Standard conditions after test : 1 hour.</p>	<p>Contact resistance : 200mΩ max No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied</p>
2.3.5	Operating life test	<p>(1) DC 5V, 5mA resistance load (2) Operation speed : 2~3 cycles/sec (3) Push force : maximum value of operation force (4) Cycle of operation : See outside drawing</p>	<p>Contact resistance : 200mΩ max Bounce : 20m sec max Actuating force : $\pm 30\%$ initial force No 2.1.2 to 2.1.3 and 2.2.2 shall be satisfied.</p>
2.3.6	Salt mist test	<p>Switch shall be checked after following test. (1) Temperature : $35\pm 2^{\circ}\text{C}$ (2) Salt solution : $5 \pm 1\%$ (3) Duration of test : 48 hours</p>	<p>Without excessive rust or discoloration</p>

3. Soldering

Reflow soldering conditions

Preheat : temperature on the copper foil surface should reach 180°C, 2±0.3 minutes after the P.W.P entered into the soldering equipment.

Soldering heat : Temperature on the copper foil surface should reach the peak temperature of 240°C within 20 seconds after the P.W.B entered into soldering heat zone.



Temperature Profile