

DATA SHEET

SUNGMUN CODE : STP-1212C

DESCRIPTION : TACT SWITCH

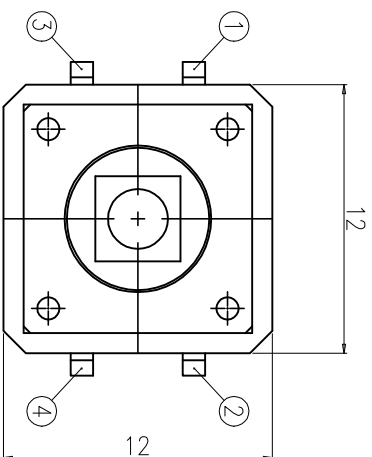
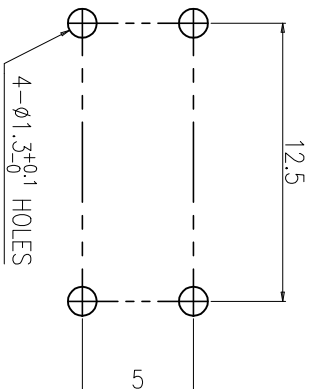
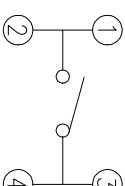
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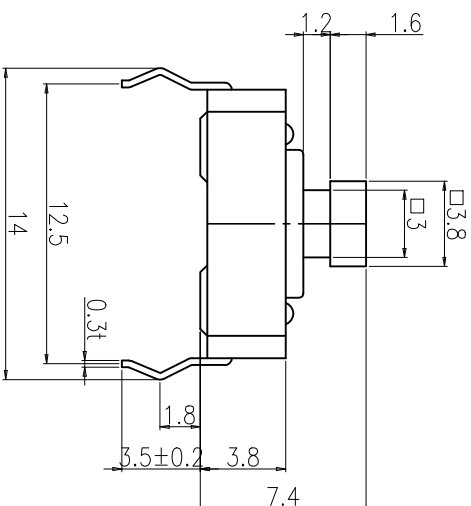
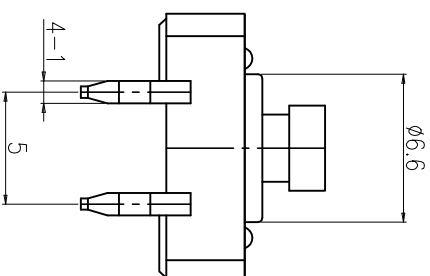
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REV. NO.	DATE	REVISION	DR	CH	APP
	25.02.19	TRAVEL SPEC CHANGE 0.3±0.1mm → 0.3±0.15mm	H.S LEE	K.M KIM	W.J LEE



CIRCUIT DIAGRAM

P.C.B MOUNTING HOLES



SPECIFICATION

1. Rating : DC 12V 50mA
2. Travel : 0.3±0.15mm
3. Contact Resistance : 100mΩ Max
4. Bounce : 10m SEC Max
5. Operating Force : 160±50gf
6. Life cycle : 300,000 cycle

01	-	-	-	-	-
NO.	DESCRIPTION	MATERIAL	COLOR / FINISH	REMARK	
DRAW/DESIGNED	CHECKED	APPROVED			
H.S LEE	K.N KIM	W.J LEE			
2022-10-27	2022-10-27	2022-10-27	mm		
SUNGUMUN ELECTRONICS CO.,LTD			SIZE	DRAW NO.	REV.
			A4	STP-1212C-S-02	02

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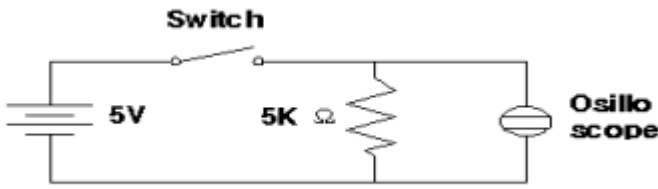
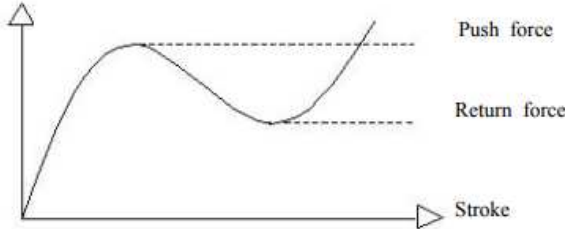
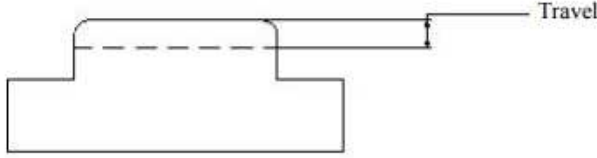
1. General:

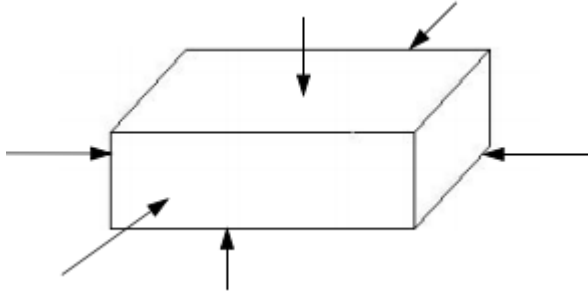
- | | |
|------------------------------------|--|
| 1.1 Switch action | PUSH –ON type S.P.S.T |
| 1.2 Switch rating | DC 12V, 50mA Max |
| 1.3 Operating temperature range | -20°C~70°C |
| 1.4 Preservative temperature range | Single condition -30°C~80°C
Taping condition -20°C~40°C |
| 1.5 Appearance and 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 : 65±5%RH
Air pressure : 86~106kPa (860~1060mbar) |

2. Performance

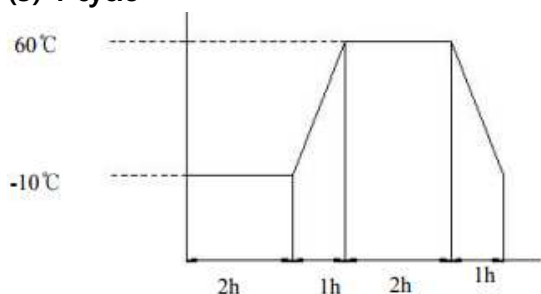
2.1 Electrical characteristics

ITEM	DESCRIPTION	TEST CONDITIONS	Criteria
2.1.1	Contact resistance	Push force : (Operation force) × 2 Measurements shall be made with a 1kHz small current contact resistance..	100mΩ MAX
2.1.2	Insulation resistance	D.C. 100V for 1 minute. (Between terminals)	100MΩ min.
2.1.3	With standing voltage	A.C. 250V for 1 minute. (Between terminals)	There shall be no break-down

2.1.4	Bounce	<p>Operation speed : 3 ~ 4 times /sec</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</p> <p>$F = (\text{Operation force}) \times 2$</p> 	$0.3 \pm 0.15 \text{ mm}$
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	Stem strength	The maximum force to withstand a pull applied opposite to the direction of stem operation shall be measured.	0.5 kgf min
2.2.5	Vibration test	<p>(1) Amplitude : 1.5mm</p> <p>(2) Sweep rate : 10-55-10Hz for 1 minute.</p> <p>(3) Sweep method : Logarithmic frequency sweep rate.</p> <p>(4) Vibration direction : X.Y.Z (3 directions)</p> <p>(5) Time : Each direction 2 hours (Total 6 hours)</p>	No 2.1 and 2.2.1 to 2.2.2 shall be satisfied.

2.2.6	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 : $260 \pm 5^{\circ}\text{C}$ Soldering time : $5 \pm 1\text{se}$</p>	No damage (Electrical and mechanical)

2.3 Climatic characteristics

	Items	TEST CONDITIONS	Criteria
2.3.1	Cold test	<p>(1) Temperature : $-30 \pm 2^{\circ}\text{C}$ (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 : $80 \pm 2^{\circ}\text{C}$ (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>

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2.3.4	Humidity test	(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.	Contact resistance : 200m Ω max No 2.1.2 to 2.1.4 and 2.2.1 to 2.2.2 shall be satisfied
2.3.5	Operating life test	(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	Contact resistance : 200m Ω 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.
2.3.6	Salt mist test	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	Without excessive rust or discoloration.

3. Soldering

3.1 Auto soldering conditions

ITEM	CONDITION
Preheat temperature	110°C 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°C max.
Time of immersion	Within 5 sec
Soldering number	Within 2 time (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°C max. and 3 sec max
- 3) After switches were soldered, please be careful not to load the knobs of switches.

3.2 Manual soldering conditions

Temperature : 350 ± 5°C

Time : 3 sec max