DATA SHEET

SUNGMUN CODE : **STP-1159SA**

DESCRIPTION : **TACT SWITCH**

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SUNGMUN
ELECTRONICS

SPECIFICATION FOR APPROVAL				Specification NO. 2023110901
품 목	TACT SWITCH	품 명	STP-1159SA	1/8

1.General specification

1.1 Scope This specification covers the requirements for single key switches which have no key top (TACT SWITCHES: MECHANICAL CONTACT).

1.2 Operating Temperature Range

-20 to+70℃(normal humidity, normal press.)

1.3 Storage Temperature Range

-40 to+85℃(normal humidity, normal press.)

1.4 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 1060 mbars)

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

Temperature	(20±2℃)
Relative humidity	(85 to 95%)
Pressure	(860 to 1060 mbars)

2.TYPE OF ACTUATION

Tactile feedback

3.CONTACT ARRANGEMENT 1 poles 1 throws

(Details of contact arrangement are given in the assembly drawings.)

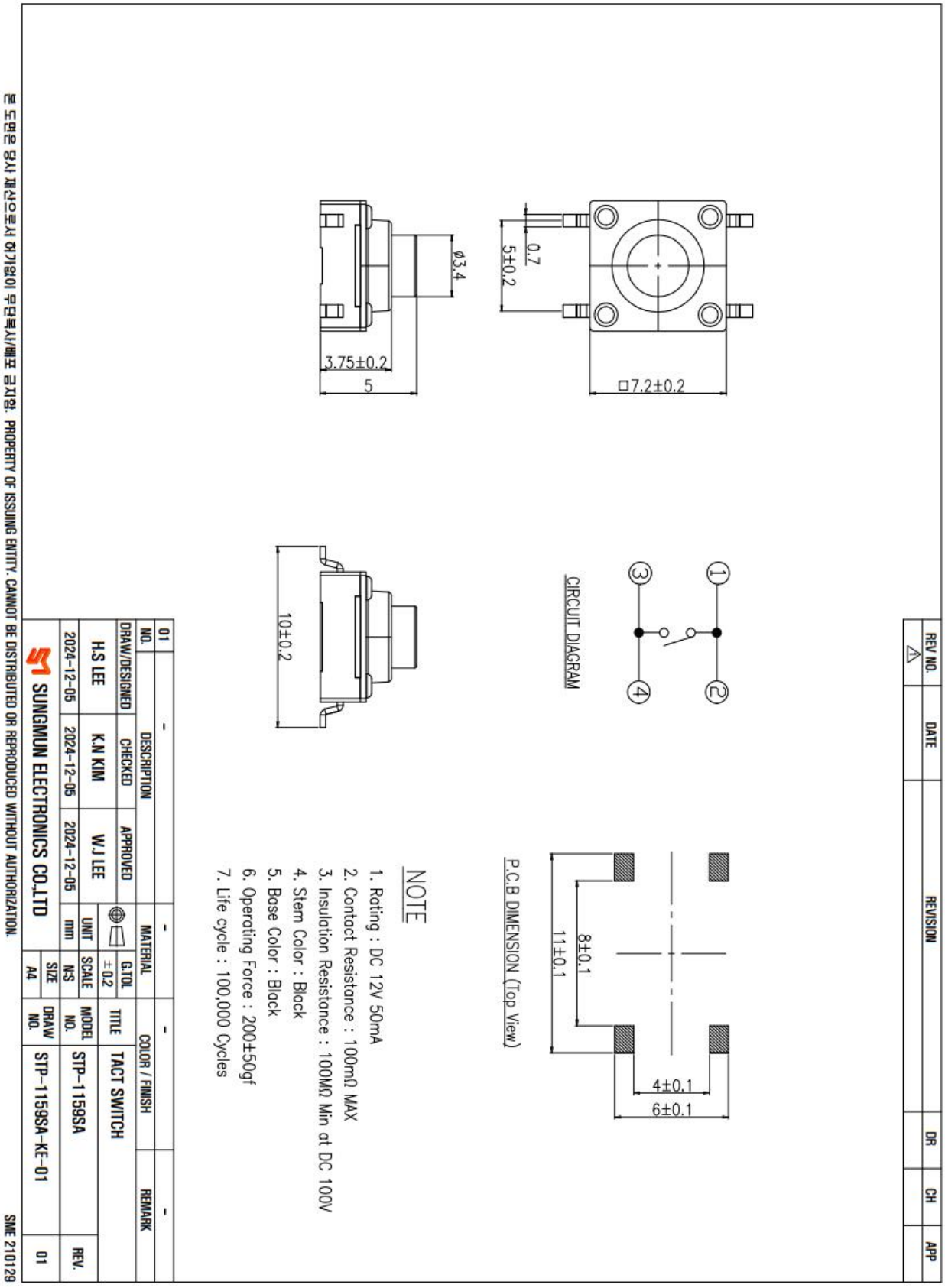
4.MAXIMUM RATINGS DC 12 V 50 mA

DC 1 V 10 μA

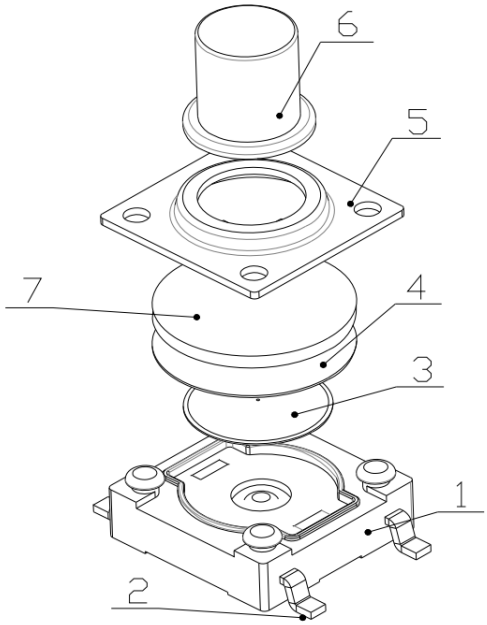
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5. DRAWING:

5.1 OUTLINE



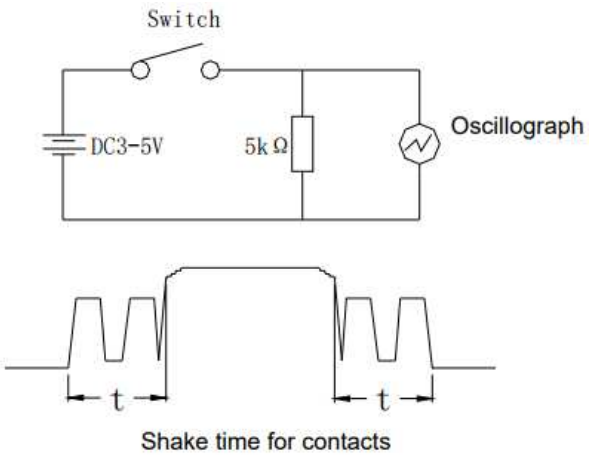
5.2 Structure



NO	PART NAME	QT'Y	MATERIAL	PLATING	REMARKS
1	BASE	1	LCP		BLACK
2	TERMINAL	1	BRASS	Ag plating	
3	CONTACT	1	STAINLESS STEEL	Ag plating	
4	TAPE1	1	PI		YELLOW
5	COVER	1	STAINLESS STEEL		
6	STEM	1	PA6T		BLACK
7	TAPE2		SILICONE RUBBER		BLACK

6. General specification

6.1 Electrical performance

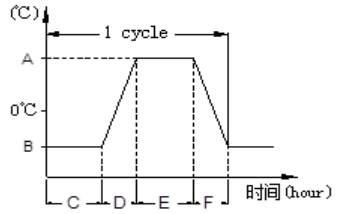
Item		Test Condition	Requirements
6.1.1	Contact Resistance	Applying static load twice the actuating force to the center of the stem, measurements shall be made with a 1 kHz small-current contact resistance meter.	100m Ω MAX
6.1.2	Insulation Resistance	Measurements shall be made following application of DC100V potential between terminals and between individual terminals and frame for one minute.	100M Ω MIN
6.1.3	Dielectric withstanding voltage	AC 250 V (50Hz or 60Hz) shall be applied between terminals and between individual terminals and frame for one minute.	There shall be no breakdown.
6.1.4	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

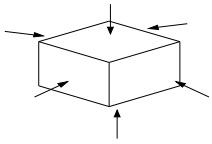
6.2 Mechanical performance

Item		Test Condition	Requirements
6.2.1	Actuating Force	Place the switch such that the direction of switch operation is vertical and then gradually increase the load applied to the center of the stem, the maximum load required for the stem to come to a stop shall be measured.	200 ± 50 gf
6.2.2	Travel	Place the switch such that the direction of switch operation is vertical and then apply a static load twice the actuating force to the center of the stem, the travel distance for the stem to come to a stop shall be measured.	0.35 ± 0.1 mm
6.2.3	Return Force	The sample switch is installed such that the direction of switch operation is vertical and, upon depression of the stem in its center the whole travel distance, the force of the stem to return to its free position shall be measured.	65 gf min
6.2.4	Static Strength	Placing the switch such that the direction of switch operation is vertical, 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.

6.3 Durability

Item		Test Condition	Requirements
6.3.1	Operating Life	Measurements shall be made following the test set forth below: (1)DC 5V 5mA resistive load. (2)Rate of operation: 1 to 2 operations per second (3)Depression: 375 gf (4)Cycles of operation: 10×10^4 cycles	Contact resistance: 200 mΩ Max. Insulation resistance : 50 MΩ Min. Actuating force: + 30 %or- 30%of initial force. Item 6.1.3 Item 6.2.2
6.3.2	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 : 45 to 85% (3) Time : 96 hours Water drops shall be removed.	Contact resistance: 200 mΩ Max. Insulation resistance : 50 MΩ Min. Item 6.1.3、6.1.4 Item 6.2.1~6.2.3
6.3.3	Low Temperature 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: -40±2℃ (2)Time: 96 hours Water drops shall be removed.	Contact resistance: 200 mΩ Max. Insulation resistance : 50 MΩ Min. Item 6.1.3、6.1.4 Item 6.2.1~6.2.3
6.3.4	Heat 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: 85±2℃ (2)Time: 96 hours	Contact resistance: 200 mΩ Max. Insulation resistance : 50 MΩ Min. Item 6.1.3、6.1.4 Item 6.2.1~6.2.3
6.3.5	Water Resistance	Put the switch into the water of depth 1m, temperature 30±2℃ for 5 minutes, take out and wipe the water. The switch of the water resistance is IP67.	Contact resistance: 200 mΩ Max. Insulation resistance : 50 MΩ Min. Item 6.1.3、6.1.4 Item 6.2.1~6.2.3

Item		Test Condition	Requirements
6.3.6	Change of Temperature	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.  A：+85±2℃ B：-40±2℃ C：2 hour D：1 hour E：2 hour F：1 hour Cycling：5 cycles	Contact resistance: 200 mΩ Max. Insulation resistance : 50 MΩ Min. Item 6.1.3, 6.1.4 Item 6. 2.1~6.2.3
6.3.7	Vibration Resistance	Measurements shall be made following the test set forth below: (1)Range of oscillation : 10 to 55Hz (2)Amplitude, pk-to-pk : 1.5 mm (3)Cycle of sweep : 10-55-10Hz in one minute, approx.: 10-55-10Hz (4)Mode of sweep : Logarithmically sweep or uniform sweep. (5)Direction of oscillation : Three mutually perpendicular directions, including the direction of stem travel. (6)2 hours each ,for a total of 6hours.	Item 6.1 Item 6. 2.1、6.2.2

Item		Test Condition	Requirements
6.3.8	Impact Shock Resistance	Measurements shall be made following the test set forth below: (1)Acceleration:80g (2)Cycles of test :3 cycles each in 6directions, for a total of 18cycles 	Item 6.1 Item 6. 2.1、6.2.2

7. Welding condition:

Item		Recommended conditions
7.1	Hand Soldering	Please practice according to bellow conditions: (1)Soldering temperature :≤260℃ (2)Continuous soldering time:≤5S (3)Capacity of soldering iron:≤30W
7.2	Solderability	After sprayed flux Wave soldering temperature:260±5℃ Ferrochrome soldering temperature:380±20℃ Soldering time:<5 sec