SWEETA PRODUCTS CORPORATION

SWITCH TYPE	SENSOR Switches	MODEL NO.	SRMD21-02B

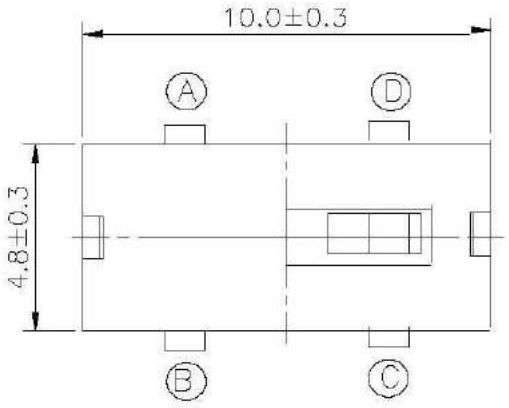
1. Functional spec.

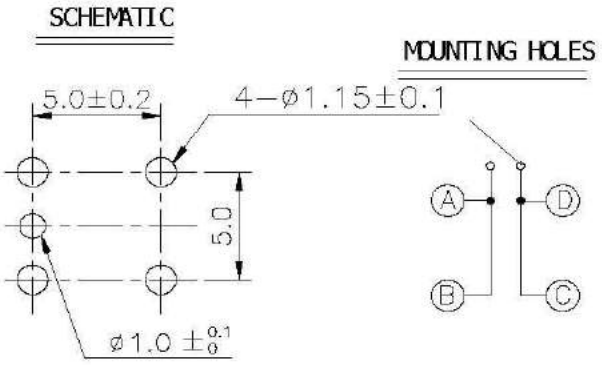
1.1 Rated Voltage	DC5V	1.6 Free Position	6.2± 0.1mm
1.2 Rated Current	1mA	1.7 Operating Position	5.75± 0.2mm
1.3 Contact Resistance	≤ 100mΩ (Initial value)	1.8 Position Travel	
1.4 Operating Force	≤ 50gf	1.9 Return Force	
1.5 Bounce Time	≤ 5m Sec.	1.10	

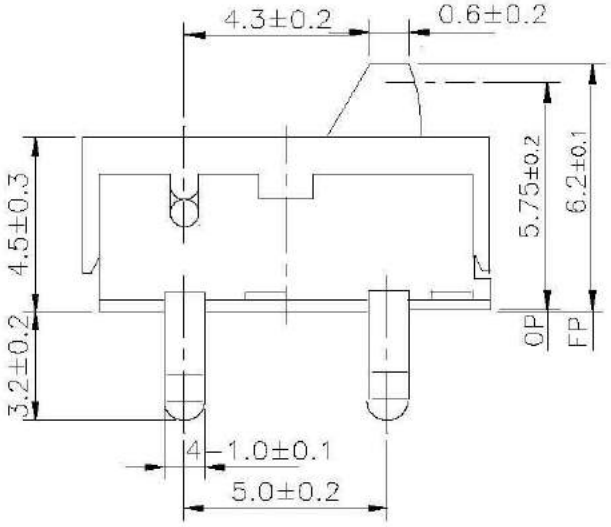
2. Reliable Rating

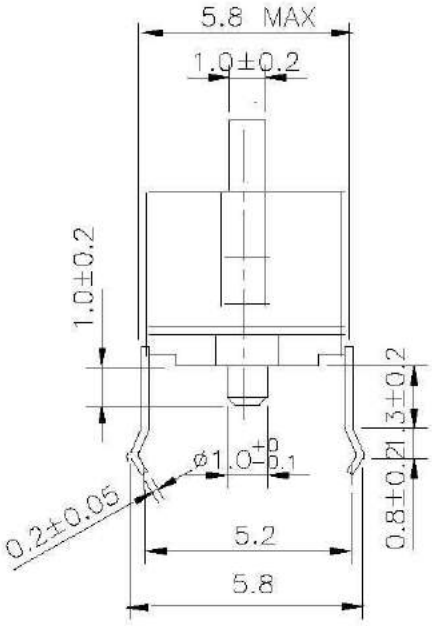
2.1 Mechanical Life	100000 cycles	2.5 Soldering Temper.	245± 5℃ 3 Sec.
2.2 Electrical Life	100000 cycles	2.6 Ambient Temper. Used	-25° C to +70° C
2.3 Insulation Resistance	≥ 100MΩ DC100V (Initial value)	2.7 Ambient Humidity Used	Less than 85%RH
2.4 Withstand Voltage	AC100V 1 minute (Initial value)	2.8	

3. Dimension Drawing









Drawing No.		A/0		Page 1 of 1	
Drawing Model	Specification	Tolerance	± 0.2	Unit	mm
Prepared		Reviewed		Approved		Effective date	

SWEETA PRODUCTS CORPORATION
SENSOR SWITCH APPROVAL SHEET

Document No.: DIC/PE021-001 Model No.: SRM021-02B

1. Introduction

This specification intends to provide a guideline for the engineering qualification and summarize the results of standard Sensor Switch. All the dimensions here in millimeters unless indicated otherwise. All the 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 m bars)

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

Temperature	(20±2℃)
Relative humidity	(65±5%)
Pressure	(860 to 1060 m bars)

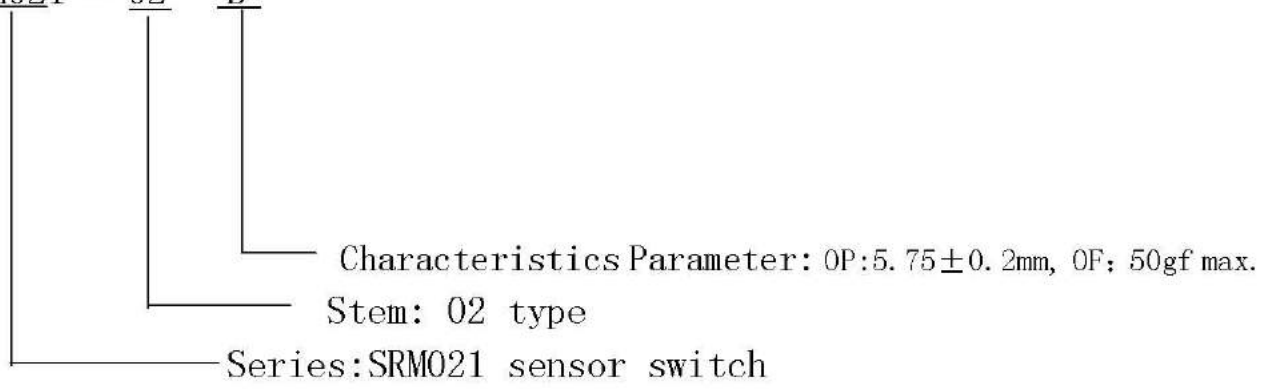
2. Features

2.1 This is a compact detection switch which can be pressed either horizontally and vertically.

2.2 A wide variety of operation components is possible based on the application.

3. Explanation of Model

SRM021 — 02 B



4. Rating: 5VDC 1mA

5. Configuration: Single pole single throw

6. Appearance and Dimensions

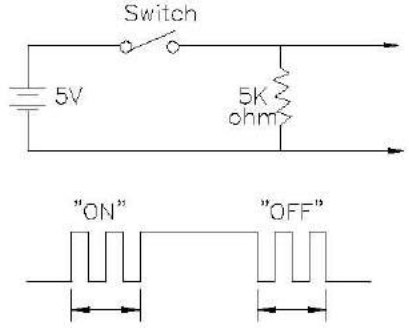
6.1 Appearance

There shall be no defects that affect the serviceability of the product.

6.2 Dimensions

Refer to attached drawing.

7. Electrical Performance

Item	Test Conditions	Requirements
7.1 Contact Resistance	Applying a static load twice the operating force to the button, measurements shall be made between the terminals.	100m ohm max.
7.2 Insulation Resistance	Apply DC 100V between any two open terminals and between the terminal and the frame for 1 minute.	100M ohm min.
7.3 Withstand Voltage	Apply AC100V(50Hz) between any two open terminals and between the terminal and the frame for 1 minute.	Shall be free from dielectric breakage.
7.4 Bounce	Lightly striking the top of the stem at a rate encountered in normal use(3 to 4 operations per sec.)bounce shall be test at "ON" and "OFF". 	5m sec. max.

8. Mechanical Performance

Item	Test Conditions	Requirements
8.1 Operating Force	Placing the switch such that the direction of stem operation is either horizontal and vertical, and then gradually increasing the load applied to the stem, the maximum load required for the stem to come to operating position shall be measured.	50gf max.
8.2 Operating Position	Placing the switch such that the direction of stem operation is either horizontal and vertical then applying a static load up to operating force to the stem, the operating position required for the stem to come to switching position shall be measured.	5.75±0.2mm
8.3 Terminal Strength	Placing the switch such that the direction of stem operation is either horizontal and vertical, a static load of 4kgf shall be applied to the tip of the terminal in the direction of level for one minute.	There shall be no sign of damage mechanically and electrically.

Item	Test Conditions	Requirements
8.4 Button Strength	Placing the switch such that the direction of stem operation is either horizontal and vertical, a static load of 4kgf shall be applied to the tip of the stem in the direction of stem operation for one minute.	There shall be no sign of damage mechanically and electrically.
9. Endurance		
9.1 Service life test	Measurement shall be made under the following conditions. (1)Resistive load: 5VDC, 1mA (2)Rate of operation: 120 cycles per minute (3)Actuation force: 100gf (4)Cycles of operation: 100,000 cycles min.	(1)Contact resistance: 1 ohm Max. (2)Insulation resistance: 10M ohm Min. (3)Bounce: 5m sec. Max. (4)Withstand voltage: AC100V, 1 minute (5)Operating force: ± 30% of initial value (6)There shall be no defects in appearance or in the mechanical functions.

Item	Test Conditions	Requirements
9.2 Resistance to low temperature	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: 53 hours (3)Water drops shall be removed.	Without harmful damage in appearance, mechanical and electrical characteristics shall be satisfied.
9.3 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: 70±2℃ (2)Time: 53 hours	Without harmful damage in appearance, mechanical and electrical characteristics shall be satisfied.
9.4 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: 53 hours (4)Water drops shall be removed.	Contact resistance: 200m ohm max. Insulation resistance: 10M ohm min. Item 7.3 Item 7.4 Item 8

Item	Test Conditions	Requirements
9.5 Solderability test	The top of the terminals shall be dipped 2mm in the solder bath of 230±5℃ for 3 seconds.	A new uniform coating of solder shall cover a minimum of 90% of the surface being immersed.
9.6 Resistance to soldering heat test	The top of the terminals shall be dipped 2mm in the solder bath of 245±5℃ for 3 seconds.	Without harmful damage in appearance, mechanical and electrical characteristics shall be satisfied.
9.7 Operating temperature range		0degC to +40degC
9.8 Practical humidity range		< 85% RH

10. Material List

NO.	Part Name	Quantity	Material	Remark
1	Stem	1	POM	White
2	Case	1	PBT	Black
3	Base	1	PBT	Black
4	Terminal	4	Brass	Silver plating
5	Spring Plate	1	Phosphor copper	Silver plating on single side

15. You must comply with the following principles in the process of the incoming inspecting and using our products, if not, we won't be liable for any damages from it.

15.1 the requirement of the incoming inspection must meet the product's specification that have been affirmed and signed by you. If the following things appear in the process of the incoming inspection, the use is restricted, please feed back us in time, we will take back of all.

15.1.1 The products that are attached or sticked by the unqualified labels;

15.1.2 In the process of the incoming inspection, the following main function parameters must be checked and they must meet the specification. If the sum of the badness rate is more than 1% in the process, the use is restricted, please feedback us in time, we will take back of all.

①Operating Force: OF≤50gf;

②Operating Position: OP=5.75±0.2mm

③Initial Contact Resistance: ≤100mΩ;

④Soldering ability: 230±5℃/3s, the covering rate of tin is more than 90%;

⑤Soldering temperature: 245±5℃/3s, the plastic can't appear the obvious melting phenomena;

⑥Function and action: the operation that the direction of switch operation is vertical with the up-surface of button isn't disabled ;

15.1.3 If the serious packaging disrepair of products appears in the process of the incoming inspection, please refuse accepting them and return them to us directly.

15.2 The requirement of operation:

15.2.1 Operating requirement: the direction of switch operation is vertical with the up-surface of button;

15.2.2 The soldering temperature isn't more than 250℃and the max time is 3s in the soldering process, and the insulating or caustic substance can't immerge in inside of switches, for example: rosins, and so on.

15.2.3 Environment condition: Temperature: -25℃～+70℃; Humidity: ≤ 85%;

15.2.4 Operating strength: the max pressing force is 2Kgf in the vertical direction with the up-surface of button; the max pressing force is 1Kgf in the parallel direction with the up-surface of button; the max pulling force is 0.5Kgf. the badness of product's damage and function destroying for above all, we won't be liable for it.

15.2.5 For switches is a multi-function parameters part in our company, which are assembled by many components (please see 1.2), the max permitting badness rate is 500PPM in producing process. If the damages are for our producing process badness aim, we won't be liable for it.

15.2.6 If badness rate of the main function parameters which is more than 500PPM or the
sum of rate is more than 1500PPM appears in your producing process, please stop
using them immediately and feed back us to do with it in time.

15.2.7 IF your incoming inspection is careless and it arose that the badness rate of your producing process is more than 1%, we won't be liable for the damage.