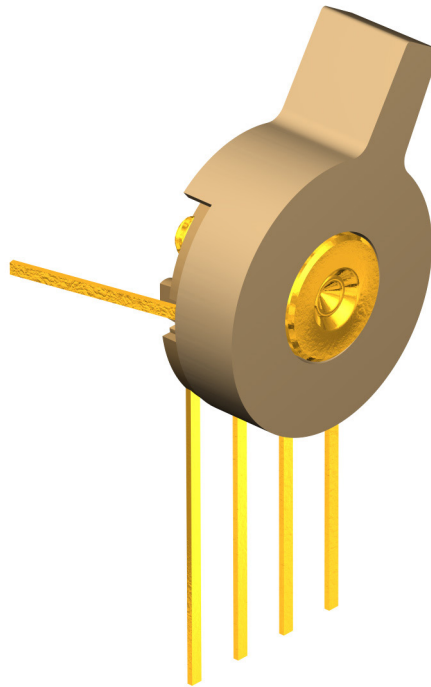


# Switches Model SA 17



## Features

- 3 position switch
- Separate on/off switch, right or left version available
- Different plastic colors available
- Break-Before-Make (BBM)

## Contents

1. History Revision.....	3
2. Mechanical Specifications.....	4
3. Electrical Specifications.....	5
4. Switching Diagram.....	5
5. Material Specifications.....	5
6. Environmental Conditions.....	6
7. Recommended Process Parameters.....	6
8. Mechanical Dimensions.....	7
9. Toggle Styles.....	8
10. Plastic Colors.....	9
11. Product Specification Form.....	10

Sonion reserves the right to make changes at any time to improve reliability, function or design, in order to provide the best product possible.

## 1. History Revision

Revision Number/Date	Change from last revision
07 / Oct. 05	Change of switch material. New lay-out.
08 / Mar. 06	New force definition drawing. New data sheet design.
09 / May 06	Switch contact resistance corrected from 150 MΩ to 150 mΩ
10 / Jun 07	Diameter of plastic pin in 'Mechanical Dimensions' corrected to ø 0.85 mm. Toggle styles added. Operational temperature and humidity removed.
MT1019.A (07/08)	Tolerances on 'Mechanical Dimensions' corrected.
011/JUL-21-2009	No technical updates
012/2014-01-10	Updated design and new RoHS logo directive (2011/65/EU)
013/2014-02-17	Discontinue Toggle 02 and 03
014/2019-09-03	Change of storage temperature and humidity (CR3860)

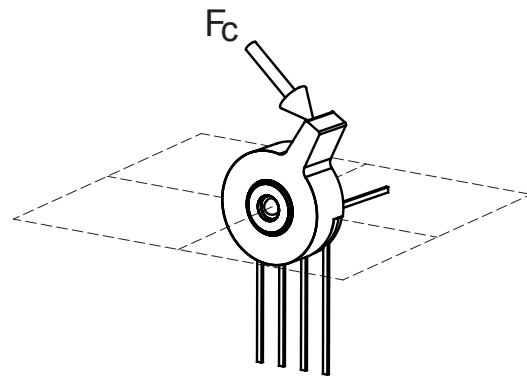
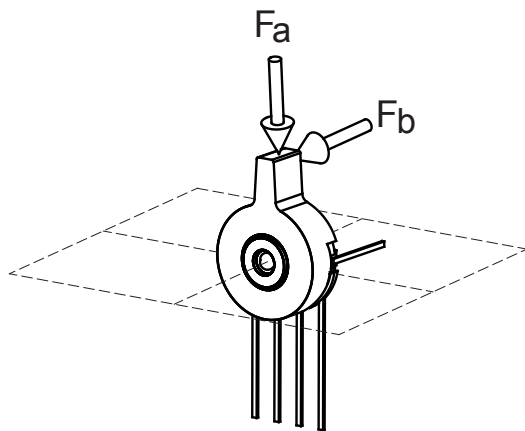
## 2. Mechanical Specifications

Rotational angle	60°
Switch operating torque	Min. 40 cNcm, Max. 85 cNcm
End stop torque	Min. 600 cNcm

Durability of toggle	
Fa, static	10 N
+/- Fb, static	10 N
Fc, static	10 N

Lifetime	Min. 50,000 cycles
Bending of terminals	Min. 2 bending cycles 90° with 0.25 N load

Definition of shear force and toggle retention force:  
Fb, Fc: Attack point is 0.75 mm from top of toggle



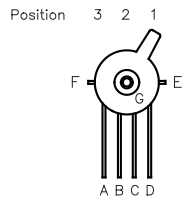
### 3. Electrical Specifications

Switch contact resistance	Max. 150 mΩ
Switch insulation resistance	Min. 1 MΩ
Switching mode	Break-Before-Make (BBM) on selector switch
Bounce time	Max. 5 ms
Switching current	Max. 10 mA
Continuous current	Max. 100 mA

### 4. Switching Diagram

#### SA 17A 3 positions

Switch shown in OFF position

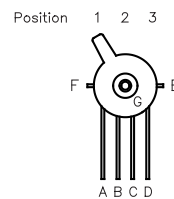


Position \ Terminal	1	2	3
A	•		
B	•	•	
C		•	•
D		•	•
G	•	•	•

Position \ Terminal	1	2	3
E		•	•
F		•	•

#### SA 17B 3 positions

Switch shown in OFF position



Position \ Terminal	1	2	3
A			•
B		•	•
C	•	•	•
D	•	•	•
G	•	•	•

Position \ Terminal	1	2	3
E		•	•
F		•	•

### 5. Material Specifications

All materials comply with RoHS directive (2011/65/EU)

Terminals	CuNiZn, gold flash plated
Selector and On/Off springs	CuBe, gold plated
Detent springs	Stainless steel

Toggle	
New designs	PA 6.6, glass reinforced
Existing designs	POM or PA 6.6, glass reinforced
Base	PPS, glass reinforced

Lubricant, glue / seal, and paint specifications are proprietary information.

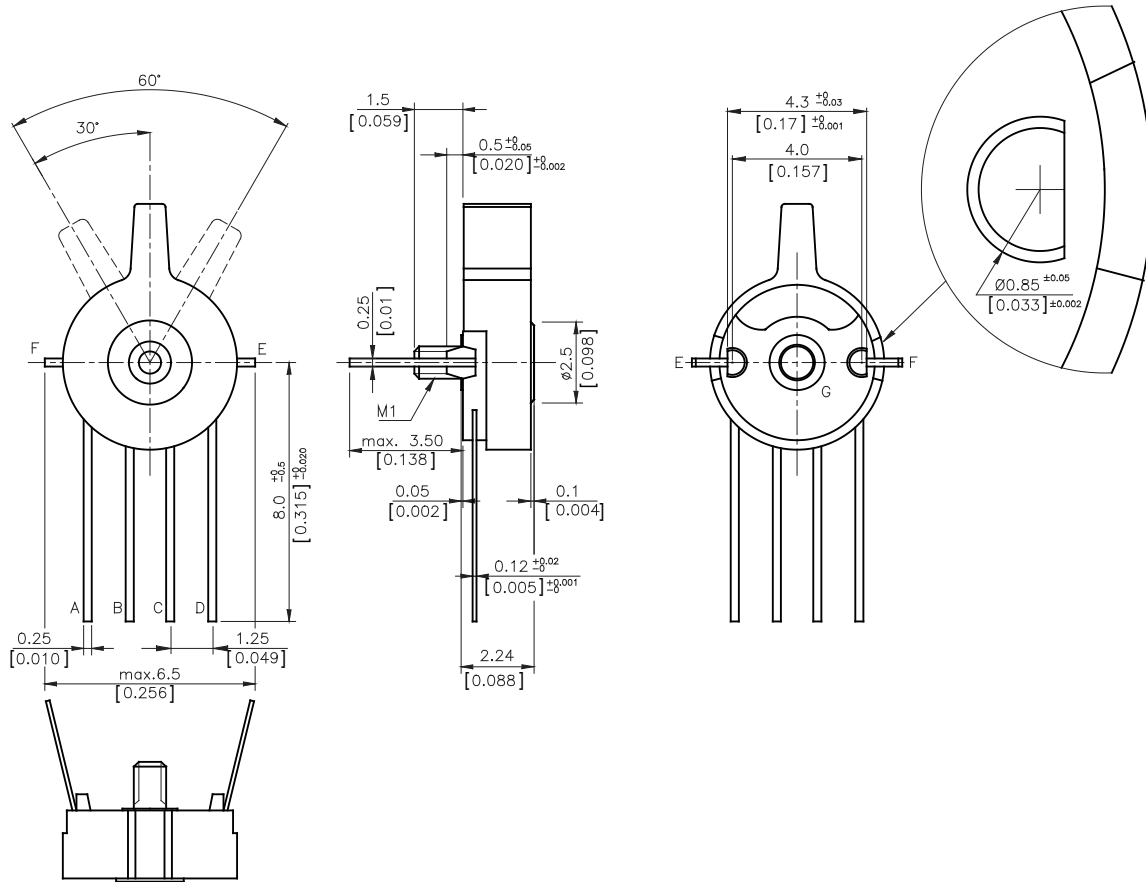
## 6. Environmental Conditions

Storage temperature	25°C
Storage humidity	60% RH
Purpose is to protect from high humidity and keep at driest condition as possible	

## 7. Recommended Process Parameters

Mounting	
Fixation nut mounting torque	Max. 200 cNcm
Gluing	
Types of glue	<p>Cyanoacrylates (non-blooming) , i.e. Loctite 401, 408, 460 and Sicomet 50, 63, 77</p> <p>Non-blooming types must be used to ensure that residuals from the curing process do not de-grade the component.</p>
Soldering	
Soldering temperature and time	300°C [572°F] for 3 s or 350°C [662°F] for 1 s
Soldering distance	<p>Min. 0.3 mm [0.012"] from housing</p> <p>To prevent damage of the switch system as a result of the soldering process, the ON/OFF switch must be turned to the ON position.</p> <p>Exceeding temperature, time and distance recommendations may damage the component. Mechanical stress on soldering terminals must be avoided during soldering</p>
Cleaning	
Cleaning solvents	<p>Aqua wash (Alpha 2110), Benzine</p> <p>Ultrasonic cleaning must be avoided as it may remove the lubricant inside the component.</p>

## 8. Mechanical Dimensions

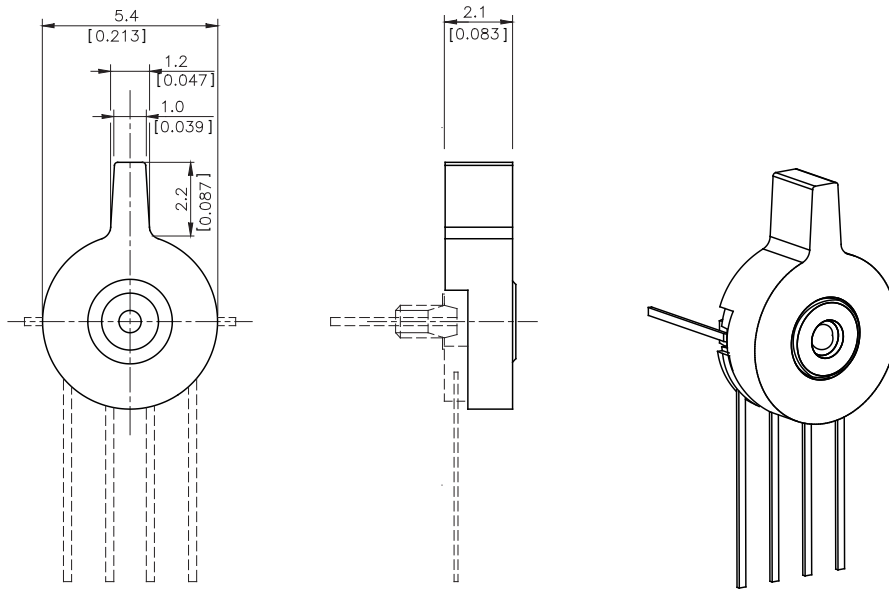


**Note:**

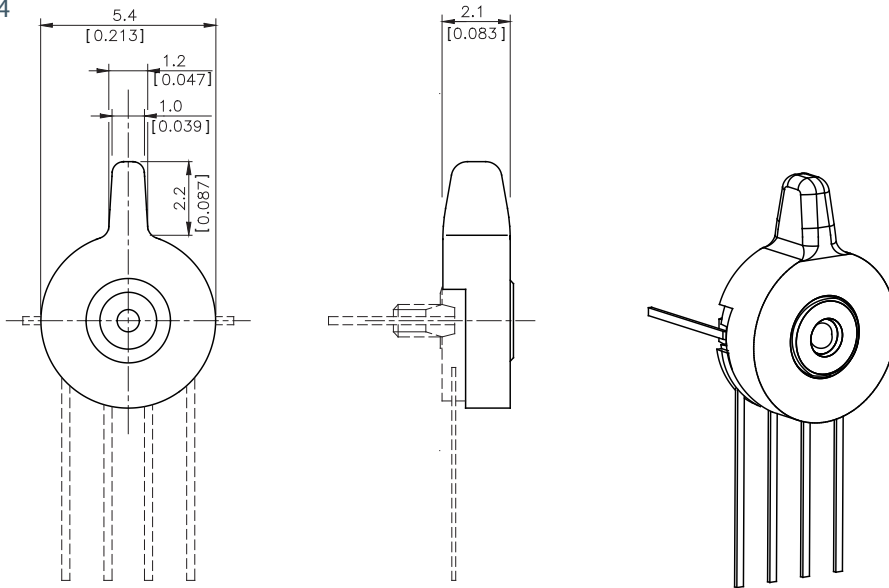
The standard measurement tolerance on the drawings is  $\pm 0.05$  mm/[0.002"]. Tolerances which differ from this value will be indicated on the drawings.

## 9. Toggle Styles

No. 01



No. 04



## 10. Plastic Colors

POM material: Please refer to the series 500 and 1600 included in the Sonion 'Plastic Color Assortment' binder

PA 6.6 material: Please refer to the series 100 included in the Sonion 'Plastic Color Assortment' binder



## 11. Product Specification Form

Name \_\_\_\_\_

Company \_\_\_\_\_

Customer Part No. \_\_\_\_\_

Parameters	Look at Page	Enter your choices	Guidelines
Model	2	SA 17	
Switch Diagram	5	A	3 positions on/off right side
		B	3 positions on/off left side
Toggle Styles	8		Please enter nos. 01 or 04
Plastic Colors	8		POM material: Please refer to the series 500 and 1600 included in the Sonion 'Plastic Color Assortment' binder  PA 6.6 material: Please refer to the series 100 included in the Sonion 'Plastic Color Assortment' binder