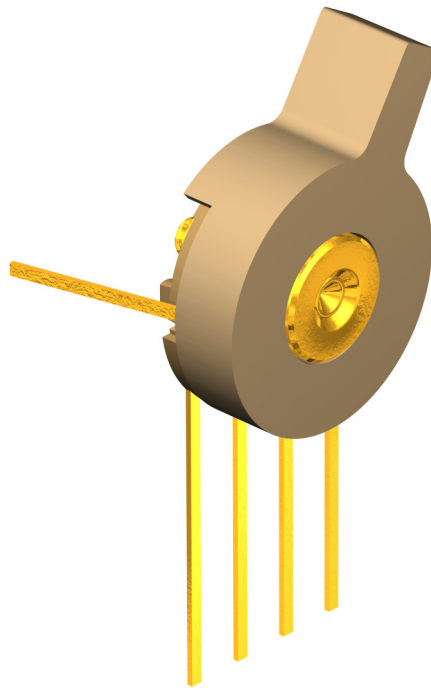


# Switches Model SA 27



## Features

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

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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
06 / Jun 07	History Revision added. Change of switch material. Force definition drawing added. Toggle styles added. Storage humidity added. Operational temperature and humidity removed. New lay-out. New data sheet design.
MT1022.A (07/08)	Tolerances on 'Mechanical Dimensions' corrected.
007/JUL-21-2009	No technical updates
008/2014-01-10	Updated design and new RoHS logo directive (2011/65/EU)
009/2014-02-17	Discontinue Toggle 02 and Toggle 03
010/2019-09-03	Change of storage temperature and humidity (CR3860)

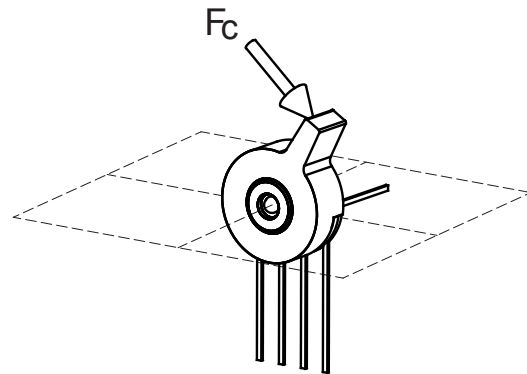
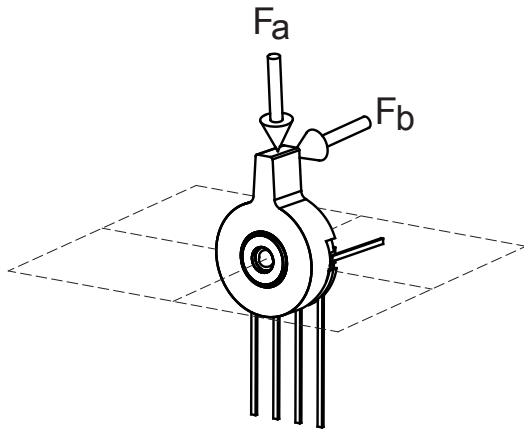
## 2. Mechanical Specifications

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



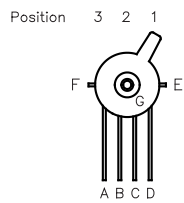
### 3. Electrical Specifications

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

### 4. Switching Diagram

SA 27A 3 positions

Switch shown in OFF position



OFF

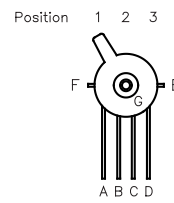
Position \ Terminal	1	2	3
A	●		
B	●	●	
C		●	●
D		●	●
G	●	●	●

OFF

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

SA 27B 3 positions

Switch shown in OFF position



OFF

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

OFF

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.

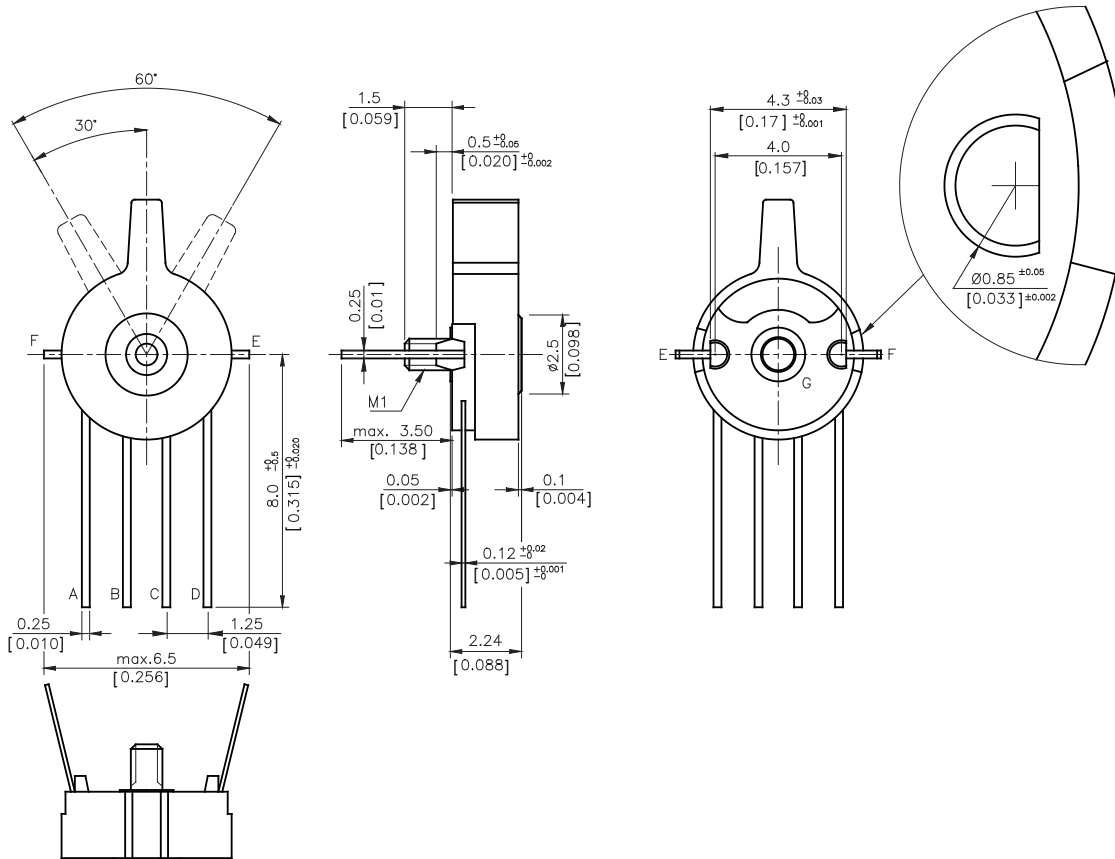
## 6. Environmental Conditions

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 degrade 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

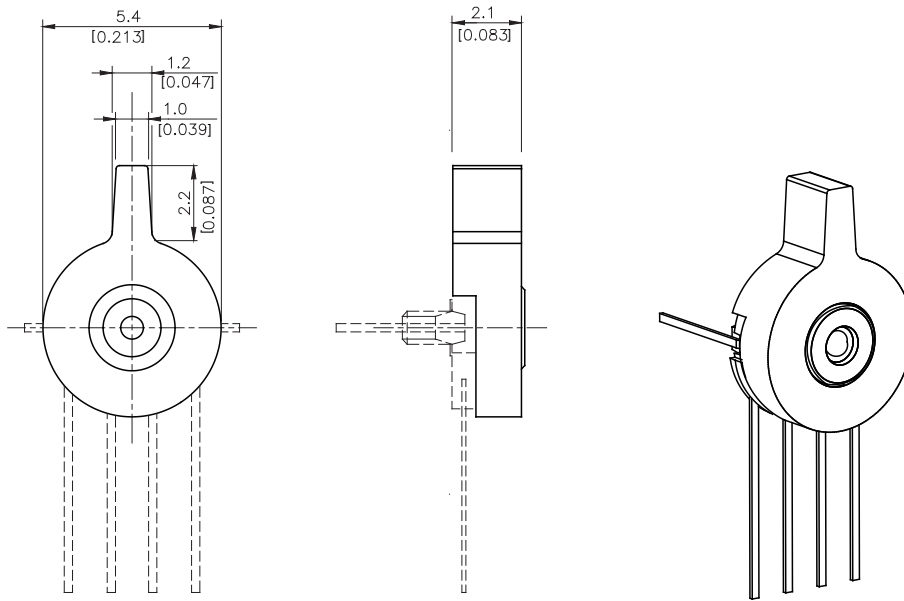


**Note:**

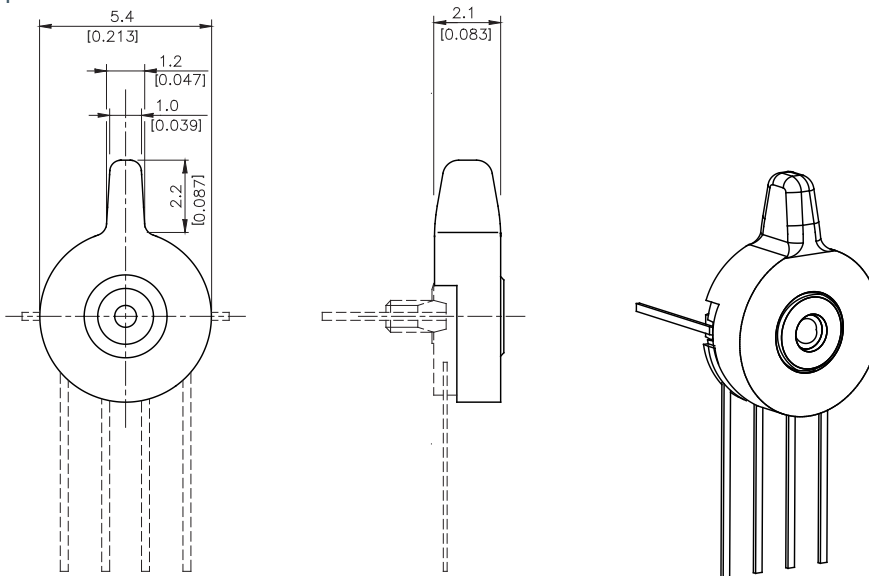
The standard measurement tolerance on the drawings is  $\pm 0.05$  mm/[0.002"]. Tolerances which differ from this value will be indicated on the drawings.

## 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 27	
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