

# SSSS7 2(H)mm, 2mm-travel Type

Compact general purpose type  
with specifiable soldering method



## Typical Specifications

| Items  |              | Specifications             |
|--|--------------|----------------------------|
| Rating (max.)/(min.)<br>(Resistive load)                     |              | 0.3A 4V DC / 50μA 3V DC    |
| Contact resistance<br>(Initial performance / After lifetime) |              | 70mΩ max. / 130mΩ max.     |
| Operating force  |              | Refer to the dimensions.   |
| Operating life   | Without load | 10,000 cycles              |
|  | With load    | 10,000 cycles (0.3A 4V DC) |

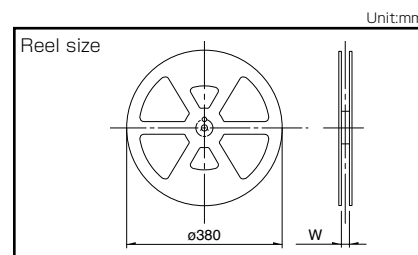
## Product Line

| Travel<br>(mm) | Actuator<br>direction | Actuator<br>length (mm) | Poles | Positions | Changeover<br>timing | Soldering | Operation | Minimum order unit (pcs.) |        | Products No.      | Drawing<br>No. |
|----------------|-----------------------|-------------------------|-------|-----------|----------------------|-----------|-----------|---------------------------|--------|-------------------|----------------|
|                |                       |                         |       |           |                      |           |           | Japan                     | Export |                   |                |
| 2              | Horizontal            | 2                       | 1     | 2         | Not specified        | Manual    | Standard  | 10,000                    | 50,000 | <b>SSSS710100</b> | 1              |
|                |                       |                         |       |           |                      | Reflow    |           | 2,000                     | 8,000  | <b>SSSS710607</b> | 2              |
|                |                       |                         |       | 3         | Non shorting         | Manual    |           | 8,000                     | 40,000 | <b>SSSS711100</b> | 3              |
|                |                       |                         |       |           |                      | Reflow    |           | 2,000                     | 8,000  | <b>SSSS711403</b> | 4              |

## Packing Specifications

### Taping

| Product No.       | Number of packages (pcs.) |               |                        | Reel width<br>W (mm) | Tape width<br>(mm) | Export package<br>measurements (mm) |
|-------------------|---------------------------|---------------|------------------------|----------------------|--------------------|-------------------------------------|
|                   | 1 reel                    | 1 case /Japan | 1 case /export packing |                      |                    |                                     |
| <b>SSSS710607</b> | 2,000                     | 4,000         | 8,000                  | 17.4                 | 16                 | 417×409×139                         |
| <b>SSSS711403</b> |                           |               |                        | 25.4                 | 24                 | 406×406×190                         |



### Bulk

| Product No.       | Number of packages (pcs.) |                        | Export package<br>measurements (mm) |
|-------------------|---------------------------|------------------------|-------------------------------------|
|                   | 1 case /Japan             | 1 case /export packing |                                     |
| <b>SSSS710100</b> | 10,000                    | 50,000                 | 400×270×290                         |
| <b>SSSS711100</b> | 8,000                     | 40,000                 |                                     |

Detector

Slide

Push

Rotary

Power


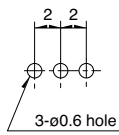

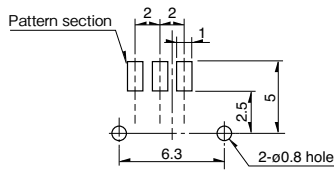
Dual-in-line  
Package Type

Small size  
General Use Type

Big size  
General Use Type

■ Dimensions

Unit:mm

| No. | Photo   | Style  | PC board mounting hole dimensions<br>(Viewed from direction A) |
|-----|---|--|--|
| 1   | <p><b>1-pole, 2-position</b></p>           | <p>Terminal No. ①</p> <p>Operating force with detent : 1.5N</p>  | <p>3-<math>\phi</math>0.6 hole</p>                             |
| 2   | <p><b>1-pole, 2-position Reflow</b></p>   | <p>Terminal No. ①</p> <p>Operating force with detent : 1.5N</p>  | <p>2-<math>\phi</math>0.8 hole</p>                             |
| 3   | <p><b>1-pole, 3-position</b></p>         | <p>Terminal No. ①</p> <p>Operating force with detent : a <math>\rightarrow</math> b } 1.75N<br/> c <math>\rightarrow</math> b }<br/> b <math>\rightarrow</math> a } 2.5N<br/> b <math>\rightarrow</math> c }</p> | <p>4-<math>\phi</math>0.6 hole</p>                             |
| 4   | <p><b>1-pole, 3-position Reflow</b></p>  | <p>Terminal No. ①</p> <p>Operating force with detent : a <math>\rightarrow</math> b } 1.75N<br/> c <math>\rightarrow</math> b }<br/> b <math>\rightarrow</math> a } 2.5N<br/> b <math>\rightarrow</math> c }</p> | <p>2-<math>\phi</math>0.8 hole</p>                             |

Detector  
Slide  
Push  
Rotary  
Power  
Dual-in-line  
Package Type  
Small size  
General Use Type  
Big size  
General Use Type

# SSSS7 2(H)mm, 2mm-travel Type

Detector

Slide

Push

Rotary

Power

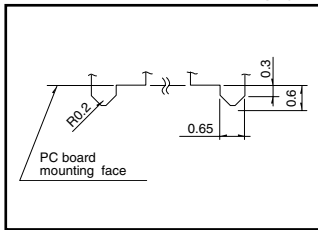
Dual-in-line  
Package Type

Small size  
General Use Type

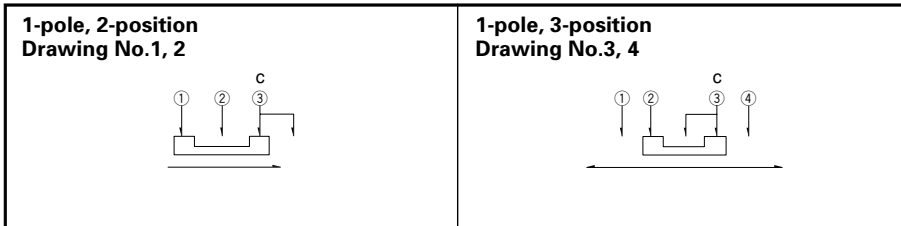
Big size  
General Use Type

## Detail of (a)

Unit:mm















## Circuit Diagram (Viewed from Direction A)



# Slide Switches

## List of Varieties

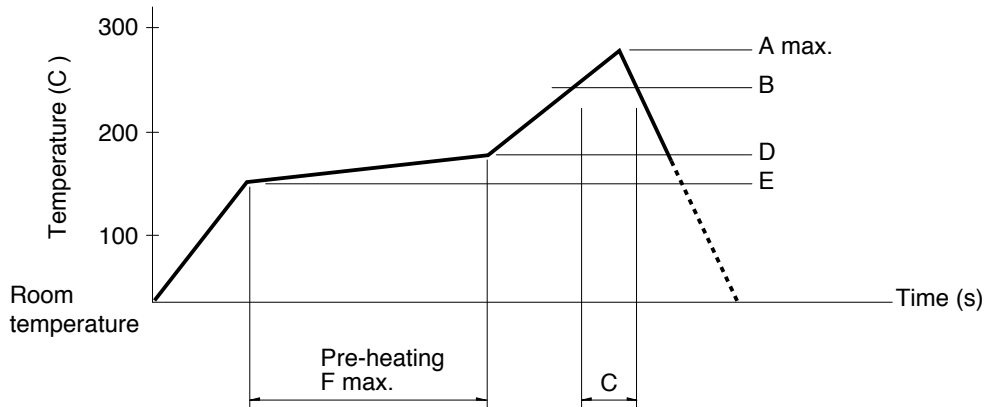
| Series                         |  | SSAJ  | SSAH  | SSSS8   | SSAL  | SSAG  | SSSS7   |
|--------------------------------|--|---|---|---|---|---|---|
| Photo                          |  |  |  |  |   |  |  |
| Actuator direction             | Horizontal                               | ●   | ●   | ●   | ●   | ●   | ●   |
|                                | Vertical                                 | —   | —   | ●   | —   | —   | —   |
| Poles-positions                | 1-2                                      | ●   | —   | ●   | ●   | —   | ●   |
|                                | 1-3                                      | —   | ●   | ●   | —   | ●   | ●   |
|                                | 1-4                                      | —   | —   | —   | —   | —   | —   |
|                                | 2-2                                      | —   | —   | ●   | —   | —   | —   |
|                                | 2-3                                      | —   | —   | ●   | —   | —   | —   |
|                                | 2-4                                      | —   | —   | —   | —   | —   | —   |
|                                | 4-2                                      | —   | —   | —   | —   | —   | —   |
| Travel (mm)                    |  | 1.4   | 1.5   | 1.5, 2  | 2   | 1.5   | 2   |
| Operating temperature range    |  | -10°C to +60°C  | -30°C to +60°C  | -40°C to +85°C  | -10°C to +60°C  |   | -40°C to +85°C  |
| Automotive use                 |  | —   | —   | —   | —   | —   | —   |
| Life cycle                     |  |  |  |  |  |  |  |
| Rating (max.) (Resistive load) |  | 10mA 5V DC  | 1mA 5V DC   | 0.3A 5V DC  | 10mA 5V DC  |   | 0.3A 4V DC  |
| Rating (min.) (Resistive load) |  | 50μA 3V DC  |   |   |   |   |   |
| Durability                     | Operating life without load              | 10,000 cycles<br>500mΩ max.   | 10,000 cycles<br>300mΩ max.   | 10,000 cycles<br>100mΩ max.   | 100,000 cycles<br>10Ω max.  | 30,000 cycles<br>(Lock side)<br>100,000 cycles<br>(Recoil side)<br>500mΩ max.       | 10,000 cycles<br>100mΩ max.   |
|                                | Operating life with load Load: as rating |   |   | 10,000 cycles<br>130mΩ max.   |   |   |   |
| Electrical performance         | Initial contact resistance               | 300mΩ max.  | 200mΩ max.  | 70mΩ max.   | 10Ω max.  | 200mΩ max.  | 70mΩ max.   |
|                                | Insulation resistance                    | 100MΩ min. 100V DC  |   |   |   |   |   |
|                                | Voltage proof                            | 100V AC for 1minute   |   |   |   |   |   |
| Mechanical performance         | Terminal strength                        | 3N for 1minute  |   |   |   |   |   |
|                                | Actuator strength                        | 10N   |   |   |   |   |   |
| Environmental performance      | Cold                                     | -40°C 96h   |   | -40°C 500h  | -40°C 96h   |   | -20°C 500h  |
|                                | Dry heat                                 | 85°C 96h  |   | 85°C 500h   | 85°C 96h  |   | 85°C 500h   |
|                                | Damp heat                                | 40°C, 90 to 95%RH<br>96h  | 60°C, 90 to 95%RH<br>240h   | 60°C, 90 to 95%RH<br>500h   | 40°C, 90 to 95%RH<br>96h  |   | 60°C, 90 to 95%RH<br>500h   |
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|                                     |     |
|-------------------------------------|-----|
| Slide Switches Soldering Conditions | 106 |
| Slide Switches Cautions             | 107 |

**Note**  
 ● Indicates applicability to all products in the series.

## Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple  $\phi$  0.1 to 0.2 CA (K) or CC (T) at soldering portion (copper foil surface).  
A heat resisting tape should be used for fixed measurement.
3. Temperature profile



| Series (Reflow type)          |  | A (°C)<br>3s max. | B (°C) | C (s) | D (°C) | E (°C) | F (s) |
|-------------------------------|--|-------------------|--------|-------|--------|--------|-------|
| SSSS2                         | Vertical<br>1-pole, 3-position   | 260               | 230    | 40    | 180    | 150    | 120   |
|                               | Horizontal<br>1-pole, 2-position<br>1-pole, 3-position<br>2-pole, 3-position |                   |        |       |        |        |       |
|                               | Vertical<br>1-pole, 2-position   | 250               |        |       |        |        |       |
| SSSS7                         |  | 260               |        |       |        |        |       |
| SSAH, SSAG, SSAJ, SSAL, SSSS8 |  | 260               |        |       |        |        |       |

### Notes

1. The condition mentioned above is the temperature on the mounting surface of a PC board. There are cases where the PC board's temperature greatly differs from that of the switch, depending on the PC board's material, size, thickness, etc. The above-stated conditions shall also apply to switch surface temperatures.
2. Soldering conditions differ depending on reflow soldering machines. Prior verification of soldering condition is highly recommended.

## Reference for Hand Soldering

| Series                 | Soldering temperature | Soldering time |
|------------------------|-----------------------|----------------|
| SSSF, SSSU             | 350±10°C              | 3+1/0s         |
| SSSS2                  | 350±10°C              | 4s max.        |
| SSSS9                  | 350±10°C              | 3s max.        |
| SSAH, SSAG, SSAJ, SSAL | 350±5°C               | 3s max.        |
| SSSS8                  | 330±5°C               | 3s max.        |
| SSSS7                  | 320±5°C               | 3s max.        |
| SSAC                   | 300±10°C              | 2s max.        |

## Reference for Dip Soldering

(For PC board terminal types)

| Series     | Items                  |                 | Dip soldering         |                       |
|------------|------------------------|-----------------|-----------------------|-----------------------|
|            | Preheating temperature | Preheating time | Soldering temperature | Duration of immersion |
| SSSS2      | 100°C max.             | 60s max.        | 260±5°C               | 3±1s                  |
| SSSS9      | 120°C max.             | 60s max.        | 260±5°C               | 5+0/-1s (2 times)     |
| SSSF, SSSU | 100°C max.             | 60s max.        | 260±5°C               | 10±1s/5±1s            |
| SSAC       | 100°C max.             | 60s max.        | 260±5°C               | 5±1s                  |



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