



Detection from both left and right directions contributes to improved and flexible design of the set mechanism.

## Detector

Slide

Push

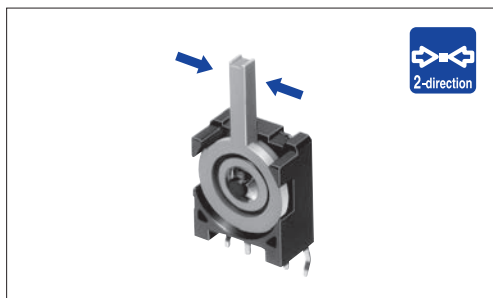
Rotary

Encoders

Power

Dual-in-line  
Package Type

TACT Switch™



## Typical Specifications

| Items                                                  |              | Specifications                          |
|--------------------------------------------------------|--------------|-----------------------------------------|
| Rating (max.) / (min.)<br>(Resistive load)             |              | 0.1A 12V DC / 50 $\mu$ A 3V DC          |
| Contact resistance<br>(Initial / After operating life) |              | 100m $\Omega$ max. / 300m $\Omega$ max. |
| Operating force                                        |              | 0.7N max.                               |
| Operating life                                         | Without load | 50,000cycles                            |
|                                                        | With load    | 50,000cycles (0.1A 12V DC)              |

## Product Line

| Poles | Positions | Changeover timing | Terminal type | Mounting method    | Minimum order unit (pcs) |        | Product No. | Drawing No. |
|-------|-----------|-------------------|---------------|--------------------|--------------------------|--------|-------------|-------------|
|       |           |                   |               |                    | Japan                    | Export |             |             |
| 1     | 2         | Non shorting      | For PC board  | PC board           | 600                      | 3,000  | SSCF110100  | 1           |
|       |           |                   |               |                    |                          |        | SSCF210100  | 2           |
|       |           |                   | For Lead      | Screw              |                          |        | SSCF210300  | 3           |
|       |           |                   | For PC board  | PC board with hook |                          |        | SSCF310100  | 4           |

## Note

Other varieties are also available. Please inquire.

## Packing Specifications

## Bulk

| Number of packages (pcs.) |                         | Export package measurements (mm) |
|---------------------------|-------------------------|----------------------------------|
| 1 case / Japan            | 1 case / export packing |                                  |
| 600                       | 3,000                   | 400 × 270 × 290                  |

## Dimensions

Unit:mm

| No. | Photo | Style | PC board mounting hole dimensions |
|-----|-------|-------|-----------------------------------|
| 1   |       |       |                                   |

Refer to P.66 for soldering conditions.

## SSCF

Unit:mm

## ■ Dimensions

| Dimensions |                                  | Style                                    |  |
|------------|----------------------------------|------------------------------------------|--|
| No.        | Photo                            |                                          |  |
| 2          | For PC board<br>(Screw mounting) |                                          |  |
| 3          | For Lead<br>(Screw mounting)     |                                          |  |
| 4          | For PC board<br>(With hook)      |                                          |  |
|            |                                  | <b>PC board mounting hole dimensions</b> |  |

## Detector

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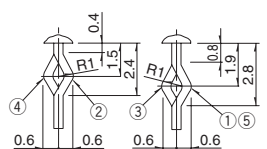
Dual-in-line  
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### Terminal Type

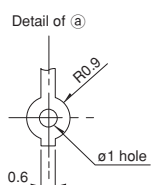
Unit:mm

**For PC board**



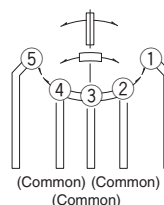
Thickness of board in use : t1.2 , t1.6

## For Lead

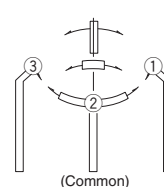


## Circuit Diagram

**For PC board**



## For Lead



## List of Varieties (General-purpose Type)

| Series                            |                                                               | General-purpose Type                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|-----------------------------------|---------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                   |                                                               | SSCT                                                                              | SSCF                                                                              | SSCW                                                                              | SPVQ5                                                                               | SSCL                                                                                |
| Photo                             |                                                               |  |  |  |  |  |
| Operation type                    |                                                               | Two-way                                                                           |                                                                                   |                                                                                   | One-way                                                                             | Two-way                                                                             |
| Dimensions (mm)                   | W                                                             | 12.5                                                                              | 11                                                                                | 13.1                                                                              | 13.8                                                                                | 11                                                                                  |
|                                   | D                                                             | 5                                                                                 | 5.8                                                                               | 11.35                                                                             |                                                                                     | 16.1                                                                                |
|                                   | H                                                             | 11.5                                                                              | 12.4                                                                              | 5.3                                                                               | 5.8                                                                                 | 5.3                                                                                 |
| Operating temperature range       |                                                               | - 40℃ to + 85℃                                                                    |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Automotive use                    |                                                               |  |  |  |  |  |
| Life cycle (availability)         |                                                               |  |  |  |  |  |
| Poles / Positions                 |                                                               | 1 / 2                                                                             |                                                                                   | 1 / 1                                                                             | 1 / 2                                                                               |                                                                                     |
| Rating (max.)<br>(Resistive load) |                                                               | 0.1A 12V DC                                                                       |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Rating (min.)<br>(Resistive load) |                                                               | 50μA 3V DC                                                                        |                                                                                   | 100μA 3V DC                                                                       | 50μA 5V DC                                                                          |                                                                                     |
| Durability                        | Operating life without Load                                   | 10,000cycles<br>500mΩ max.                                                        | 50,000cycles<br>300mΩ max.                                                        | 100,000cycles<br>1Ω max.                                                          | 300,000cycles<br>1Ω max.                                                            | 50,000cycles<br>1Ω max.                                                             |
|                                   | Operating life with Load<br>Rating (max.)<br>(Resistive load) | 10,000cycles<br>500mΩ max.                                                        | 50,000cycles<br>300mΩ max.                                                        | 100,000cycles<br>1Ω max.                                                          | 300,000cycles<br>1Ω max.                                                            | 50,000cycles<br>1Ω max.                                                             |
| Electrical performance            | Initial contact resistance                                    | 200m Ω max.                                                                       | 100m Ω max.                                                                       | 500m Ω max.                                                                       |                                                                                     |                                                                                     |
|                                   | Insulation resistance                                         | 100MΩ min.<br>250V DC                                                             | 100MΩ min.<br>100V DC                                                             | 100M Ωmin.<br>250V DC                                                             | 100MΩ min.<br>500V DC                                                               | 100MΩ min.<br>100V DC                                                               |
|                                   | Voltage proof                                                 | 250V AC<br>for 1minute                                                            | 100V AC<br>for 1 minute                                                           | 250V AC<br>for 1minute                                                            | 500V AC<br>for 1minute                                                              | 100V AC<br>for 1minute                                                              |
| Mechanical performance            | Terminal strength                                             | 3N for 1minute                                                                    | 5N for 1minute                                                                    | ——                                                                                | ——                                                                                  | ——                                                                                  |
|                                   | Actuator strength                                             | 20N                                                                               | 10N                                                                               | 20N                                                                               |                                                                                     | 10N                                                                                 |
| Environmental performance         | Cold                                                          | - 40 ± 2℃ for 500h                                                                |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|                                   | Dry heat                                                      | 85 ± 2℃ for 500h                                                                  |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|                                   | Damp heat                                                     | 60 ± 2℃ , 90 to 95%RH for 500h                                                    |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
| Operation force                   |                                                               | 0.7 ± 0.3N                                                                        | 0.7N max.                                                                         | 1N max.                                                                           | 2N max.                                                                             | 0.7N max.                                                                           |
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### Note

- indicates applicability to all products in the series.

Detector

Slide

Push

Rotary

Encoders

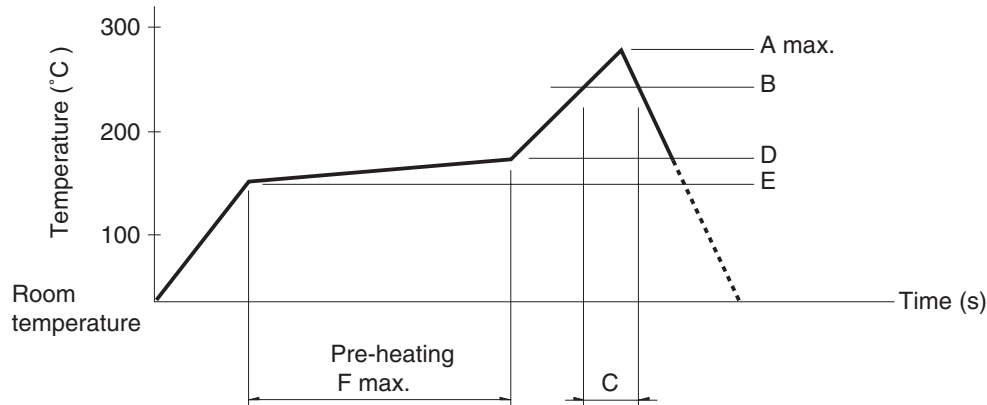
Power

Dual-in-line  
Package Type

TACT Switch™

## Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple 0.1 to 0.2  $\phi$  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) 3s max. | B (°C) | C (s) | D (°C) | E (°C) | F (s) |
|----------------------|----------------|--------|-------|--------|--------|-------|
| SPPB                 | 250            | 230    | 40    | 180    | 150    | 120   |
| SPPW8                |                |        | 35    |        |        |       |
| SPVE                 | 260            |        | 40    |        |        |       |
| SPVL                 |                |        |       |        |        |       |
| SPVM                 |                |        |       |        |        |       |
| SPVN                 |                |        |       |        |        |       |
| SPVP                 |                |        |       |        |        |       |
| SPVR                 |                |        |       |        |        |       |
| SPVS                 |                |        |       |        |        |       |
| SPVT                 |                |        |       |        |        |       |
| SSCM                 |                |        |       |        |        |       |
| SSCQ                 |                |        |       |        |        |       |
| SPVQC                | 250            |        |       |        |        |       |

## 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, surface 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 |
|--------------------------------------------------------------------------------|-----------------------|----------------|
| SPVS, SPVN, SPVP, SPVT, SPVM, SPVR, SPVE, SPPW8, SSCQ, SSCM, SPVL, SSCT, SPVQC | 350 $\pm$ 5°C         | 3s max.        |
| SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SSCN, SPVQA                          | 300 $\pm$ 10°C        | 3 + 1 / 0s     |
| SPPB                                                                           | 350 $\pm$ 5°C         | 5s max.        |
| SSCF                                                                           | 350 $\pm$ 10°C        | 3 + 1 / 0s     |

## Reference for Dip Soldering (For PC board terminal types)

| Series                                                | Items                  |                 | Dip soldering         |                       |
|-------------------------------------------------------|------------------------|-----------------|-----------------------|-----------------------|
|                                                       | Preheating temperature | Preheating time | Soldering temperature | Duration of immersion |
| SSCT, SPVQ1, SPVQ3, SPVQ6, SPVQ7, SPVQ8, SPVQ9, SPVQA | 100 $\pm$ 10°C         | 60s max.        | 260 $\pm$ 5°C         | 5 $\pm$ 1s            |
| SPPW8, SPPB                                           | 100°C max.             | 60s max.        | 255 $\pm$ 5°C         | 5 $\pm$ 1s            |
| SSCF                                                  | —                      | —               | 260 $\pm$ 5°C         | 5 $\pm$ 1s            |