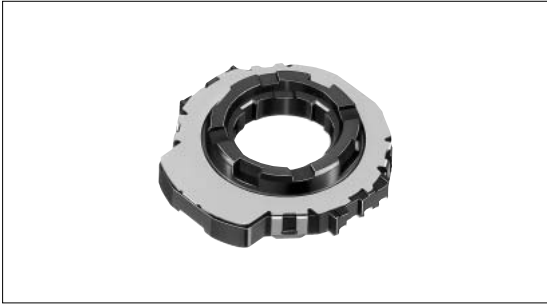




TACT switch™ adaptable hollow center adds flexibility in multifunctioning the set.

Hollow Shaft Type Devices



Typical Specifications

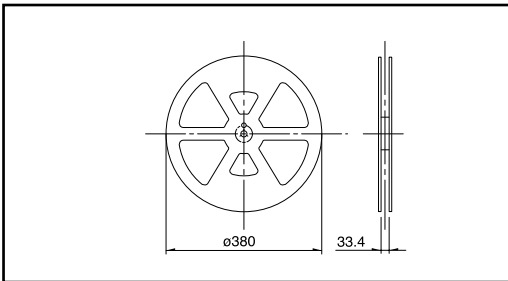
| Items | | Specifications |
|--|------------------|--|
| Rating(max.)(min.) (Resistive load) | | 10mA 5V DC/50μA 3V DC |
| Output voltage | | 1V max. at 1mA 5V DC (Resistive load) |
| Operating life | Without resistor | 50,000cycles min. |
| | With resistor | 50,000cycles min. |

Product Line

| Detent torque (mN·m) | Number of detent | Number of pulse | Soldering | Minimum order unit (pcs.) | Product No. |
|-------------------------|------------------|-----------------|-----------|------------------------------|-------------|
| 5 ± 2.5 | 18 | 9 | Reflow | 1,600 | SRGP300100 |

Taping Specification (Taping Packaging)

Reel Size Unit:mm



| Number of packages(pcs.) | | | Tape width (mm) |
|--------------------------|-------------------|----------------------------|--------------------|
| 1 reel | 1 case / Japan | 1 case / export packing | |
| 400 | 800 | 1,600 | 32 |

Encoder Type

Potentiometer Type

Dimensions

Unit:mm

| Style | PC board mounting hole and land dimensions |
|--|--|
| <p>Phase difference of code portion</p> <p>Clockwise Counter-clockwise</p> <p>(40°) (20°)</p> <p>Detent position</p> <p>ON OFF ON OFF</p> <p>T1 T2 T3 T4</p> <p>T1, T3=1 / 4T ± 1 / 8T T2, T4=Phase difference shall not be reversed</p> | |

Notes





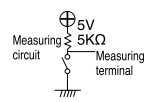
- Please contact us for automotive use products.
- Order products in N minimum order units (1 reel or 1 case).

List of Varieties

Hollow Shaft
Type Devices

Encoder
Type

Potentiometer
Type

| Type | | Hollow type | | | | |
|--|--------------------------------------|--|---|---|---|--------------|
| | | 17mm size | | 22mm size | 30mm size | |
| Series | | SRGP30 | SRGP40 | SRGP20 | SRGPWJ | |
| Photo | |  |  |  |  | |
| Output | | Incremental | | | | |
| Outline specifications | Shaft types | Hollow shaft | | | | |
| | Operating direction | Vertical | | | | |
| | Number of pulse/ Number of detent | 9/18 | 12/24 | 10/20 | 16/16 16/32 | |
| | Push switch (Travel mm) | Without | | | | |
| | Optional functions | _____ | | | | |
| | Changeover angle | 20° | 15° | 18° | 22.5° | |
| Dimensions (mm) | W | 17.5 | | 23.6 | 31.8 | |
| | D | 18.5 | 18.25 | 23 | 32 | |
| | H | 2.3 | 1.55 | 4.5 | | |
| Soldering | Manual soldering | 350 ± 5 , 3s max. | 350 ± 10 , 3 ± 0.5s max. | 350 ± 10 , 3 ± 0.5s | | |
| | Dip soldering | _____ | | 260 ± 5 , 5 ± 1s | | |
| | Reflow soldering | Please see P.198 | | | | |
| Maximum operating current(Resistive load) | | -10 to +60 | | -40 to +85 | | |
| Electrical performance | Output wave | 1V max. at 5V DC, 1mA (resistive load)  | | | | |
| | Insulation resistance | 100M min. 100V DC | | | | |
| | Voltage proof | 100V AC for 1minute | | | | |
| Mechanical performance | Rotational torque | 5 ± 2.5mN· m | 2 ± 1mN· m | 7 ± 3mN· m | 13 ± 4mN· m | |
| | | | 3.5 ± 1mN· m | | | 6.5 ± 4mN· m |
| | Terminal strength | _____ | | 5N for 1minute | | |
| | Actuator strength | Rotational direction | 20N | | 40N | |
| Push direction | | | | | | |
| Vibration | | 10 to 55 to 10Hz/min., the amplitude is 1.5mm for all the frequencies, in the 3 direction of X, Y and Z for 2 hours respectively | | | | |
| Environmental performance | Cold | -40 ± 2 for 96h | -20 ± 2 for 96h | | | |
| | Dry heat | 85 ± 2 for 96h | | | | |
| | Damp heat | 40 ± 2 , 90 to 95%RH for 96h | | | | |
| Page | | 450 | 451 | 452 | | |

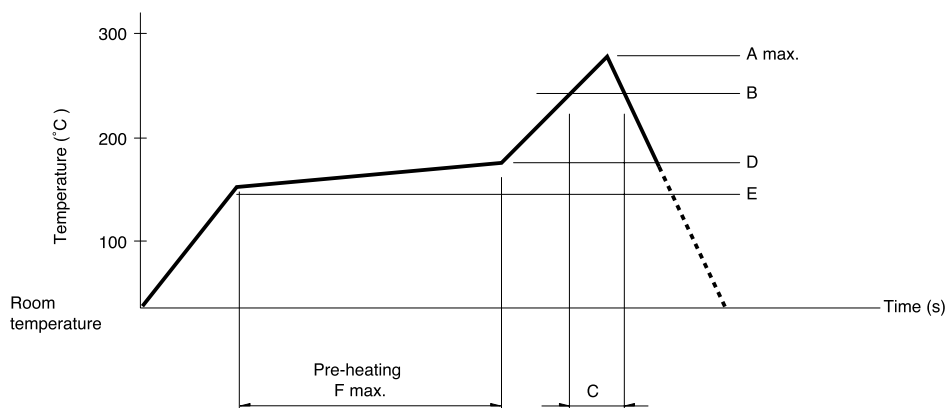
Note

※ The operating temperature range for automotive applications can be raised upon request. Please contact us for requirements of this kind.

Soldering Conditions

Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple 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) Max | B (°C) | C (s) | D (°C) | E (°C) | F (s) |
|----------------------|------------|--------|-------|--------|--------|-------|
| SRGP30 | 240 | 230 | 20 | 150 | 150 | 120 |
| SRGP40 | 260 | | 40 | 180 | | |

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. You are requested to verify the soldering conditions thoroughly beforehand.