

Low-profile type with excellent operability  
adds flexibility in set design



#### Typical Specifications



| Items                       |             | Specifications                                   |
|-----------------------------|-------------|--------------------------------------------------|
| Total resistance tolerance  |             | ±20%                                             |
| Maximum operating voltage   |             | 150V AC (RS60N Series)<br>350V AC (RSA0N Series) |
| Operating force             | Single-unit | $0.3^{+0.5}_{-0.25}$ N                           |
|                             | Dual-unit   | $0.4^{+0.5}_{-0.35}$ N                           |
| Operating life              |             | 30,000 cycles                                    |
| Operating temperature range |             | −10°C to +60°C                                   |

#### Product Line

| Number of resistor elements | Travel (mm) | Lever type  | Length of lever (mm) | Total resistance (k Ω) | Resistance taper | Terminal style | Minimum order unit (pcs.) |        | Products No.        | Drawing No. |
|-----------------------------|-------------|-------------|----------------------|------------------------|------------------|----------------|---------------------------|--------|---------------------|-------------|
|                             |             |             |                      |                        |                  |                | Japan                     | Export |                     |             |
| Single-unit                 | 60          | 9-T (T-Bar) | 8.2                  | 10                     | 15A              | For PC board   | 300                       | 600    | <b>RS60N111900H</b> | 1           |
|                             | 100         |             |                      |                        |                  |                | 200                       | 400    | <b>RSA0N111900Q</b> | 2           |
| Dual-unit                   | 60          |             |                      |                        |                  |                | 300                       | 600    | <b>RS60N1219A04</b> | 3           |
|                             | 100         |             |                      |                        |                  |                | 200                       | 400    | <b>RSA0N1219A03</b> | 4           |

#### Note

Other varieties are also available. Refer to "Other Specifications" (P.403).

#### Packing Specifications

##### Tray

| Travel (mm) | Number of packages (pcs.) |                        | Export package measurements (mm) |
|-------------|---------------------------|------------------------|----------------------------------|
|             | 1 case /Japan             | 1 case /export packing |                                  |
| 60          | 300                       | 600                    | 517×377×371                      |
| 100         | 200                       | 400                    |                                  |

Refer to P.403 for other specifications.  
Refer to P.403 for details of lever types.  
Refer to P.404 for ordering products not listed.  
Refer to P.417 for soldering conditions

## Dimensions

Unit:mm

| No. | Style        | PC board mounting hole dimensions<br>(Viewed from mounting side) |
|-----|--------------|------------------------------------------------------------------|
| 1   | <p>t=1.2</p> |                                                                  |
| 2   | <p>t=1.2</p> |                                                                  |
| 3   | <p>t=1.2</p> |                                                                  |
| 4   | <p>t=1.2</p> |                                                                  |

## Low-profile Master Type (N Fader) / Other Specifications

In addition to the products listed, we can accommodate the follow specifications.

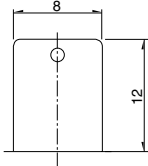
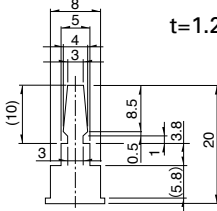
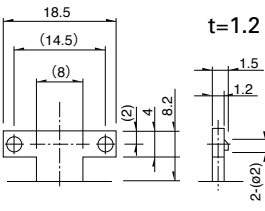
### Total Resistance Variety

| Total resistance (k $\Omega$ ) | 10 | 50 | 100 | 250 |
|--------------------------------|----|----|-----|-----|
|--------------------------------|----|----|-----|-----|

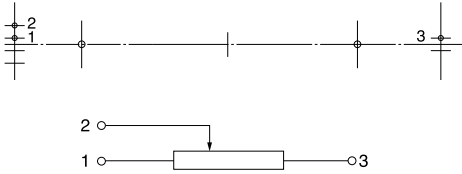
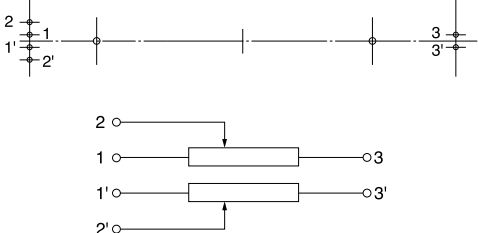
### Resistance Taper

| Resistance taper | 15A | 1B | 10A |
|------------------|-----|----|-----|
|------------------|-----|----|-----|

### Lever Types

| Configuration code | 1                                                                                 | 4                                                                                  | 9-T (T-Bar)                                                                         |
|--------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Dimensions         |  |  |  |

### Terminal Layout / Circuit Diagram (Viewed from Mounting Side)

|                                                                                                        |                                                                                                       |
|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <p>Single-unit</p>  | <p>Dual-unit</p>  |
|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|

### Corresponding Specification

| Dust cover | Available |
|------------|-----------|
|------------|-----------|

### Note

Marked are specifications recommended by Alps Alpine.

When ordering product varieties that are not listed, specify referring to the examples below.

## Sample Part Number

**R S 6 0 N 1 1 1 - 9 T - A 1 0 3**

Travel

|    |       |
|----|-------|
| 60 | 60mm  |
| A0 | 100mm |

Number of resistor elements

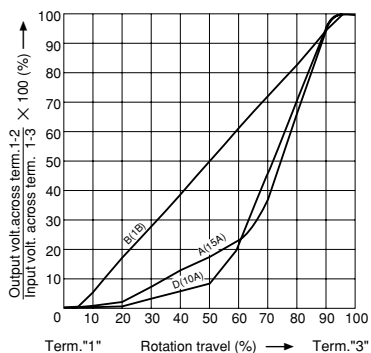
|             |   |
|-------------|---|
| Single-unit | 1 |
| Dual-unit   | 2 |

Lever types

| Code | Configuration code |
|------|--------------------|
| 01   | 1                  |
| 04   | 4                  |
| 9T   | 9-T (T-Bar)        |

Resistance taper

| Code | Resistance taper |
|------|------------------|
| A    | 15A              |
| B    | 1B               |
| D    | 10A              |



Total resistance

| Code | Total resistance (k Ω) | Code | Total resistance (k Ω) |
|------|------------------------|------|------------------------|
| 103  | 10                     | 104  | 100                    |
| 503  | 50                     | 254  | 250                    |

# Slide Potentiometers

## List of Varieties

| Type                         |                                    | Standard Type                                                                     |                                                                                   | Master Type                                                                         | Low-profile Master Type                                                                                  |
|------------------------------|------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Series                       |                                    | Super Slide™                                                                      | Compact Reflow Type                                                               | K Fader                                                                             | N Fader                                                                                                  |
|                              |                                    | RS □□ 1                                                                           | RS08U                                                                             | RS □□ K                                                                             | RS □□ N                                                                                                  |
|                              |                                    | Single-unit/Dual-unit                                                             | Single-unit                                                                       | Single-unit/Dual-unit                                                               | Single-unit/Dual-unit                                                                                    |
| Photo                        |                                    |  |  |  |                       |
| Travel (mm)                  |                                    | 15, 20, 30, 45, 60                                                                | 8                                                                                 | 60, 100                                                                             |                                                                                                          |
| Direction of lever           |                                    | Vertical                                                                          |                                                                                   | Horizontal                                                                          | Vertical                                                                                                 |
| Lever material               |                                    | Metal / Resin                                                                     | Resin                                                                             | Metal                                                                               |                                                                                                          |
| Operating temperature range  |                                    | −25℃ to +70℃                                                                      | −10℃ to +70℃                                                                      | −10℃ to +60℃                                                                        |                                                                                                          |
| Operating life               |                                    | 15,000 cycles                                                                     | 10,000 cycles                                                                     | 100,000 cycles (Standard)<br>300,000 cycles (CP)                                    | 30,000 cycles                                                                                            |
| Available for automotive use |                                    | ○                                                                                 | —                                                                                 | —                                                                                   | —                                                                                                        |
| Life cycle (availability)    |                                    |  |  |  |                       |
| Electrical performance       | Total resistance (k Ω)             | 10, 20, 50, 100, 200                                                              | 10                                                                                | 10, 50, 100 (Standard)<br>10 (CP)                                                   | 10, 50, 100, 250                                                                                         |
|                              | Resistance taper                   | 10A, 15A, 1B, 3B, 4B                                                              | 1B                                                                                | 15A, 1B                                                                             | 15A, 1B, 10A                                                                                             |
|                              | Rated Power                        | Please see P.392                                                                  | 0.025W                                                                            | 0.25W                                                                               | 0.1W (RS60N)<br>0.25W (RSA0N)                                                                            |
|                              | Insulation resistance              | 100MΩ min. 250V DC                                                                | 100MΩ min. 100V DC                                                                | 100MΩ min. 250V DC                                                                  |                                                                                                          |
|                              | Voltage proof                      | 300V AC for 1 minute                                                              | 100V AC for 1 minute                                                              | 250V AC for 1 minute                                                                |                                                                                                          |
|                              | Center-taps                        | Without / With                                                                    | Without                                                                           |                                                                                     |                                                                                                          |
| Mechanical performance       | Operating force                    | 0.3 to 2.5N                                                                       | 0.17±0.15N                                                                        | Please see P.399                                                                    | Single-unit: 0.3 <sup>+0.5</sup> <sub>−0.25</sub> N<br>Dual-unit: 0.4 <sup>+0.5</sup> <sub>−0.35</sub> N |
|                              | Center detent                      | Without / With                                                                    | Without                                                                           |                                                                                     |                                                                                                          |
|                              | Stopper strength                   | 50N                                                                               | 5N                                                                                | 100N                                                                                |                                                                                                          |
|                              | Lever push-pull strength           | 50N                                                                               | 5N                                                                                | 100N                                                                                | 50N                                                                                                      |
|                              | Lever wobble (mm)<br>※ Both sides  | $\frac{2(2 \times L)}{20}$                                                        | —                                                                                 | $\frac{2(2 \times L)}{25}$                                                          |                                                                                                          |
|                              | Detent slip-out force              | Operating force +<br>(0.2 to 2N)                                                  | —                                                                                 | —                                                                                   | —                                                                                                        |
|                              | Lever deviation (mm)<br>※ One side | 0.5 max.                                                                          | —                                                                                 | 0.5 max.                                                                            | 0.5 max. (One side)                                                                                      |
| Terminal style               |                                    | Insertion                                                                         | Reflow                                                                            | Lead (Standard)<br>Connector (CP)                                                   | Insertion                                                                                                |
| Page                         |                                    | 386                                                                               | 395                                                                               | 396                                                                                 | 401                                                                                                      |

|                                             |     |
|---------------------------------------------|-----|
| Slide Potentiometers Soldering Conditions   | 417 |
| Potentiometer Cautions                      | 418 |
| Potentiometers Measurement and Test Methods | 420 |
| Potentiometers Resistance Taper             | 420 |

### Notes

1. "L" in the "Lever Wobble" column of the above table indicates the length of lever.
2. [RS □□]  
 indicates travel.
3. ○ Indicates applicability to some products in the series.

## Reference for Manual Soldering

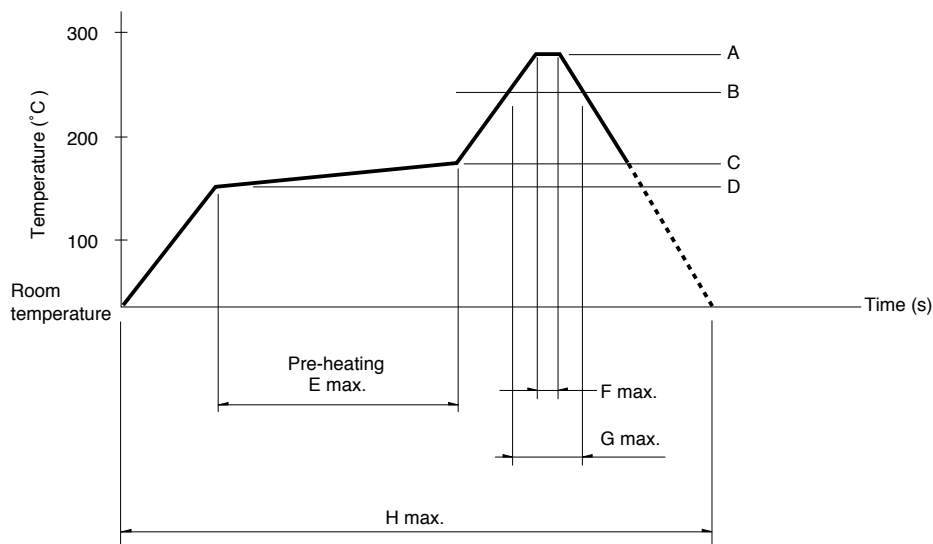
| Series                                                                                                     | Tip temperature | Duration of Soldering time | No. of solders |
|------------------------------------------------------------------------------------------------------------|-----------------|----------------------------|----------------|
| RS□□1, RS08U,<br>RS□□K (Standard), RS□□N,<br>RS□□N11S, RS6011□P,<br>RS□□N1□M,<br>RSA0K1□V (Motor terminal) | 350°C max.      | 3s max.                    | 1 time         |

## Reference for Dip Soldering

| Series                                           | Preheating                    |              | Dip soldering         |                | Number of soldering |
|--------------------------------------------------|-------------------------------|--------------|-----------------------|----------------|---------------------|
|                                                  | Soldering surface temperature | Heating time | Soldering temperature | Soldering time |                     |
| RS□□1, RS□□N,<br>RS□□N11S, RS6011□P,<br>RS□□N1□M | 100°C max.                    | 1 min. max.  | 260°C                 | 5s max.        | 1 time              |

## Example of Reflow Soldering Condition

Temperature profile



| Series | A     | B     | C     | D     | E      | F  | G   | H      | No. of reflows |
|--------|-------|-------|-------|-------|--------|----|-----|--------|----------------|
| RS08U  | 250°C | 200°C | 150°C | 150°C | 2 min. | 3s | 40s | 4 min. | 1 time         |

## Notes

1. When using an infrared reflow oven, solder may sometimes not be applied. Be sure to use a hot air reflow oven or a type that uses infrared rays in combination with hot air.
2. The temperatures given above are the maximum temperatures at the terminals of the products when employing a hot air reflow method. The temperature of the PC board and the surface temperature of the products may vary greatly depending on the PC board material, its size and thickness. Ensure that the surface temperature of the products does not rise to 250°C or greater.
3. Conditions vary to some extent depending on the type of reflow bath used. Be sure to give due consideration to this prior to use.

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[RSA0N11M9A04](#) [RSA0N1119A02](#)