

The thinnest possible body contributes to reduced size, height and weight of the set product



■ Typical Specifications



| Items                       | Specifications   |
|-----------------------------|--|
| Total resistance tolerance  | ±20%   |
| Maximum operating voltage   | 200V AC, 10V DC (RS60N Series)<br>500V AC, 10V DC (RSA0N Series) |
| Operating force             | 0.3 <sup>+0.5</sup> <sub>-0.25</sub> 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 (kΩ) | Resistance taper | Terminal style | Minimum order unit (pcs.) |        | Products No.        | Drawing No. |
|-----------------------------|-------------|-------------|----------------------|-----------------------|------------------|----------------|---------------------------|--------|---------------------|-------------|
|                             |             |             |                      |                       |                  |                | Japan                     | Export |                     |             |
| Single-unit                 | 60          | 4           | 20                   | 10                    | 1B               | For PC board   | 600                       | 1,200  | <b>RS60N11S4006</b> | 1           |
|                             | 100         | 9-T (T-Bar) | 8.2                  |                       |                  |                | 400                       | 800    | <b>RSA0N11S9A0K</b> | 2           |

Note

Other varieties are also available. Refer to "Other Specifications" (P.406).

■ Packing Specifications

Tray

| Travel (mm) | Number of packages (pcs.) |                        | Export package measurements (mm) |
|-------------|---------------------------|------------------------|----------------------------------|
|             | 1 case /Japan             | 1 case /export packing |                                  |
| 60          | 600                       | 1,200                  | 517×377×371                      |
| 100         | 400                       | 800                    |                                  |

■ Dimensions

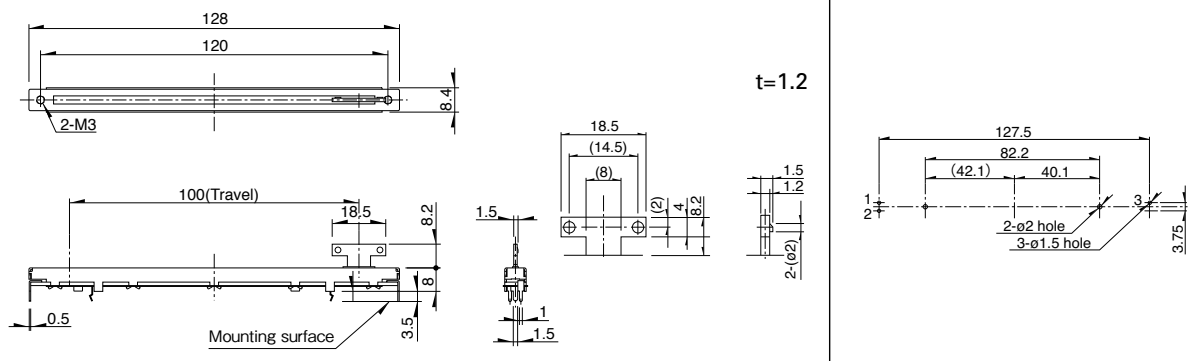
Unit:mm

| No. | Style | PC board mounting hole dimensions (Viewed from mounting side) |
|-----|-------|---|
| 1   |       |   |

Refer to P.406 for other specifications.  
Refer to P.407 for ordering products not listed.  
Refer to P.417 for soldering conditions.

Rotary Potentiometers  
 Slide Potentiometers  
 General-use  
 Mixer

■ Dimensions

| No. | Style  | PC board mounting hole dimensions<br>(Viewed from mounting side) |
|-----|--|--|
| 2   |  |  |

Low-profile Master Type (Slim Type) / Other Specifications

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

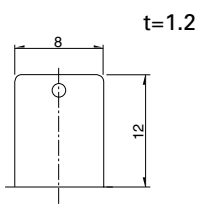
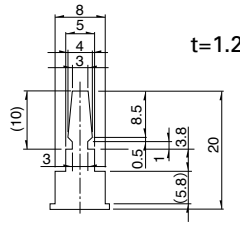
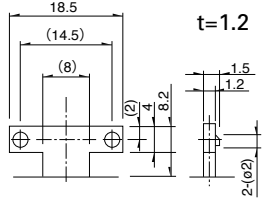
■ Total Resistance Variety

|                        |    |    |     |     |
|------------------------|----|----|-----|-----|
| Total resistance (k Ω) | 10 | 50 | 100 | 250 |
|------------------------|----|----|-----|-----|

■ Resistance Taper

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

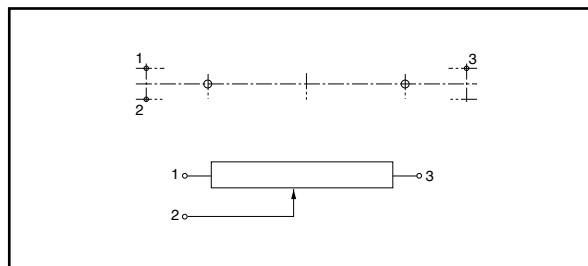
■ Lever Types

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

■ Corresponding Specification

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

■ Terminal Layout / Circuit Diagram



Note

Marked are specifications recommended by Alps Alpine.

# Low-profile Master Type (Slim Type) / Ordering Products Not Listed

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

## ■ Sample Part Number

**R S 6 0 N 1 1 S - 0 1 - B 1 0 3**

Travel

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

Number of resistor elements

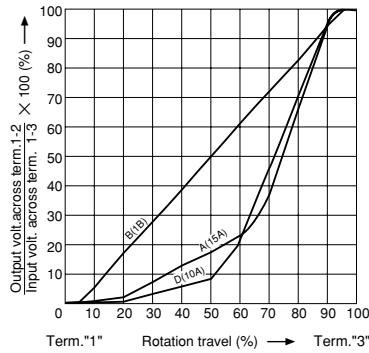
|             |   |
|-------------|---|
| Single-unit | 1 |
|-------------|---|

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                    |

Rotary Potentiometers  
 Slide Potentiometers  
 General-use  
 Mixer

| Type                         |                                   | Low-profile Master Type   |   | Motor-driven Master Type   |   |   |
|------------------------------|-----------------------------------|---|---|--|---|---|
| Series                       |                                   | Slim Type   | Super P Fader   | Motor N Fader  | Motor K Fader   | Motor V Fader   |
|                              |                                   | <b>RS □□ N11S</b>   | <b>RS6011 □ P</b>   | <b>RS □□ N1 □ M</b>  | <b>RSA0K1 □ V</b>   | <b>RSA0V11M</b>   |
|                              |                                   | Single-unit   | Single-unit/Dual-unit   | Single-unit/Dual-unit  | Single-unit/Dual-unit   | Single-unit   |
| Photo                        |                                   |  |  |  |  |  |
| Travel (mm)                  |                                   | 60, 100   | 60  | 60, 100  | 100   |   |
| Direction of lever           |                                   | Vertical  |   |  |   |   |
| Lever material               |                                   | Metal   |   |  |   | Resin   |
| Operating temperature range  |                                   | -10°C to +60°C  |   |  |   |   |
| Operating life               |                                   | 30,000 cycles   |   |  | 300,000 cycles  | 100,000 cycles  |
| Available for automotive use |                                   | —   | —   | —  | —   | —   |
| Life cycle                   |                                   |  |  |   |  |  |
| Electrical performance       | Total resistance (k Ω)            | 10, 50, 100, 250  | 10, 20, 50  | 10, 50, 100, 250   | 10  |   |
|                              | Resistance taper                  | 15A, 1B, 10A  |   | Single-unit: 1B<br>Dual-unit: Servo 1B<br>Audio 15A, 1B, 10A                       | 1B  |   |
|                              | Rated Power                       | 0.2W (RS60N11S)<br>0.5W (RSA0N11S)  | 0.2W (Single-unit)<br>0.1W (Dual-unit)  | 0.2W (RS60N1□M)<br>0.5W (RSA0N1□M)   | 0.5W  |   |
|                              | Insulation resistance             | 100MΩ min. 250V DC  |   |  |   |   |
|                              | Voltage proof                     | 250V AC for 1 minute  |   |  |   |   |
|                              | Center-taps                       | Without   |   |  |   |   |
| Mechanical performance       | Operating force                   | 0.3 <sup>+0.5</sup> <sub>-0.25</sub> N  | 0.5 <sup>+1.0</sup> <sub>-0.4</sub> N   | 0.8±0.5N   | Single-unit: 0.4±0.25N<br>Dual-unit: 0.25 to 0.9N                                   | —   |
|                              | Center detent                     | Without   |   |  |   |   |
|                              | Stopper strength                  | 100N  |   |  |   | 10N   |
|                              | Lever push-pull strength          | 50N   |   |  |   | 20N   |
|                              | Lever wobble (mm)<br>* Both sides | $\frac{2(2 \times L)}{25}$  |   |  |   |   |
|                              | Lever deviation (mm)              | 0.5 max. (One side)   |   |  |   |   |
| Terminal style               |                                   | Insertion   |   | Lead, Insertion  | Connector (Fader)<br>Lead (Motor)   | Connector   |
| Page                         |                                   | 405   | 408   | 411  |   |   |

|   |     |
|---|-----|
| Slide Potentiometers Soldering Conditions   | 417 |
| Potentiometer Cautions                      | 418 |
| Potentiometers Measurement and Test Methods | 420 |
| Potentiometers Resistance Taper             | 422 |

#### Notes

- Attenuation is specified for residual resistance.
- "L" in the "Lever Wobble" column of the above table indicates the length of lever.

## Reference for Manual Soldering

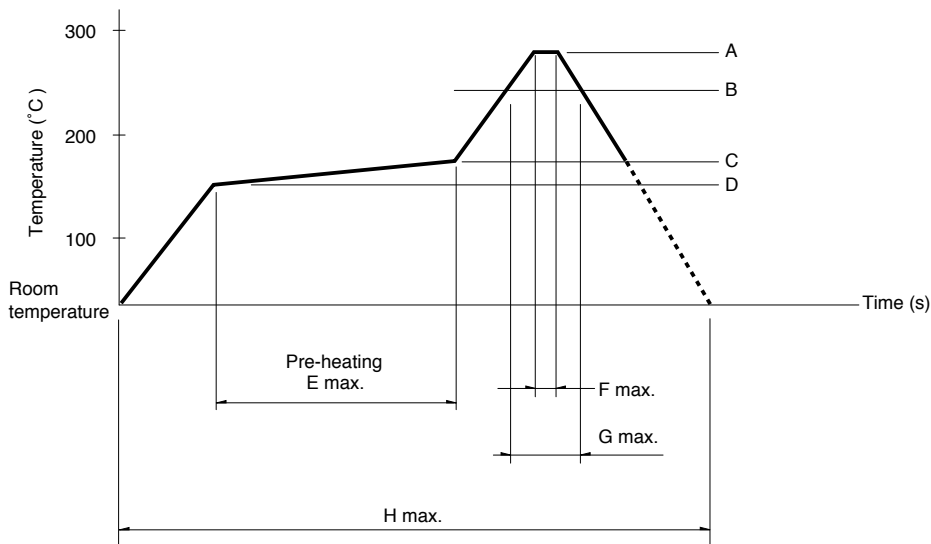
| Series   | Tip temperature | Duration of Soldering time | No. of solders |
|--|-----------------|----------------------------|----------------|
| RS□□1, RS08U,<br>RS□□K (Standard), RS□□N,<br>RS□□N11S, RS6011□P,<br>RS□□N1□M,<br>RSA0K1□V (Motor terminal) | 350°C max.      | 3s max.                  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