

Compact type potentiometer suitable for volume and tone controls



### ■ Typical Specifications

Items	Specifications
Total resistance tolerance	$\pm 30\%$
Maximum operating voltage	50V AC 20V DC (Single-unit only)
Total rotational angle	$200^\circ \pm 10^\circ$
Rotational torque	1 to 10mN·m 0.5 to 10mN·m (Reflow type)
Operating life	Without detent 10,000 cycles With detent 5,000 cycles
Operating temperature range	-10°C to +60°C

### ■ Product Line

Number of resistor elements	Mounting direction	Length of the shaft (mm)	Center detent	Total resistance(kΩ)	Resistance taper	Soldering	Minimum order unit (pcs.)		Products No.	Drawing No.		
							Japan	Export				
Single-unit	Vertical type	1	Without	50	1B	Manual	1,000	1,000	RK08H11100U3	1		
				10					RK08H11100UD			
				100	15A				RK08H11100XC			
		4.5	With	10	1B				RK08H11100A04			
				5					RK08H11100X7	2		
	Back-to-back mounting type	1	Without	10	1B	Reflow	1,000	1,000	RK08H1120A05	3		
				5					RK08H113003Q	4		
				10					RK08H113003G			
				50	15A	Manual			RK08H12100GP	1		
				10	15C				RK08H12100F3			
Dual-unit	Vertical type	1	Without	50	15A	Reflow			RK08H122005A	3		
				10	15C				RK08H123002K	4		
	Back-to-back mounting type			50	15C	Manual						
	Vertical type											

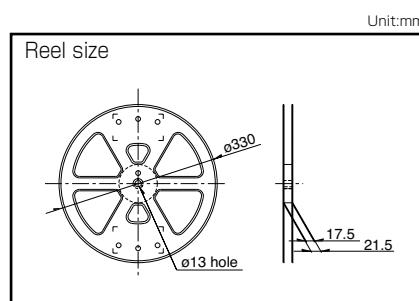
### Notes

- Other varieties are also available. Refer to "Other Specifications" (P.371).
- Dip soldering can be applied to the above products. Please specify if required Back-to-back mounting types are excluded.
- We recommend print boards with a thickness of 0.8mm to 1.2mm. For 1.6mm thickness board applications, please contact us.

### ■ Packing Specifications

#### Bulk / Taping

Soldering	Packing specifications	Number of packages (pcs.)			Tape width (mm)	Export package measurements (mm)
		1 reel	1 case /Japan	1 case /export packing		
Manual	Bulk	—	5,000	10,000	—	528×369×178
Reflow	Taping	1,000	4,000	4,000	16	401×397×139



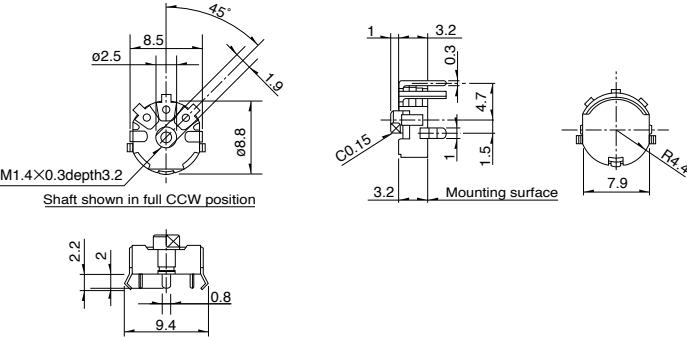
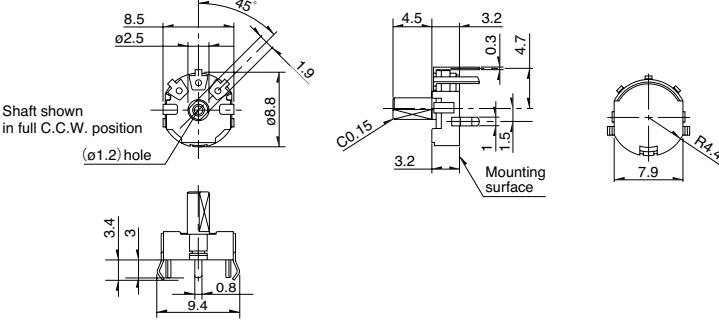
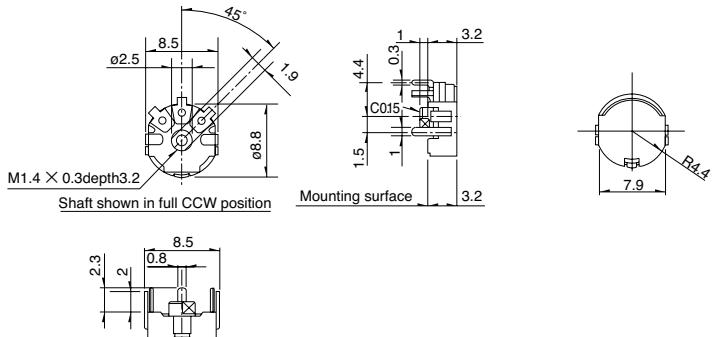
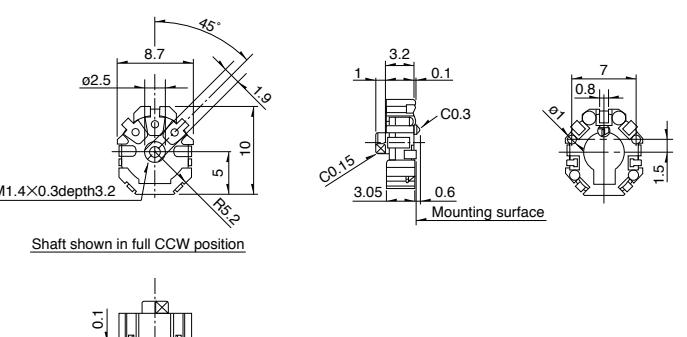
Refer to P.371 for other specifications.

Refer to P.371 for soldering conditions.

Refer to P.376 for ordering products not listed.

## Dimensions

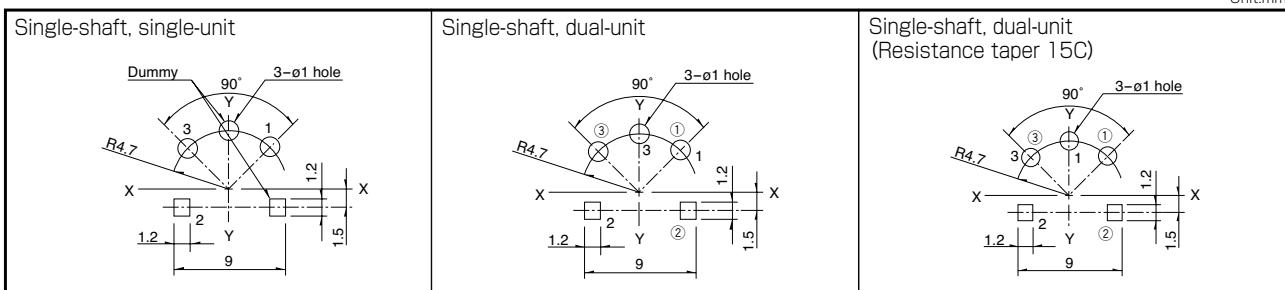
Unit:mm

No.	Photo	Style
1	<p><b>Vertical Type</b>  <b>Single-shaft, single-unit</b>  <b>RK08H1110</b>  <b>Single-shaft, dual-unit</b>  <b>RK08H1210</b></p> 	 <p>M1.4×0.3depth3.2 Shaft shown in full CCW position</p>
2	<p><b>Vertical Type</b>  <b>Single-shaft, single-unit</b>  <b>RK08H1110</b></p> 	 <p>Shaft shown in full C.C.W. position (ø1.2) hole</p>
3	<p><b>Back-to-back mounting type</b>  <b>Single-shaft, single-unit</b>  <b>RK08H1120</b>  <b>Single-shaft, dual-unit</b>  <b>RK08H1220</b></p> 	 <p>M1.4 × 0.3depth3.2 Shaft shown in full CCW position</p>
4	<p><b>Reflow-type</b>  <b>Single-shaft, single-unit</b>  <b>RK08H1130</b>  <b>Single-shaft, dual-unit</b>  <b>RK08H1230</b></p> 	 <p>M1.4×0.3depth3.2 Shaft shown in full CCW position</p>

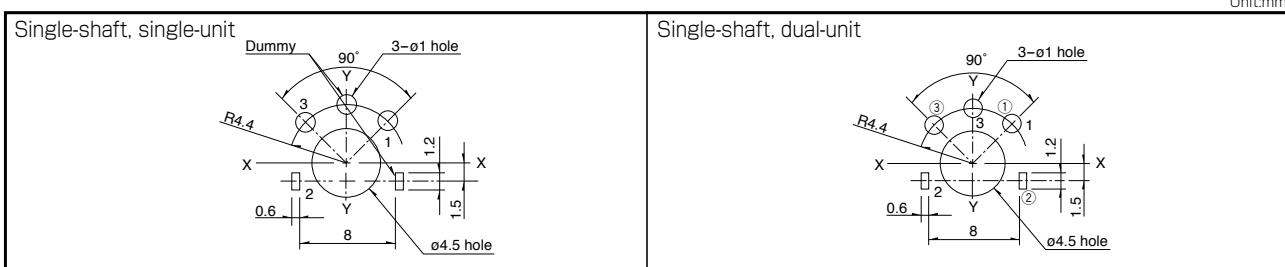
Rotary Potentiometers  
 Slide Potentiometers  
 Metal Shaft  
 Insulated Shaft  
 Knob Operating  
 Through Shaft Type  
 Ring Type

PC Board Mounting Hole Dimensions / Terminal Layout

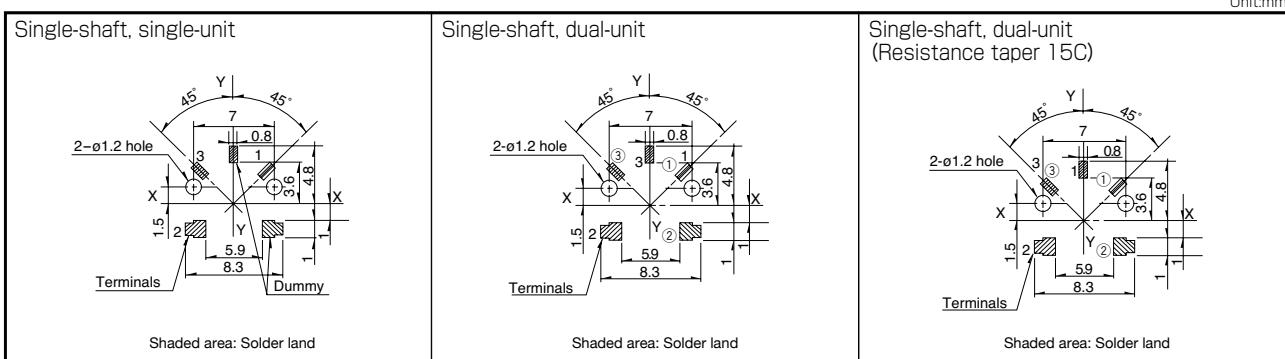
Vertical type (Viewed from mounting side)



Back-to-back mounting type (Viewed from shaft side)



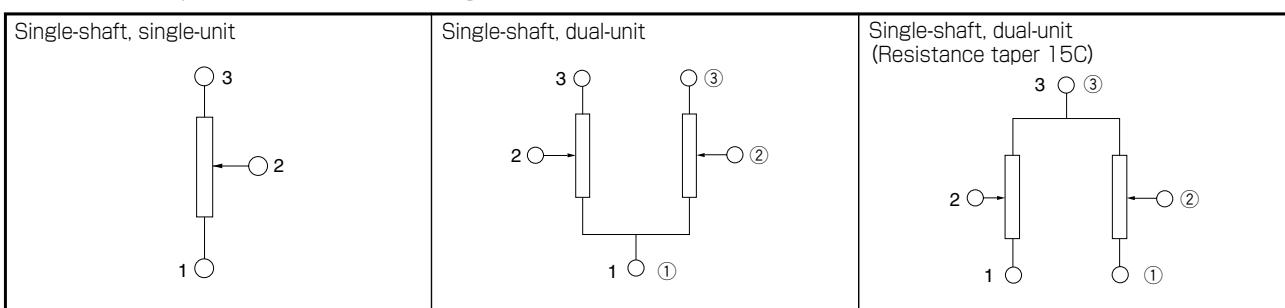
Reflow-type (Viewed from mounting side)



### Note

Keep the DUMMY terminal open in the circuit.

## ■ Standard Specification Circuit Diagram



# Without Knob Type / Other Specifications

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

## ■ Total Resistance Variety

Total resistance (k Ω)	5	10	20	50	100
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## ■ Resistance Taper

Resistance taper	15A	1B	3B	15C
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# Without Knob Type / Ordering Products Not Listed

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

## ■ Sample Part Number

**R K 0 8 H 1 1 1 0 - F 1 - C 0 - B 1 0 3**

Model type \_\_\_\_\_

Code	Model type
111	Single-unit Vertical type
112	Single-unit Back-to-back mounting type
113	Single-unit Reflow type
121	Dual-unit Vertical type
122	Dual-unit Back-to-back mounting type
123	Dual-unit Reflow type

Length of the shaft (mm) \_\_\_\_\_

Code	Length of the shaft
F1	1
F4	4.5

\*Only 1mm types are provided with the M1.4 tap screws.

\*Reflow soldering cannot be applied in the 4.5 mm type.

Detent \_\_\_\_\_

Code	Center detent
CO	Without
C1	With

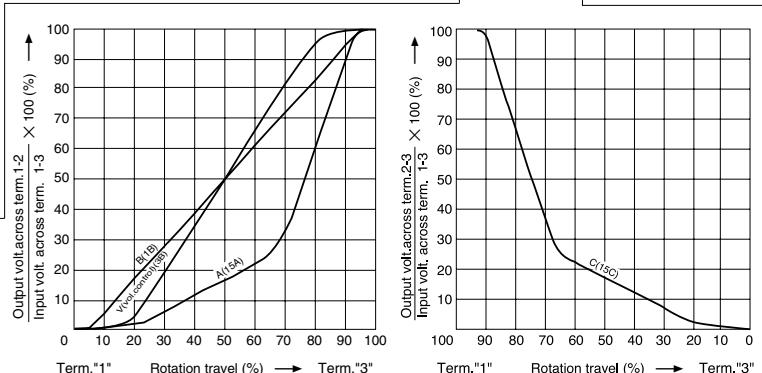
\*Detent can only be specified for non-reflow single-unit types.

Resistance taper \_\_\_\_\_

Code	Resistance taper	Code	Resistance taper
A	15A	C	15C
B	1B	V	3B

Total resistance \_\_\_\_\_

Code	Total resistance (k Ω)	Code	Total resistance (k Ω)
502	5	503	50
103	10	104	100
203	20	-	-



## Note

Marked are specifications recommended by Alps Alpine.

Potentiometers  
Slide  
Metal Shaft  
Insulated Shaft  
Operating Knob  
Shaft Type Through  
Ring Type

# Knob Operating Type Potentiometers

## List of Varieties

Type	Without knob type			With knob type	
Series	RK08H1 □ 1	RK08H1 □ 2	RK08H1 □ 3	RK10J1 □ E	RK10J1 □ R
	Single-unit/Dual-unit	Single-unit/Dual-unit	Single-unit/Dual-unit	Single-unit/Dual-unit	Single-unit/Dual-unit
Photo					
Terminal orientation	Vertical	Back-to-back mounting	Reflow type	—	—
Operating temperature range	-10°C to +60°C				
Operating life	Without detent With detent	10,000 cycles 5,000 cycles	10,000 cycles		
Automotive use	—	—	—	—	—
Life cycle					
Electrical performance	Total resistance (kΩ)	5, 10, 20, 50, 100			10, 20, 50, 100
	Resistance taper	15A, 1B, 3B, 15C			
	Rated power	0.03W			
	Insulation resistance	—	—	—	100MΩ min. 100V DC
	Voltage proof	—	—	—	100V AC for 1minute
Mechanical performance	Detent	Without / Center detent			Without
	Stopper strength	0.1N			70mN·m
	Push-pull strength	10N			5N
Terminal style	Insertion		Reflow	Insertion	Reflow
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### Residual Resistance

\* Applies only to products with specified residual resistance

Nominal total resistance	* Residual resistance
100kΩ≥R≥50kΩ	0.1% or less of nominal total resistance
50kΩ>R>10kΩ	30Ω or less
10kΩ≥R	20Ω or less

### Maximum Attenuation

Nominal total resistance	Maximum attenuation
R≥100kΩ	90dB min.
100kΩ>R≥50kΩ	80dB min.
50kΩ>R≥10kΩ	70dB min.
10kΩ>R	60dB min.

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Rotary Potentiometers
Slide Potentiometers
Metal Shaft
Insulated Shaft
Knob Operating Shaft Type
Through Ring Type

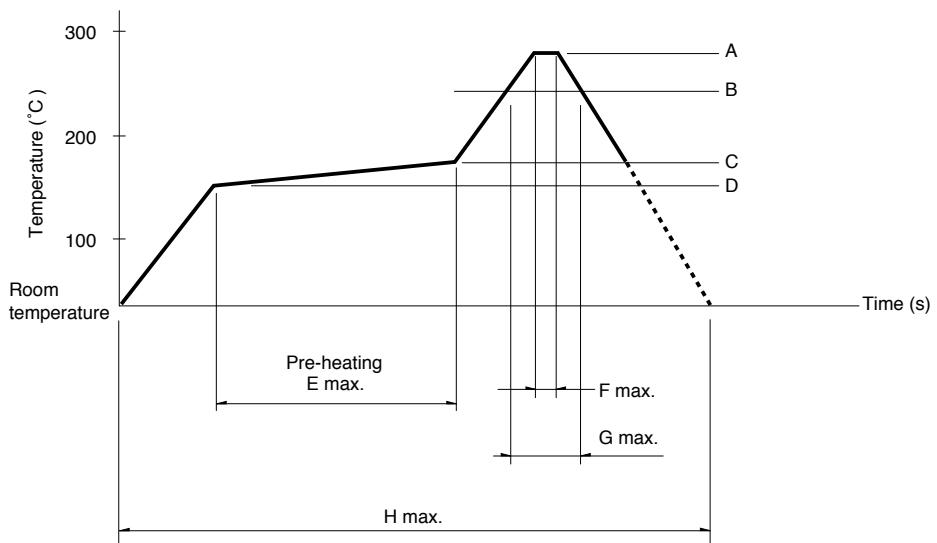
# Knob Operating Type Potentiometers / Soldering Conditions

## ■ Reference for Manual Soldering

Series	Tip temperature	Soldering time	No. of solders
<b>RK08H1□1, RK08H1□2, RK10J</b>	350°C max.	3s max.	1 time

## ■ Example of Reflow Soldering Condition

Temperature profile



Series	A	B	C	D	E	F	G	H	No. of reflows
<b>RK08H1□3, RK10J1□R</b>	250°C	200°C	150°C	150°C	2 min.	3s	40s	4 min.	2 time max.

### 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 potentiometer when employing a hot air reflow method. The temperature of the PC board and the surface temperature of the potentiometer may vary greatly depending on the PC board material, its size and thickness. Ensure that the surface temperature of the potentiometer 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.

# Mouser Electronics

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## ALPS:

[RK08H11100X7](#) [RK08H113003G](#) [RK08H1120A05](#) [RK08H12100GP](#) [RK08H113003Q](#) [RK08H122005A](#)  
[RK08H11100UD](#) [RK08H11100XC](#) [RK08H123002K](#) [RK08H11100U3](#) [RK08H12100F3](#) [RK08H1110A04](#)