

Micro Potentiometer which Require Later Installation of the Knob

RK08H Series

Small, suitable for volume and tone controls.



Features

- Ideal for small, low-profile sets.
- Single-unit type with detent and tap is available.
- Can be mounted on PC board of a 1.6mm thickness.

Applications

- Sound volume and tone controls for portable audio players including CD/MD players
- Sound volume and tone controls for gaming devices and LCD TVs

Typical Specifications

Items	Specifications
Total resistance tolerance	±30%
Maximum operating voltage	50V AC 20V DC (Single-unit only)
Total rotational angle	200±10°
Operating life	Without detent 10,000 cycles With detent 5,000 cycles
Operating temperature range	-10°C to +70°C

Recommended Products List

Number of resistor elements	Mounting direction	Products No.	Length of the shaft (mm)	Center detent	Total resistance (kΩ)	Resistance taper	Soldering	Minimum packing unit (pcs.)	Drawing No.
Single-unit	Vertical type	RK08H11100U3	1	Without	50	1B	Manual soldering	100	1
		RK08H11100UD			10				
		RK08H11100XC	4.5	With	100	15A			
		RK08H1110A04							
	RK08H1110A0P	1	Without	10	1B				
	RK08H112003A			100		15A	Reflow	1,000	4
Dual-unit	Vertical type	RK08H113003Q	1	-	50				
		RK08H113003A			10				
		RK08H12100GP			50				
	Back-to-back mounting type	RK08H12100F3	1	-	10	15A	Reflow	1,000	3
	RK08H122005A	50							
Vertical type	RK08H123002K	1	-	15C	15C	Reflow	1,000	4	

Notes

1. Additional product specifications in response to those not included in the above recommended products are also available.
2. Dip soldering can be applied to these products. If you wish to apply dip soldering, specify as "dip soldering applicable product." Back-to-back mounting types are excluded.

For product specifications, see P.81
For other detailed specifications, see P.92

Product Specifications

In addition to the recommended products, the following specifications can also be accommodated.

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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Rotary
Potentiometers

Slide
Potentiometers

Trimmer
Potentiometers

Multi Control
Devices

Position Sensors

Metal
Shaft

Insulated
Shaft

Knob
Operating

Orders other than recommended products

Specify orders for varieties that are not listed in the Recommended Product List, referring to the following example.

Sample part number



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 ones come with the M1.4 tap screws.

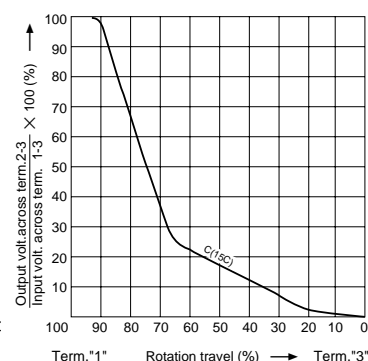
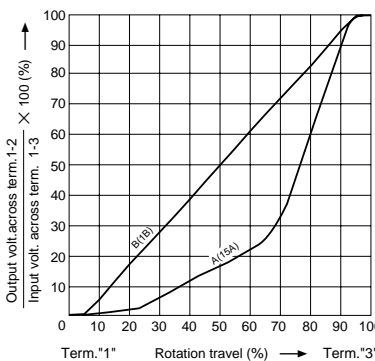
Detent

Code	Center detent
C0	Without
C1	With

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

Resistance taper

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



Total resistance

Code	Total resistance (kΩ)	Code	Total resistance (kΩ)
502	5	503	50
103	10	104	100
203	20		

Note

Shows the specification recommended by us.

Rotary Potentiometers

Slide Potentiometers

Trimmer Potentiometers

Multi Control Devices

Position Sensors

Metal Shaft

Insulated Shaft

Knob Operating

Dimensions (Vertical Type)

Unit : mm

No.	Model	Style
1	Single-shaft, single-unit RK08H1110 Single-shaft, dual-unit RK08H1210	
2	Single-shaft, single-unit RK08H1110	

PC board Mounting Hole Details

Unit : mm

<p>Single-shaft, single-unit</p>	<p>Single-shaft, dual-unit</p>	<p>Single-shaft, dual-unit (Resistance taper 15 C)</p>
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Dimensions (Back-to-back Mounting Type)

Unit : mm

No.	Model	Style
3	Single-shaft, single-unit RK08H1120 Single-shaft, dual-unit RK08H1220	

PC board Mounting Hole Details

Unit : mm

<p>Single-shaft, single-unit (Back-to-back mounting type)</p>	<p>Single-shaft, dual-unit (Back-to-back mounting type)</p>
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Note

Keep the DUMMY terminal open in the circuit.

Rotary Potentiometers
Slide Potentiometers
Trimmer Potentiometers
Multi Control Devices
Position Sensors

Dimensions (Reflow Type)

Unit : mm

No.	Model	Style
4	Single-shaft, single-unit RK08H1130 Single-shaft, dual-unit RK08H1230	<p>Technical drawings showing dimensions for the potentiometer. Top view shows a diameter of $\phi 2.5$, a distance of 8.7 from the center to the edge, and a 45-degree chamfer. A side view shows a total height of 10, a mounting surface offset of 0.6, and a shaft diameter of 1.5. A detail of the shaft shows a diameter of 0.1. A note indicates the shaft is shown in full CCW position. A side view of the mounting surface shows a diameter of 3.2, a height of 0.1, and chamfers of C0.3 and C0.15. A distance of 3.05 is shown from the mounting surface to the center of the potentiometer. A top view of the mounting surface shows a diameter of 7 and a distance of 0.8 from the center to the edge.</p>

Metal Shaft
Insulated Shaft
Knob Operating

PC board Mounting Hole Details

Unit : mm

Single-shaft, single-unit	Single-shaft, dual-unit	Single-shaft, dual-unit (Resistance taper 15 C)
<p>Technical drawing showing PC board mounting hole details for a single-shaft, single-unit potentiometer. It features a circular board with a diameter of 7 and two mounting holes of diameter $\phi 1.2$. The potentiometer is centered on the board. Dimensions include a distance of 1.5 from the center to the edge, a distance of 5.9 from the center to the terminals, and a distance of 8.3 from the center to the dummy terminal. The potentiometer has a diameter of 2.5 and a height of 1.5. The terminals are labeled 1, 2, 3, and a dummy terminal. The board has a thickness of 1.5. The potentiometer is shown at a 45-degree angle.</p>	<p>Technical drawing showing PC board mounting hole details for a single-shaft, dual-unit potentiometer. It features a circular board with a diameter of 7 and two mounting holes of diameter $\phi 1.2$. The potentiometer is centered on the board. Dimensions include a distance of 1.5 from the center to the edge, a distance of 5.9 from the center to the terminals, and a distance of 8.3 from the center to the dummy terminal. The potentiometer has a diameter of 2.5 and a height of 1.5. The terminals are labeled 1, 2, 3, and a dummy terminal. The board has a thickness of 1.5. The potentiometer is shown at a 45-degree angle.</p>	<p>Technical drawing showing PC board mounting hole details for a single-shaft, dual-unit potentiometer with a 15C resistance taper. It features a circular board with a diameter of 7 and two mounting holes of diameter $\phi 1.2$. The potentiometer is centered on the board. Dimensions include a distance of 1.5 from the center to the edge, a distance of 5.9 from the center to the terminals, and a distance of 8.3 from the center to the dummy terminal. The potentiometer has a diameter of 2.5 and a height of 1.5. The terminals are labeled 1, 2, 3, and a dummy terminal. The board has a thickness of 1.5. The potentiometer is shown at a 45-degree angle.</p>

Standard Specification Circuit Diagram

Unit : mm

Single-shaft, single-unit	Single-shaft, dual-unit	Single-shaft, dual-unit (Resistance taper 15 C)
<p>Circuit diagram for a single-shaft, single-unit potentiometer. It shows a vertical potentiometer with terminals 1 at the bottom, 2 in the middle, and 3 at the top.</p>	<p>Circuit diagram for a single-shaft, dual-unit potentiometer. It shows two vertical potentiometers. The left one has terminals 1 at the bottom, 2 in the middle, and 3 at the top. The right one has terminals 1 at the bottom, 2 in the middle, and 3 at the top.</p>	<p>Circuit diagram for a single-shaft, dual-unit potentiometer with a 15C resistance taper. It shows two vertical potentiometers. The left one has terminals 1 at the bottom, 2 in the middle, and 3 at the top. The right one has terminals 1 at the bottom, 2 in the middle, and 3 at the top.</p>

Note

Keep the DUMMY terminal open in the circuit.

Products Specifications

Items	Type	Later installation of the knob		With the knob				Self return
	Model	RK08H1□1 RK08H1□2	RK08H1□3	RK10J1□E	RK10J1□R	RK14J1□A	RK14J1□R	RK10N
		Vertical back-to-back mounting	Reflow type	Insertion type	Reflow type	Insertion type	Reflow type	Manual soldering type
Operating temperature range		-10°C to +70°C						-10°C to +60°C
Electrical performance	Total resistance tolerance	±30%						
	Rated power	0.03W						0.0125W
	Maximum operating voltage	50V AC (Single-unit available with 20V DC)						50V AC
	Insulation resistance	100MΩ min. 100V DC						
	Voltage proof	1 minute 100V AC						
Mechanical performance	Total rotational angle		200±10°		270±10°		26±2°	
	Rotational torque		1 to 10mN·m	0.5 to 10mN·m			At starting force: 0.38±0.1N Near an end: 1.5N or less	
	Strength of the operating section	Stopper strength	0.1N·m		70mN·m		40N max.	
		Push-pull strength (In the direction perpendicular to the P.W.Board surface)	10N max.		5N max.		70N max. (Push strength)	
	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 and for 2 hours respectively					
	Solderability		230±5°C, 3±0.5s					
	Solder heat resistance	Manual soldering	350°C or less and within 3 seconds	—	350°C or less and within 3 seconds	—	350°C or less and within 3 seconds	—
		Dip soldering (Only applicable)	—				260±5°C 4±1s	—
Reflow soldering		—	Please see P.94	—	Please see P.94	—	Please see P.94	
Endurance	Operating life	Without detent With detent	10,000 cycles 5,000 cycles	10,000 cycles			25,000 cycles	
Environmental test	Cold	-10°C for 96h						-30°C for 48h
	Long-term heat resistance	+70°C for 96h						+70°C for 48h
	Moisture resistance	40±2°C, 90 to 95%RH for 96h						

Maximum attenuation or residue resistance (except RK10N)

※Application of remaining standard products

Nominal total resistance	Maximum attenuation	Nominal total resistance	Residual resistance
$R \geq 100k\Omega$	90dB min.	$100k\Omega \geq R \geq 50k\Omega$	0.1% or less of nominal total resistance
$100k\Omega > R \geq 50k\Omega$	80dB min.	$50k\Omega > R > 10k\Omega$	30Ω or less
$50k\Omega > R \geq 10k\Omega$	70dB min.	$10k\Omega \geq R$	20Ω or less
$10k\Omega > R$	60dB min.		

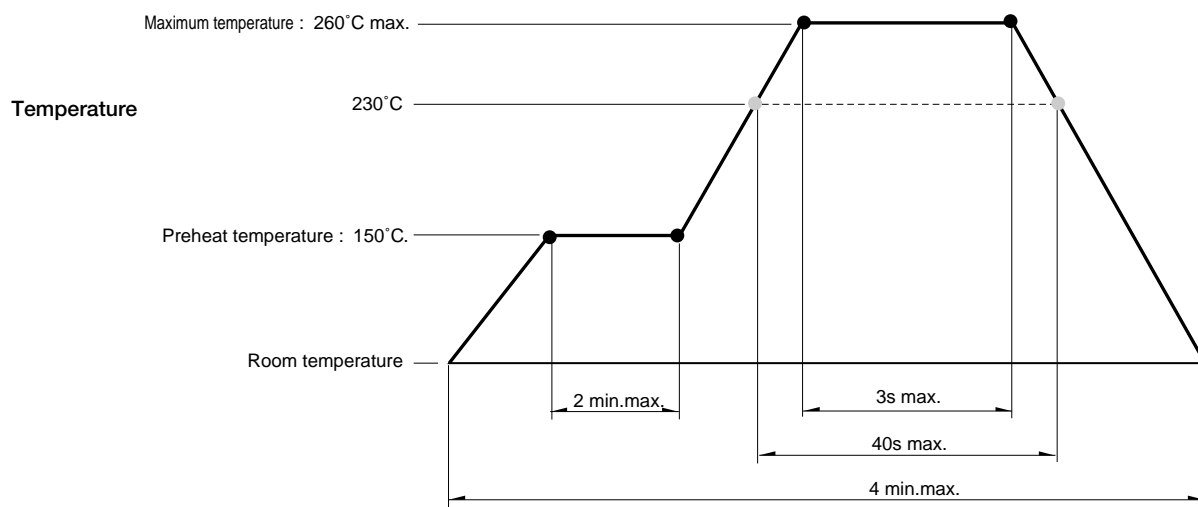
Rotary Potentiometers
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Metal Shaft
Insulated Shaft
Knob Operating

Soldering Conditions

Soldering Conditions

1. Recommended reflow conditions



2. Cleaning Cleaning should not be attempted.
3. Type of solder to be used Use cream solder that contains 10 - 15 %wt flux.
4. Soldering Mounting plate should also be soldered

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. The above-stated conditions shall also apply to switch surface temperatures.
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.