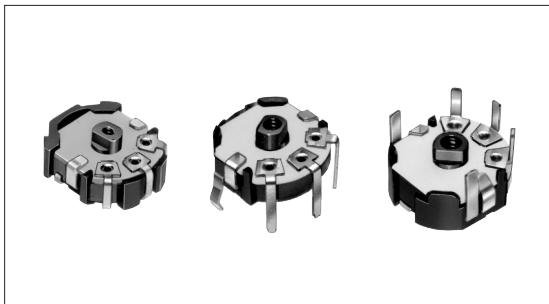


Knob Operating Type Potentiometer Without Knob Type

RK08H Series



Compact type potentiometer suitable for volume and tone controls.



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 10,000cycles With detent 5,000cycles |
| Operating temperature range | -10°C to +60°C |

Rotary Potentiometers
Slide Potentiometers

Product Line

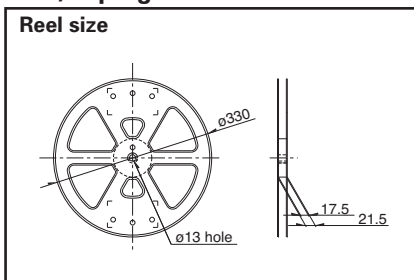
| Number of resistor elements | Mounting direction | Length of the shaft (mm) | Center detent | Total resistance (kΩ) | Resistance taper | Soldering | Minimum order unit (pcs.) | Products No. | Drawing No. |
|-----------------------------|----------------------------|--------------------------|---------------|-----------------------|------------------|--------------|---------------------------|--------------|--------------|
| Single-unit | Vertical type | 1 | Without | 50 | 1B | Manual | 100 | RK08H11100U3 | 1 |
| | | | | 10 | | | | RK08H11100UD | |
| | | 100 | RK08H11100XC | | | | | | |
| | | 4.5 | With | 10 | 15A | | | RK08H1110A04 | 2 |
| | Back-to-back mounting type | | | Without | 5 | 1B | RK08H11100X7 | 3 | |
| | | Vertical type | 1 | | Without | | 10 | RK08H1120A05 | 3 |
| Back-to-back mounting type | Without | | | 50 | | 15A | RK08H113003Q | 4 | |
| | | Vertical type | 1 | Without | 10 | | 15C | | RK08H113003G |
| Dual-unit | Back-to-back mounting type | | | | 1 | — | 50 | 15A | Manual |
| | | 10 | 15C | RK08H12100F3 | | | | | |
| | Vertical type | 1 | — | 50 | 15A | RK08H122005A | 3 | | |
| | | | | | | 15C | RK08H123002K | 4 | |

Metal Shaft
Insulated Shaft
Knob Operating
Ring Type Devices

Packing Specifications

Bulk/Taping

Unit:mm



| 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 | — | 368 × 530 × 180 |
| Reflow | Taping | 1,000 | 4,000 | 4,000 | 16 | 397 × 401 × 139 |

Notes

- Products other than those listed in above products are also available. Please contact us for details.
- 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.
- Please place purchase orders per minimum order unit N (integer).

Refer to P.411 for product varieties.
Refer to P.411, 470 for resistance taper.
Refer to P.416 for soldering conditions.


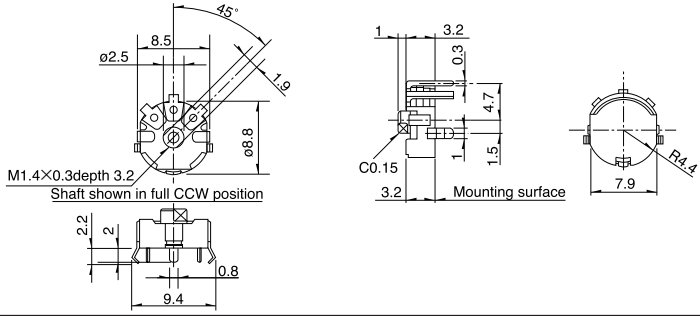

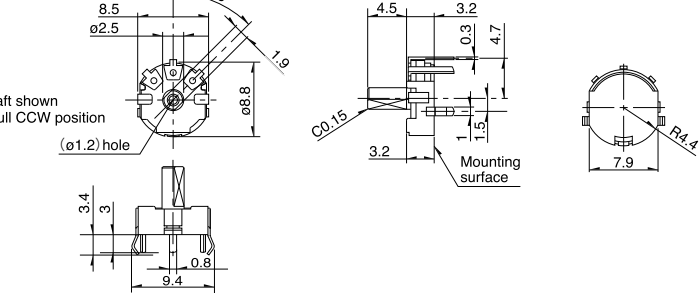
Knob Operating Type Potentiometer Without Knob Type | RK08H Series

Rotary
Potentiometers
Slide
Potentiometers

Metal
Shaft
Insulated
Shaft
Knob
Operating
Ring Type
Devices

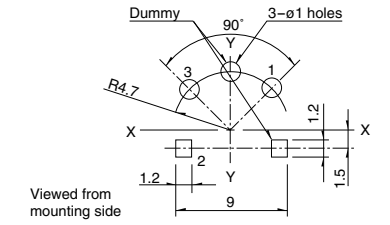
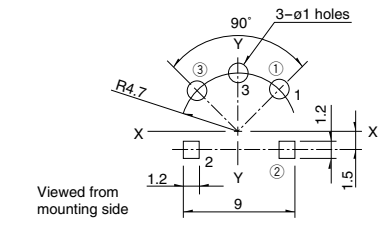
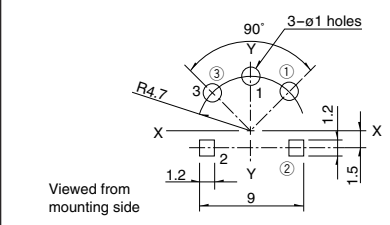
■ Dimensions (Vertical Type)

Unit:mm

| No. | Photo | Style |
|-----|--|--|
| 1 | <p>Single-shaft, single-unit RK08H1110 Single-shaft, dual-unit RK08H1210</p>  |  <p>M1.4×0.3depth 3.2 Shaft shown in full CCW position</p> <p>Mounting surface</p> |
| 2 | <p>Single-shaft, single-unit RK08H1110</p>  |  <p>Shaft shown in full CCW position (ø1.2) hole</p> <p>Mounting surface</p> |


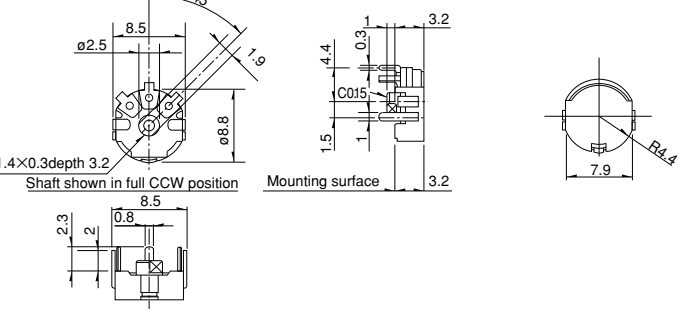
■ PC Board Mounting Hole Details/ Terminal Layout

Unit:mm

| Single-shaft, single-unit | Single-shaft, dual-unit | Single-shaft, dual-unit (Resistance taper 15 C) |
|--|--|--|
|  <p>Dummy 90° 3-ø1 holes R4.7 Viewed from mounting side</p> |  <p>90° 3-ø1 holes R4.7 Viewed from mounting side</p> |  <p>90° 3-ø1 holes R4.7 Viewed from mounting side</p> |

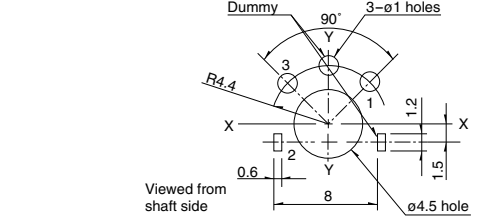
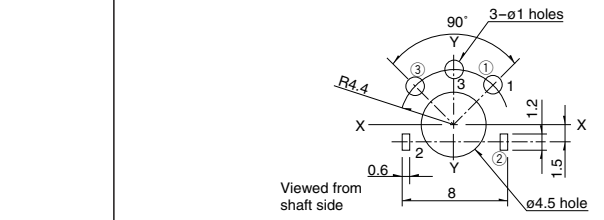
■ Dimensions (Back-to-back Mounting Type)

Unit:mm

| No. | Photo | Style |
|-----|--|--|
| 3 | <p>Single-shaft, single-unit RK08H1120 Single-shaft, dual-unit RK08H1220</p>  |  <p>M1.4×0.3depth 3.2 Shaft shown in full CCW position</p> <p>Mounting surface</p> |

■ PC Board Mounting Hole Details / Terminal Layout

Unit:mm


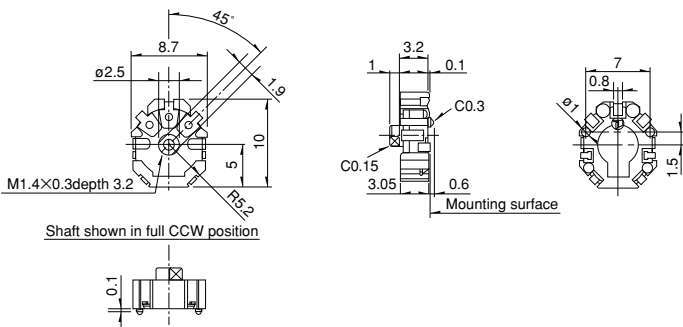
| Single-shaft, single-unit (Back-to-back mounting type) | Single-shaft, dual-unit (Back-to-back mounting type) |
|---|--|
|  <p>Dummy 90° 3-ø1 holes R4.4 Viewed from shaft side ø4.5 hole</p> |  <p>90° 3-ø1 holes R4.4 Viewed from shaft side ø4.5 hole</p> |

Note

Keep the DUMMY terminal open in the circuit.

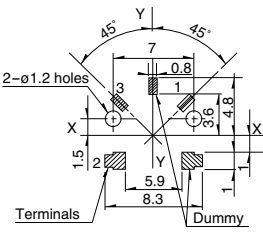
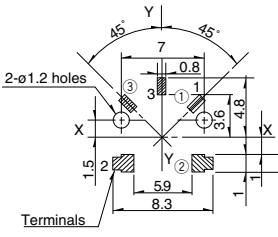
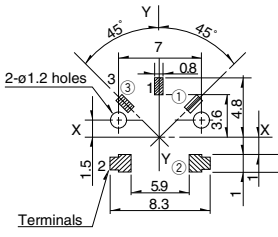
Dimensions (Reflow Type)

Unit:mm

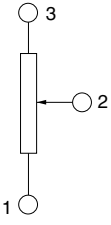
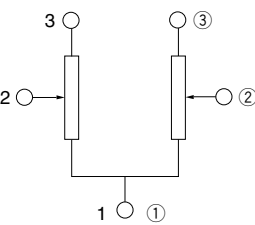
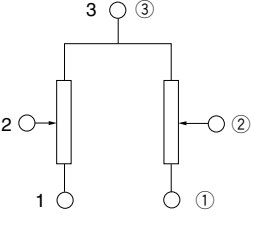
| No. | Photo | Style |
|-----|---|--|
| 4 | <p>Single-shaft, single-unit RK08H1130 Single-shaft, dual-unit RK08H1230</p>  |  <p>Shaft shown in full CCW position</p> |

PC Board Mounting Hole Details / Terminal Layout

Unit:mm

| Single-shaft, single-unit | Single-shaft, dual-unit | Single-shaft, dual-unit (Resistance taper 15 C) |
|--|--|--|
|  |  |  |

Standard Specification Circuit Diagram

| Single-shaft, single-unit | Single-shaft, dual-unit | Single-shaft, dual-unit (Resistance taper 15 C) |
|---|---|---|
|  |  |  |

Note

Keep the DUMMY terminal open in the circuit.

Product Varieties

When ordering product varieties that are not listed in the Product Line, please specify by referring to the below example.

Total Resistance Variety

| Total resistance (kΩ) | 5 | 10 | 20 | 50 | 100 |
|-----------------------|---|----|----|----|-----|
|-----------------------|---|----|----|----|-----|

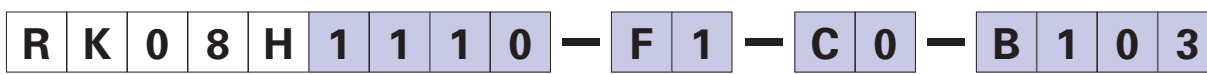
Resistance Taper

| Resistance taper | 15A | 1B | 3B | 15C |
|------------------|-----|----|----|-----|
|------------------|-----|----|----|-----|

Orders Other Than Recommended Products

When ordering product varieties that are not listed in the Product Line, please specify by referring to the below 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 types are provided with the M1.4 tap screws.
* Reflow soldering cannot be applied in the 4.5 mm type.

Detent

| Code | Center detent |
|------|---------------|
| C0 | Without |
| C1 | With |

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

Resistance taper

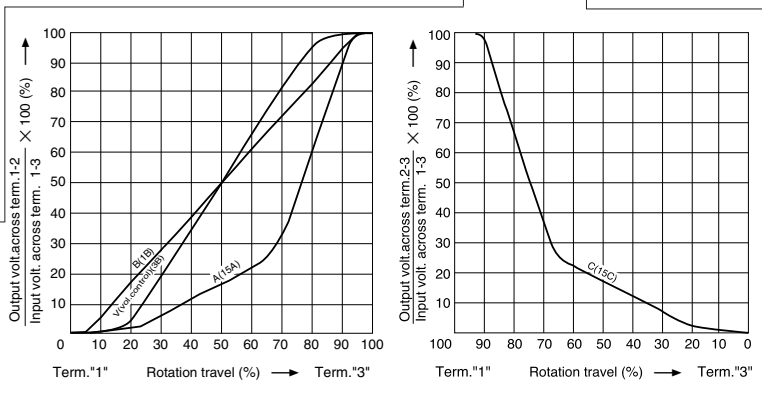
| Code | Resistance taper | Code | Resistance taper |
|------|------------------|------|------------------|
| A | 15A | C | 15C |
| B | 1B | V | 3B |

Total resistance

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

Note

marked are specifications recommended by ALPS.



Rotary Potentiometers
Slide Potentiometers

Metal Shaft
Insulated Shaft
Knob Operating
Ring Type Devices

List of Varieties

| Items | Type | | Without knob | | With knob type | | | |
|---------------------------|-----------------------------------|--|--|--------------------|------------------|------------------|------------------|----------|
| | Model | | RK08H1□1 RK08H1□2 | RK08H1□3 | RK10J1□E | RK10J1□R | RK14J1□A | RK14J1□R |
| | | Vertical type Back-to-backmounting type | Reflow type | Insertion type | Reflow type | Insertion type | Reflow type | |
| Photo | | | | | | | | |
| Automotive use | | | | | | | | |
| Electrical performance | Rated power | | 0.03W | | | | | |
| | Insulation resistance | | 100MΩ min. 100V DC | | | | | |
| | Voltage proof | | 100V AC for 1minute | | | | | |
| Mechanical performance | Strength of the operating section | Stopper strength | 0.1N·m | | 70 mN·m | | | |
| | | Push-pull strength (In vertical direction against the P.W.B. surface) | 10N max. | | 5N max. | | | |
| | 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 | | | | | |
| | Solder heat resistance | Manual soldering | | 350°C max. 3s max. | | | | |
| | | Dip soldering | | | | | 260±5°C 4±1s | |
| Reflow soldering | | | Please see P.416 | | Please see P.416 | | Please see P.416 | |
| Environmental performance | Cold | | -10±2°C for 96h | | | -25±2°C for 240h | | |
| | Dry heat | | 70±2°C for 96h | | | 70±2°C for 240h | | |
| | Damp heat | | 40±2°C, 90 to 95%RH for 96h | | | | | |
| Page | | 408 | | | 412 | | | |

Maximum Attenuation and Residual Resistance

※Application of non-standard

| 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. | | |

- Knob Operating Type Potentiometers Cautions.....417
- Knob Operating Type Potentiometers Soldering Conditions416

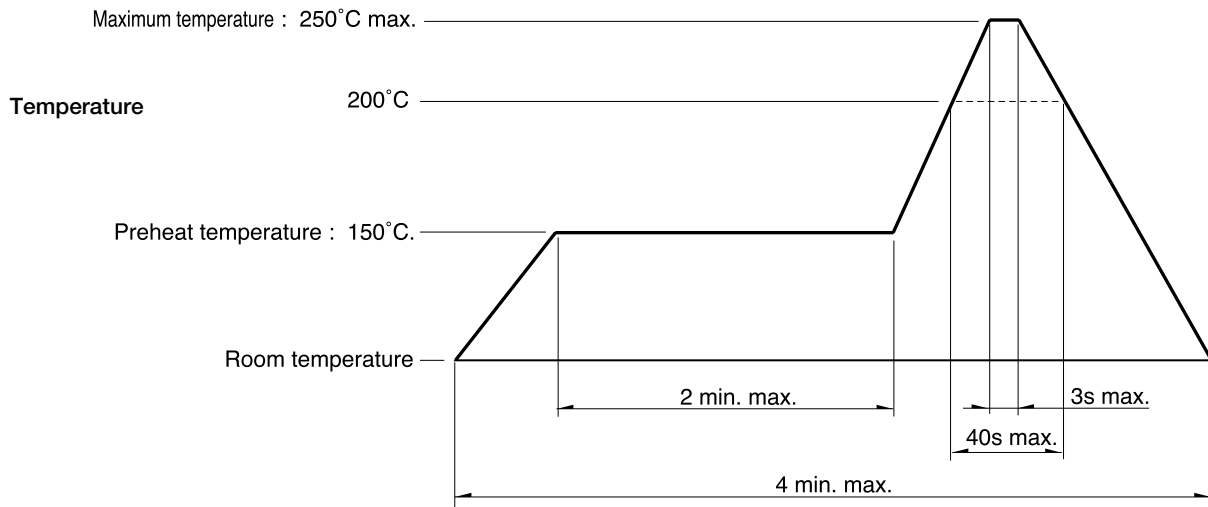
Note

For reflow type taping, please contact us.

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

- 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.
- 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.
- Conditions vary to some extent depending on the type of reflow bath used. Be sure to give due consideration to this prior to use.

Rotary
PotentiometersSlide
PotentiometersMetal
ShaftInsulated
ShaftKnob
OperatingRing Type
Devices