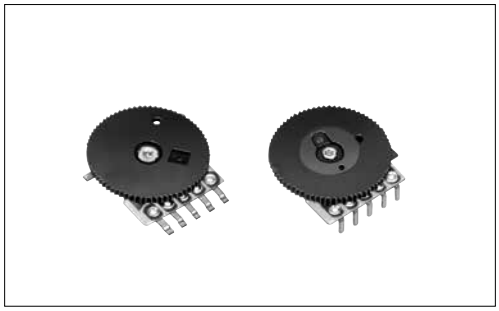
RK10J With Knob Type

Low-profile, dip and reflow solderable



Typical Specifications

Items	Specifications
Total resistance tolerance	±30%
Maximum operating voltage	50V AC, 20V DC (Single-unit only)
Total rotational angle	270° ±10°
Rotational torque	0.5 to 10mN·m
Operating life	10,000 cycles
Operating temperature range	−10℃ to +60℃

Product Line

Number of resistor elements	Knob type	Total resistance (k Ω)	Resistance taper	Soldering	Mounting type	For DC use	Minimum order unit (pcs.) Japan	Minimum order unit (pcs.) Export	Products No.	Drawing No.
Single-unit	Knob diameter :ϕ 14 Knob thickness : t0.9 Color : Black	10	1B	Manual	Insertion (2mm)	20V DC	3,000	2,400	**RK10J11E0034**	1
		20	3B						**RK10J11E002Y**	
Dual-unit		10	15A			Not applicable			**RK10J12E0A0A**	
			3B						**RK10J12E002L**	
		20	15C						**RK10J12E0024**	
Single-unit	Knob diameter :ϕ 14 Knob thickness : t1.0 Color : Black	10	15A	Reflow	Surface mounting	20V DC	3,000	3,000	**RK10J11R001Y**	2
			3B						**RK10J11R0A0H**	
Dual-unit			15A			Not applicable			**RK10J12R0A0B**	
			15C						**RK10J12R0052**	

Notes Other varieties are also available. Refer to "Other Specifications" (P.373, 374).

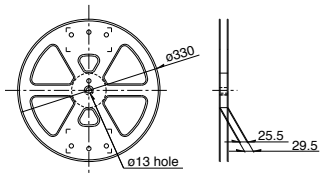
Packing Specifications

Bulk / Taping

Soldering	Packing specifications	Number of packages (pcs.) 1 reel	1 case /Japan	1 case /export packing	Tape width (mm)	Export package measurements (mm)
Manual	Bulk	—	3,000	2,400	—	371×250×190
Reflow	Taping	1,000	3,000	3,000	24	401×397×139

Unit:mm

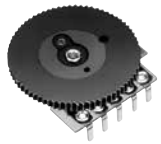
Reel size

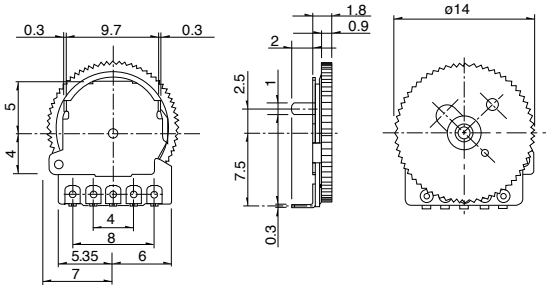


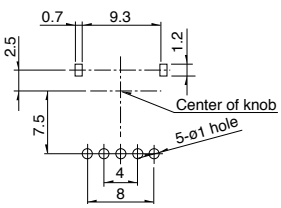
Dimensions

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
1	**RK10J1 □ E**		



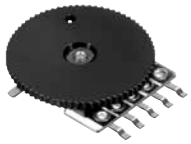
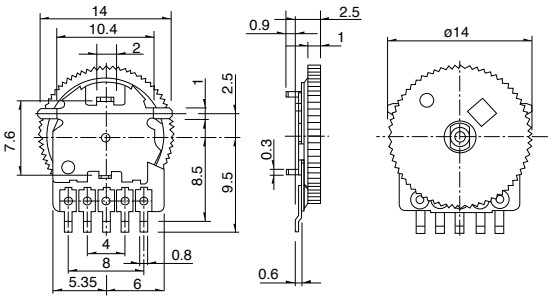
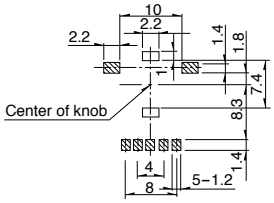




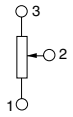
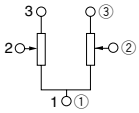
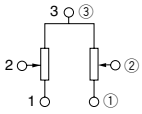
Refer to P.373 for other specifications.
Refer to P.375 for ordering products not listed.
Refer to P.376 for soldering conditions.

Dimensions

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
2	**RK10J1 □ R** 		 Shaded area: Solder land

Circuit Diagram

Single-unit	Dual-unit	Dual-unit resistance taper 15C
		

With Knob Type / Other Specifications

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

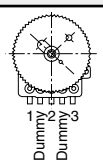
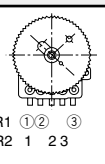
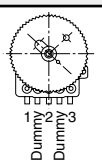
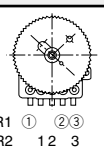
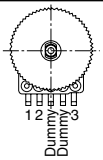
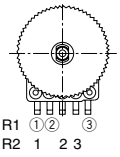
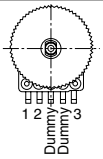
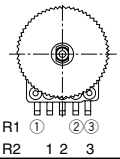
Total Resistance Variety

Total resistance (k Ω)	10	20	50	100

Resistance Taper

Resistance taper	15A	1B	3B	15C

Terminal Layout

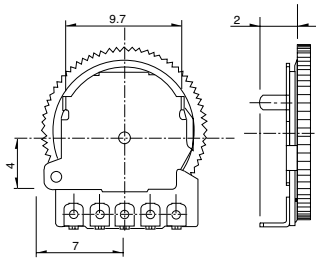
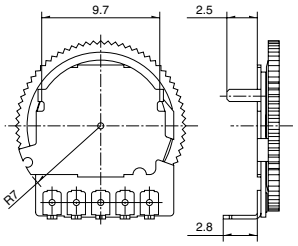
	Resistance taper A or B		Resistance taper C	
	Single-unit	Dual-unit	Single-unit	Dual-unit
10mm Single-unit/ Dual-unit RK10J1□E				
10mm Single-unit/ Dual-unit RK10J1□R (Reflow-type)				

Refer to P.375 for ordering products not listed.

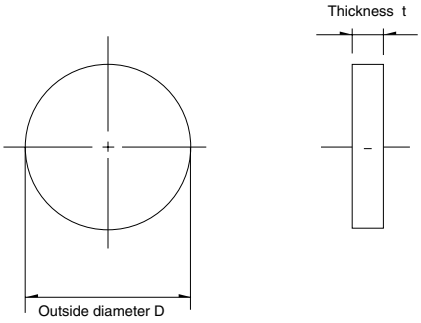
Mounting Plate Types and Terminal Types

Unit:mm

RK10J1 □E

Terminal length : 2.0	Terminal length : 2.8
	

Knob Variety



Applicable models	Knob variety				Body thickness (mm)
	Type	Outer diameter D	Thickness (mm)	Color	
RK10J11E **RK10J12E**	K4	ϕ14	0.9	Black	1.8
	K5	ϕ16	3.0		4.0
RK10J11R **RK10J12R** **(Reflow-type)**	K1	ϕ14	1.0	Black	2.5
	K2	ϕ14	2.5		3.8
	K3	ϕ16			

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	K	1	0	J	1	1	R	–	K	1	–	B	2	0	3

Model type

Code	Model type
RK10J11E	10mm size single-unit Insertion type
RK10J12E	10mm size dual-unit Insertion type
RK10J11R	10mm size single-unit Reflow type
RK10J12R	10mm size dual-unit Reflow type

Shaft type (Outer diameter/Thickness) (mm)

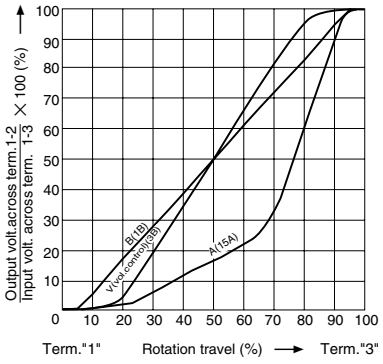
Code	RK10J1□E	RK10J1□R
K1	—	V14 t1.0
K2	—	V14 t2.5
K3	—	V16 t2.5
K4	V14 t0.9	—
K5	V16 t3.0	—

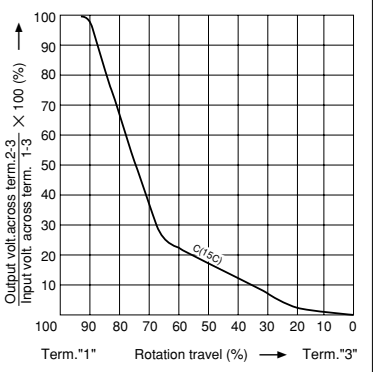
*Color : Black

Resistance taper

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

B: For tone & general
V: For vol.





Total resistance

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

Note

Marked are specifications recommended by Alps Alpine.

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℃ to +60℃				
Operating life		Without detent 10,000 cycles With detent 5,000 cycles			10,000 cycles	
Automotive use		—	—	—	—	—
Life cycle		★2			★2	
Electrical performance	Total resistance (k Ω)	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
Page		368			372	

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.

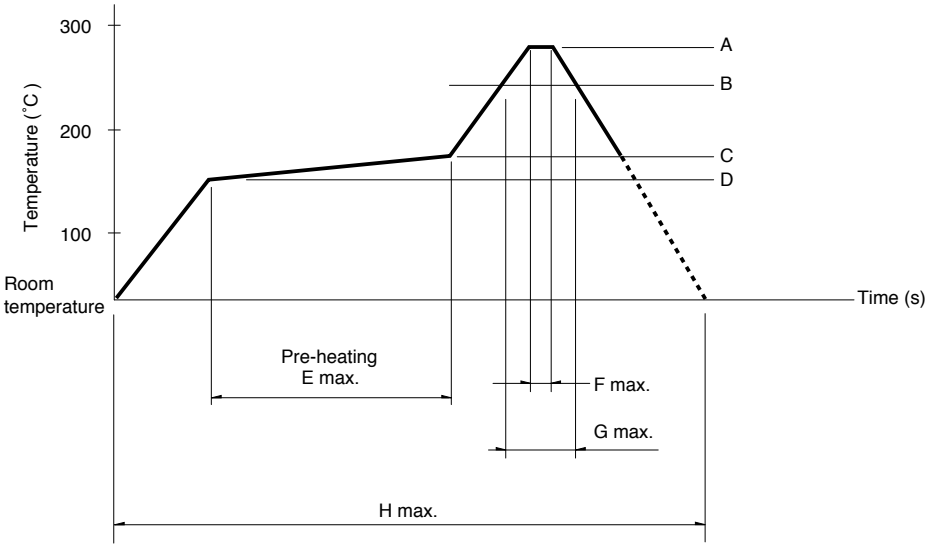
Knob Operating Type Potentiometers Soldering Conditions · · · · · 376
Potentiometers Cautions · · · · · 418
Potentiometers Measurement and Test Methods · · · · · 420
Potentiometers Resistance Taper · · · · · 422

Reference for Manual Soldering

Series	Tip temperature	Soldering time	No. of solders
RK08H1□1, RK08H1□2, RK10J	350℃ max.	3s max.	1 time

Example of Reflow Soldering Condition

Temperature profile



Series	A	B	C	D	E	F	G	H	No. of reflows
RK08H1□3, RK10J1□R	250℃	200℃	150℃	150℃	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℃ 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.