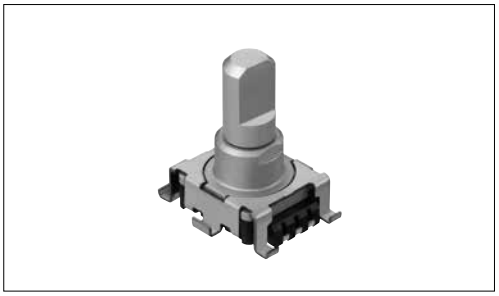
RK119 11mm Size Metal Shaft Reflow Type

1.5mm-travel push-on switch achieved in a low-profile height of only 5mm



Typical Specifications

Items	Specifications
Total resistance tolerance	±20%
Maximum operating voltage	10V DC
Total rotational angle	300° $^{+10°}_{-5°}$
Rotational torque	7.5±3.5mN·m
Operating life	15,000 cycles
Operating temperature range	−40℃ to +85℃

Product Line

Number of resistor elements	Mounting direction	Shaft type	Length of the shaft L1 (mm)	Detent	Total resistance (kΩ)	Resistance taper	Switch travel (mm)	Minimum order unit (pcs.)		Products No.	Drawing No.
								Japan	Expert		
Single-unit	Vertical type	Flat	15	Without	10	1B	Without	480	480	**RK1191110001**	1
							0.5			**RK1191114001**	2
							1.5			**RK1191124001**	3

Note

Other varieties are also available. Refer to "Other Specifications" (P.323).

Packing Specifications

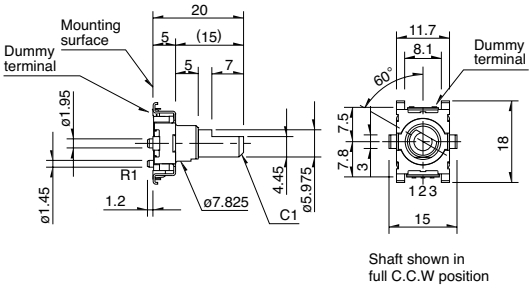
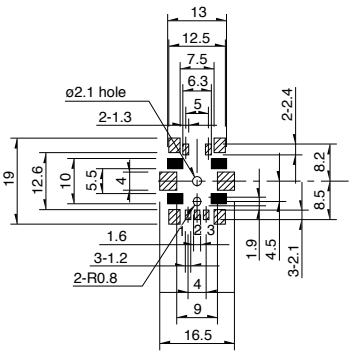
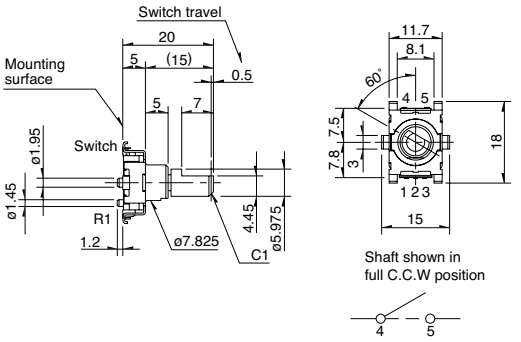
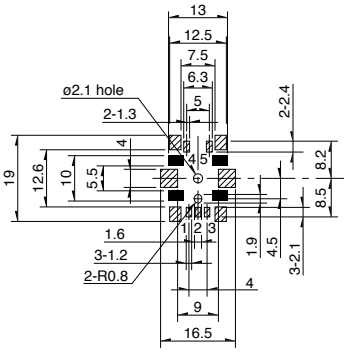
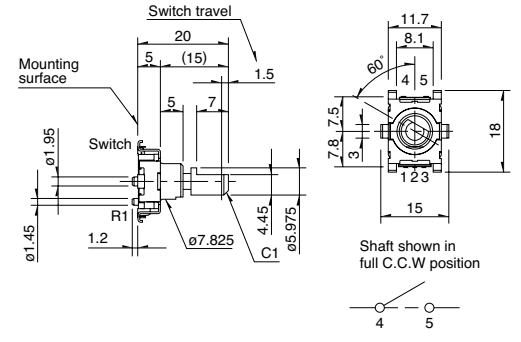
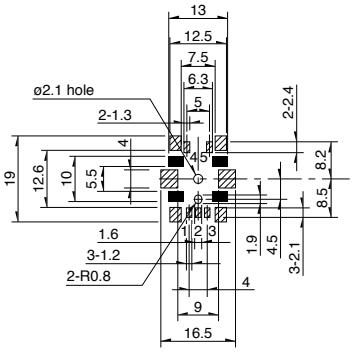
Tray

Number of packages (pcs.)		Export package measurements (mm)
1 case /Japan	1 case /export packing	
480	480	300×240×270

Refer to P.323 for other specifications.
Refer to P.323 for switch specifications.
Refer to P.324 for ordering products not listed.
Refer to P.343 for soldering conditions.

Dimensions

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
1	**Single-shaft, single-unit** **RK1191110001** 	 Shaft shown in full C.C.W position	 A slant line part:The solder land Black part:Do not solder and wiring for electrical contact
2	**Single-shaft, single-unit with push-on switch travel 0.5mm** **RK1191114001** 	 Shaft shown in full C.C.W position	 A slant line part:The solder land Black part:Do not solder and wiring for electrical contact
3	**Single-shaft, single unit with push-on switch travel 1.5mm** **RK1191124001** 	 Shaft shown in full C.C.W position	 A slant line part:The solder land Black part:Do not solder and wiring for electrical contact

11mm Size Metal Shaft Reflow Type / Other Specifications

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

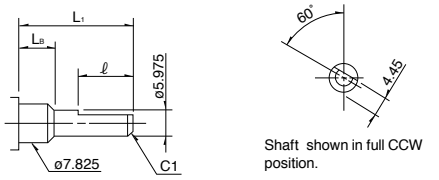
Detent and Attached Switch

Varieties \ Items	Detent	Attached switches travel	
Single-shaft, Single-unit	Without	0.5mm	1.5mm

Dimensions of Shaft

Flat type

Unit:mm



Detail dimensions (mm)

L1	※ LB	ℓ
(15)	5	7
(20)	5	10

Notes

1. ※ L_B does not support M7 (with screws).
2. Marked are specifications recommended by Alps Alpine.

11mm Size Metal Shaft Reflow Type / Switch Specifications

Switch type		Momentary push switch	
Contact arrangement		Single pole and single throw (Push-on)	
Travel (mm)		0.5±0.3	1.5±0.5
Operating force		5±2N	4±2N
Operating life		20,000 times	
Electrical performance	Rating	0.1A 5V DC (0.1mA 5V DC min. ratings)	
	Contact resistance	100mΩ max. for initial period, 200mΩ max. after operating life.	
	Insulation resistance	100MΩ max. 250V DC	
	Voltage proof	300V AC for 1 minute or 360V AC for 2 second	

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

■ Sample Part Number

R	K	1	1	9	1	1	1	0	–	F	1	5	–	C	0	–	B	1	0	3

Switch Specification

Code	Switch Specification
10	Without switch
14	With momentary push switch (0.5mm travel)
24	With momentary push switch (1.5mm travel)

Length of the shaft L_1 (mm)

Code	Length of the shaft
15	15
20	20

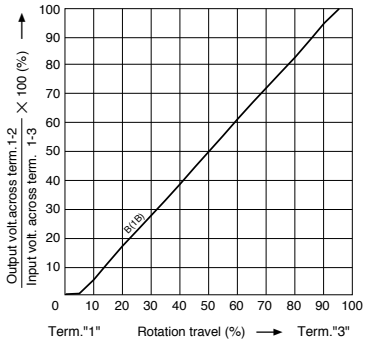
Detent

Code	Detent
C0	Without

Resistance taper

Code	Resistance taper
B	1B

B: For tone & general



Total resistance

Code	Total resistance (kΩ)
103	10

Note

Marked are specifications recommended by Alps Alpine.

Metal Shaft Potentiometers

List of Varieties

Type		9mm size				11mm size
Series		**RK09L**		**RK0971**	**RK0972**	**RK119**
		Single-shaft			Dual-shaft	Single-shaft
Number of resistor elements		Single/dual			Dual	Single
Photo						
Terminal mounting		Horizontal	Vertical	Horizontal		Vertical
Fixing method of bushing		Screw				Guide
Operating temperature range		−10℃ to +70℃		−20℃ to +70℃ −40℃ to + 85℃ (Vehicle-compatible)		−40℃ to +85℃
Operating life		15,000 cycles				
Available for automotive use		—	—	○	○	○
Life cycle (availability)		★2	★2	★2	★2	★2
Electrical performance	Total resistance (k Ω)	10, 20, 50, 100				10
	Resistance taper	15A, 1B, 3B, 15C				1B
	Rated Power	0.05W				
	Residual resistance	R≦10kΩ 20Ω max. 10kΩ<R<50kΩ 30Ω max. 50kΩ≦R Nominal total resistance of 0.1% or less				R≦10kΩ 50Ω max.
	Maximum attenuation (Volume control)	5kΩ≦R< 10kΩ 70dB min. 10kΩ≦R< 50kΩ 80dB min. 50kΩ≦R 90dB min.		5kΩ≦R< 10kΩ 70dB min. 10kΩ≦R< 50kΩ 80dB min. 50kΩ≦R<100kΩ 90dB min. 100kΩ≦R 100dB min.		—
	Gang error applicable to Dual-unit parts for audio volume control purposes	−40dB to 0dB 3dB max.				—
	Insulation resistance	100MΩ min. 250V DC				
	Voltage proof	300V AC for 1minute				300V AC for 1 minute or 360V for 2s
	Center-taps	Without		Without / With		Without
Mechanical performance	Detent	Without, Center				Without
	Stopper strength	0.5N·m		0.5N ·m (With push-lock mechanism: 0.4N·m)		0.5N·m
	Push-pull strength	80N max.		100N 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				
Shaft style		Flat type			Inner-shaft: flat type Outer-shaft: slotted type	Flat type
Terminal style		Insertion				Reflow
Attached switch		—	—	Rotary switch Push-on push-off switch Push-on switch Push-lock switch	—	Push-on switch
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Notes

1. For the switch attached, the single-shaft or inner shaft of the dual-shaft type can be chosen.
2. The operating temperature range for automotive applications can be raised upon request. Please contact us for details.
3. ○ Indicates applicability to some products in the series.

Reference for Manual Soldering

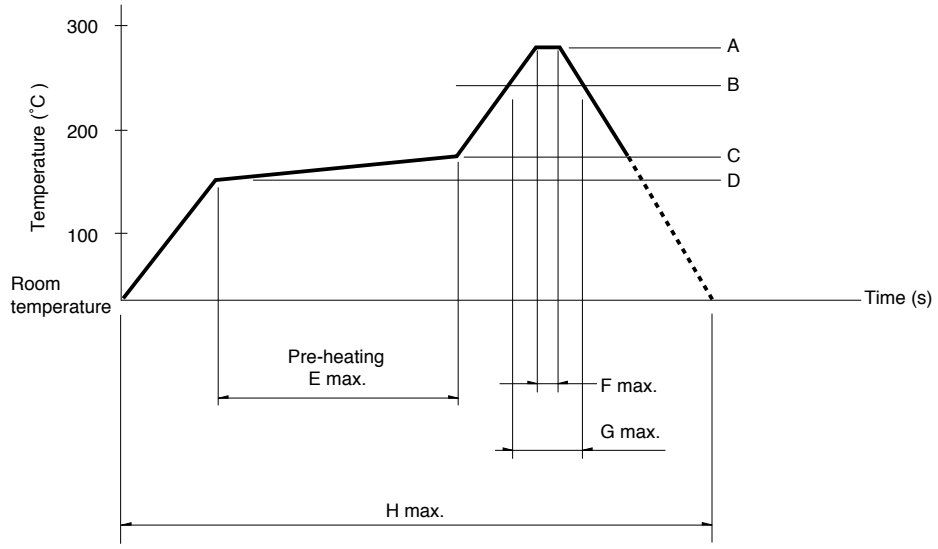
Series		Tip temperature	Soldering time	No. of solders
RK09L, RK097		350℃ max.	3s max.	1 time
RK203		300℃ max.	3s max.	1 time
RK119		350±10℃	$3\ ^{+1}_{0}$ s	1 time
RK271		350℃ max.	5s max.	1 time
RK501		350±10℃	$5\ ^{+1}_{0}$ s	1 time
RK163		350℃ max.	5s max.	1 time
RK168	**Potentiometer terminal**	300℃ max.	3s max.	1 time
	Motor terminal	350℃ max.	2s max.	1 time

Reference for Dip Soldering

Series	Preheating		Dip soldering		No. of solders
	Soldering surface temperature	Heating time	Soldering temperature	Soldering time	
RK09L, RK097, RK203	100℃ max.	2 min. max.	260±5℃	5±1s	2 time max.
RK501	120±10℃	2 min. max.	260±5℃	5±1s	2 time

Example of Reflow Soldering Condition

Temperature profile



Series	A	B	C	D	E	F	G	H	No. of reflows
RK119	260℃	230℃	180℃	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 at 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.