



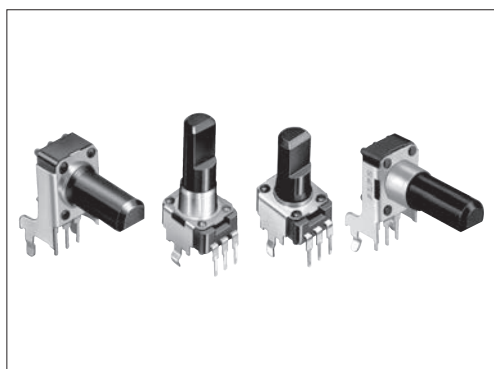
**THE DATASHEET OF
RGA221M1EBK-0811G**



RK09K RK09D

9mm Size Insulated Shaft Snap-in Type

Compact type potentiometer with 9.8mm width is ideal for designing high density sets



Typical Specifications

Items		Specifications
Total resistance tolerance	Single-unit	±20%
	Dual-unit	±30%
Maximum operating voltage	Single-unit	50V AC, 20V DC
	Dual-unit	50V AC for AC only
Total rotational angle	Single-unit	RK09K: 280° ±5° RK09D: 300° ±5°
	Dual-unit	280° ±5°
Rotational torque		1 to 8mN·m
Operating life	Single-unit	5,000 cycles
	Dual-unit	10,000 cycles
Operating temperature range		-10°C to +70°C

Product Line

Number of resistor elements	Mounting direction	Total rotation angle	Collar (Sleeve type)	Shaft type	Length of the shaft LM ₁ (mm)	Center detent	Total resistance (kΩ)	Resistance taper	Minimum order unit (pcs.)		Products No.	Drawing No.
									Japan	Export		
Single-unit (20V DC)	Vertical type	280° ±5°	Without	Flat	15	With	10	1B	1,000	2,000	RK09K113004U	2
						Without	5				RK09K1130AU2	
						Without	10				RK09K1130A6S	
							20				RK09K1130AJ3	
						Without	50				RK09K1130ACM	
							10				RK09K1130ACL	
				Knob	15	RK09K1130AAU						
					20	RK09K1130AH1						
					With	5	RK09K1130BM4					
						10	RK09K1130A8G					
					Screw driver	15	RK09K1130A5R					
						20	RK09K1130081					
	Horizontal type H=6.5mm	Flat	280° ±5°	Without	15	Without	10	15A	RK09K1130A70			
							20	1B	RK09K1130AP5			
							5	RK09K1130AV7				
		Knob			20	Without	10	15A	RK09K1110A2S			
									5	RK09K1110AK4		
									10	RK09K1110AH8		
	Horizontal type H=10mm	Flat	300° ±5°	Without	15	Without	50	15A	RK09K1110B1V			
							10	1B	RK09K1110A0J			
							5	RK09K11100E9				
		Knob			20	Without	10	15A	RK09K1110B1R			
									5	RK09K1110B26		
									10	RK09D1130C1B		
Vertical type	Flat	300° ±5°	With	20	Without	10	1B	RK09D1130C2P				
						50		RK09D1130A1L				
						10		RK09D1130A1N				
	Flat			25	Without	10		15A	RK09D1130C3W			
									50	RK09D1130C3C		
									10	RK09D113000F		
	Knob			20	With	10		15A	RK09D113000R			
									50			
									10			

Note

Other varieties are also available. Refer to "Other Specifications" (P.356).

Refer to P.356 for other specifications.
Refer to P.357 for ordering products not listed.
Refer to P.371 for soldering conditions.

Rotary Potentiometers

Slide Potentiometers

Metal Shaft

Insulated Shaft

Knob Operating

Ring Type

RK09K RK09D

9mm Size Insulated Shaft Snap-in Type

Product Line

Number of resistor elements	Mounting direction	Total rotation angle	Collar (Sleeve type)	Shaft type	Length of the shaft LM ₁ (mm)	Center detent	Total resistance (kΩ)	Resistance taper	Minimum order unit (pcs.)		Products No.	Drawing No.
									Japan	Export		
Dual-unit (50V AC)	Vertical type	280° ±5°	Without	Flat	15	Without	10	15A	1,000	2,000	RK09K12C0A19	10
					20		50				RK09K12C0A2S	
					30						RK09K12C0A4D	
			With		25		10				RK09K12C0A8P	12
					30						RK09K12C0A8K	
					15						RK09K12A0A2K	
	Horizontal type H=6.5mm	Without	20	50	RK09K12A0A6R	9						
			With		RK09K12A0B0W	11						

For the Mixing Console Market

Number of resistor elements	Mounting direction	Total rotation angle	Collar (Sleeve type)	Shaft type	Length of the shaft LM ₁ (mm)	Center detent	Total resistance (kΩ)	Resistance taper	Minimum order unit (pcs.)		Products No.	Drawing No.
									Japan	Export		
Single-unit (20V DC)	Vertical type	300° ±5°	With	Flat	30	With	10	1B	1,000	2,000	RK09D117000B	4
						Without		15A			RK09D117000C	

Clear Shaft

Number of resistor elements	Mounting direction	Total rotation angle	Collar (Sleeve type)	Shaft type	Length of the shaft LM ₁ (mm)	Center detent	Total resistance (kΩ)	Resistance taper	Minimum order unit (pcs.)		Products No.	Drawing No.
									Japan	Export		
Single-unit (20V DC)	Vertical type	280° ±5°	Without	Knob	20	Without	10	1B	1,000	2,000	RK09K1130D62	7

Note

Other varieties are also available. Refer to "Other Specifications" (P.356).

Packing Specifications

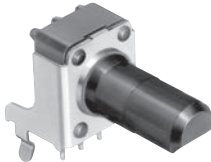
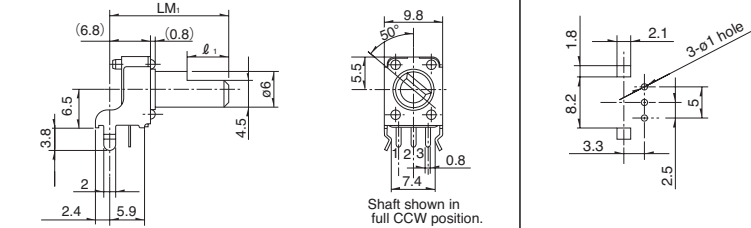
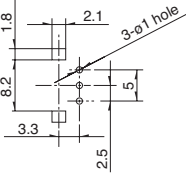
Bulk

Number of packages (pcs.)		Export package measurements (mm)
1 case / Japan	1 case / export packing	
1,000	2,000	368×530×180

Dimensions

Single-shaft, single-unit

Unit:mm


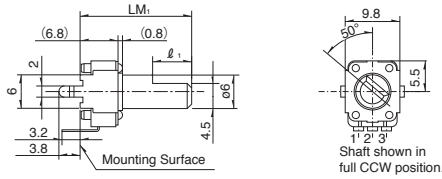
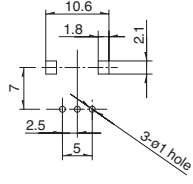
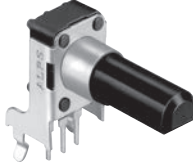
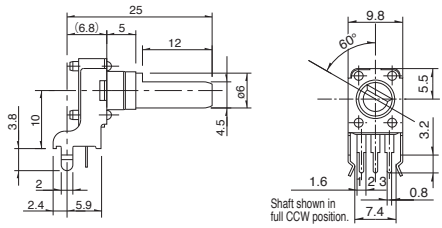
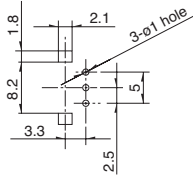

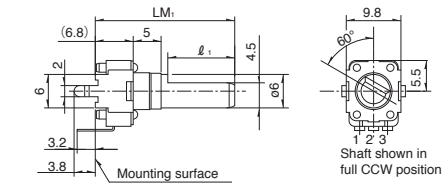
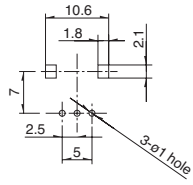

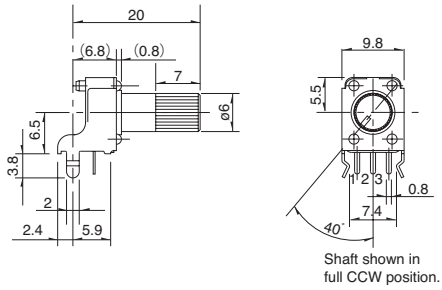
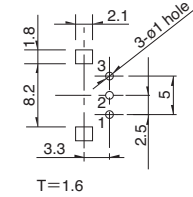
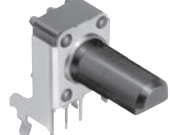
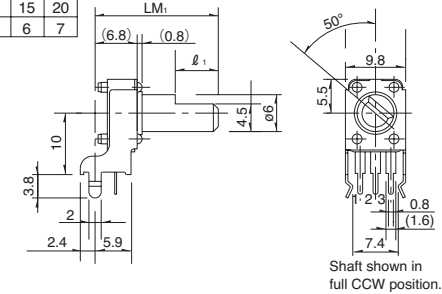
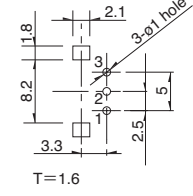
No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)						
1		<table border="1"> <tr> <td>LM₁</td> <td>15</td> <td>20</td> </tr> <tr> <td>ℓ₁</td> <td>6</td> <td>7</td> </tr> </table>  <p>Shaft shown in full CCW position.</p>	LM ₁	15	20	ℓ ₁	6	7	
LM ₁	15	20							
ℓ ₁	6	7							

Refer to P.356 for other specifications.
Refer to P.357 for ordering products not listed.
Refer to P.371 for soldering conditions.

■ Dimensions

Single-shaft, single-unit

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)										
2	<p>Vertical type RK09K113</p> 	<table border="1"> <tr> <td>LM₁</td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ₁</td> <td>6</td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>  <p>Mounting Surface</p> <p>Shaft shown in full CCW position.</p>	LM ₁	15	20	25	30	ℓ ₁	6	7	12	12	 <p>3-φ1 hole</p>
LM ₁	15	20	25	30									
ℓ ₁	6	7	12	12									
3	<p>Horizontal type with collar RK09D111</p> 	 <p>Shaft shown in full CCW position.</p>	 <p>3-φ1 hole</p>										
4	<p>Vertical type with collar RK09D113 RK09D117</p> 	<table border="1"> <tr> <td>LM₁</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ₁</td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>  <p>Mounting surface</p> <p>Shaft shown in full CCW position.</p>	LM ₁	20	25	30	ℓ ₁	7	12	12	 <p>3-φ1 hole</p>		
LM ₁	20	25	30										
ℓ ₁	7	12	12										
5	<p>Horizontal type RK09K111</p> 	 <p>Shaft shown in full CCW position.</p>	 <p>T=1.6</p> <p>3-φ1 hole</p>										
6	<p>Horizontal type RK09K111</p> 	<table border="1"> <tr> <td>LM₁</td> <td>15</td> <td>20</td> </tr> <tr> <td>ℓ₁</td> <td>6</td> <td>7</td> </tr> </table>  <p>Shaft shown in full CCW position.</p>	LM ₁	15	20	ℓ ₁	6	7	 <p>T=1.6</p> <p>3-φ1 hole</p>				
LM ₁	15	20											
ℓ ₁	6	7											

Rotary Potentiometers
Slide Potentiometers

Metal Shaft

Insulated Shaft

Knob Operating

Ring Type

RK09K RK09D

9mm Size Insulated Shaft Snap-in Type

■ Dimensions

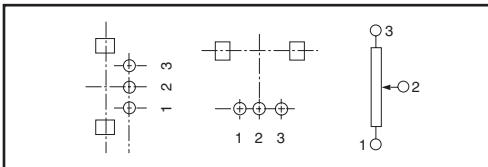
Single-shaft, single-unit

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)								
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8		<table border="1"> <tr> <td>LM₁</td> <td>15</td> <td>20</td> </tr> <tr> <td>ℓ₁</td> <td>6</td> <td>7</td> </tr> </table>	LM ₁	15	20	ℓ ₁	6	7			
LM ₁	15	20									
ℓ ₁	6	7									

■ Terminal Layout / Circuit Diagram

Single-unit



■ Dimensions

Single-shaft, dual-unit

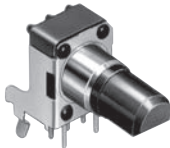
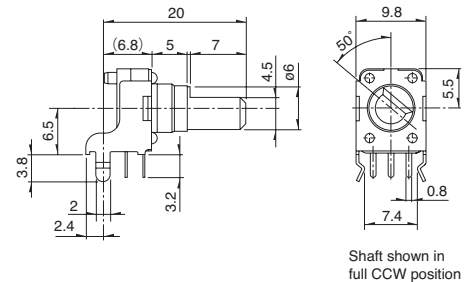
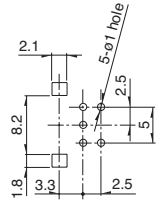

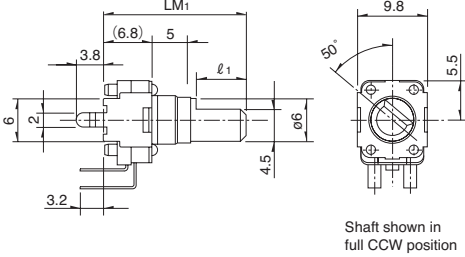
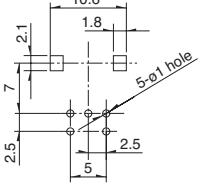
Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)								
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LM ₁	15	20									
ℓ ₁	6	7									
10		<table border="1"> <tr> <td>LM₁</td> <td>15</td> <td>20</td> <td>30</td> </tr> <tr> <td>ℓ₁</td> <td>6</td> <td>7</td> <td>12</td> </tr> </table>	LM ₁	15	20	30	ℓ ₁	6	7	12	
LM ₁	15	20	30								
ℓ ₁	6	7	12								

■ Dimensions

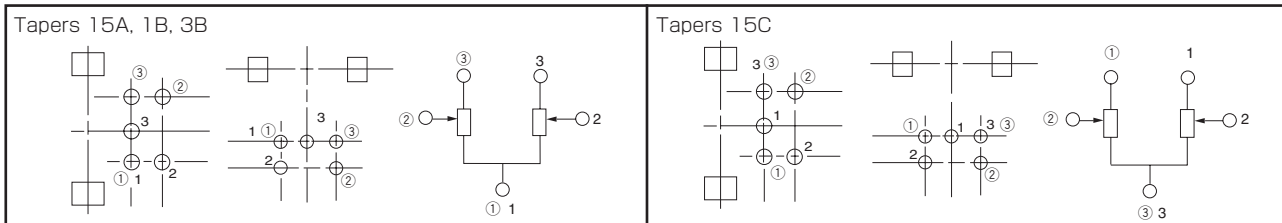
Single-shaft, dual-unit

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)						
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12	<p>Vertical type with collar RK09K12C</p> 	<table border="1" data-bbox="761 816 887 864"> <tr> <td>LM₁</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ₁</td> <td>12</td> <td>12</td> </tr> </table>  <p>Shaft shown in full CCW position</p>	LM ₁	25	30	ℓ ₁	12	12	
LM ₁	25	30							
ℓ ₁	12	12							

■ Terminal Layout / Circuit Diagram

Dual-unit



Rotary Potentiometers
Slide Potentiometers

Metal Shaft

Insulated Shaft

Knob Operating

Ring Type

9mm Size Insulated Shaft Snap-in Type / Other Specifications

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

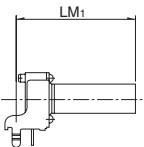
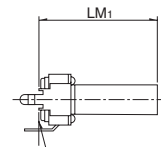
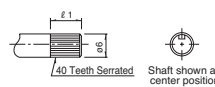
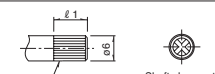

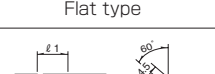
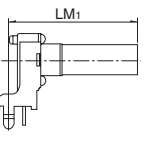
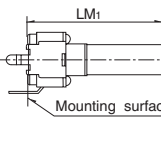

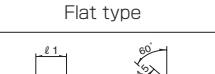
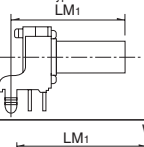
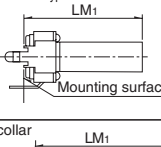
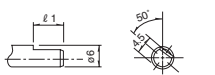
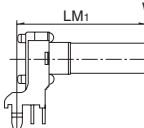
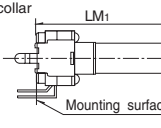

Total Resistance Variety

Total resistance (k Ω)	5	10	20	50	100	200
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Resistance Taper

Resistance taper	15A	1B	3B	15C
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Shaft Variety

Number of resistor elements	Style	Shaft type		Shaft color										
		Knob variety	Detail dimensions											
Single-unit	Horizontal type  Vertical type 	Knob type (φ6) 	<table border="1"> <tr> <td>LM₁</td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ₁</td> <td>6</td> <td>7</td> <td>7</td> <td>7</td> </tr> </table>	LM ₁	15	20	25	30	ℓ ₁	6	7	7	7	Black
		LM ₁	15	20	25	30								
		ℓ ₁	6	7	7	7								
		Screw-driver adjustment type 	<table border="1"> <tr> <td>LM₁</td> <td>9.5</td> <td>15</td> <td>20</td> <td></td> </tr> <tr> <td>ℓ₁</td> <td>—</td> <td>6</td> <td>7</td> <td></td> </tr> </table>	LM ₁	9.5	15	20		ℓ ₁	—	6	7		
	LM ₁	9.5	15	20										
	ℓ ₁	—	6	7										
	Flat type 	<table border="1"> <tr> <td>LM₁</td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ₁</td> <td>6</td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>	LM ₁	15	20	25	30	ℓ ₁	6	7	12	12		
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Flat type 	<table border="1"> <tr> <td>LM₁</td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ₁</td> <td>6</td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>	LM ₁	15	20	25	30	ℓ ₁	6	7	12	12	Gray (15, 20, 25) Black (30)		
LM ₁	15	20	25	30										
ℓ ₁	6	7	12	12										
With collar  Vertical type 	Flat type 	<table border="1"> <tr> <td>LM₁</td> <td>20</td> <td>25</td> <td>30</td> <td></td> </tr> <tr> <td>ℓ₁</td> <td>7</td> <td>12</td> <td>12</td> <td></td> </tr> </table>	LM ₁	20	25	30		ℓ ₁	7	12	12		Black	
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LM ₁	20	25	30											
ℓ ₁	7	12	12											
Horizontal type  Vertical type 	Flat type 	<table border="1"> <tr> <td>LM₁</td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ₁</td> <td>6</td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>	LM ₁	15	20	25	30	ℓ ₁	6	7	12	12	Black	
	LM ₁	15	20	25	30									
ℓ ₁	6	7	12	12										
With collar  Vertical type 	Flat type 	<table border="1"> <tr> <td>LM₁</td> <td>20</td> <td>25</td> <td>30</td> <td></td> </tr> <tr> <td>ℓ₁</td> <td>7</td> <td>12</td> <td>12</td> <td></td> </tr> </table>	LM ₁	20	25	30		ℓ ₁	7	12	12			
LM ₁	20	25	30											
ℓ ₁	7	12	12											

Notes

1. Marked are specifications recommended by Alps.
2. RK09D117 is only for flat type of 20mm, 25mm, 30mm

9mm Size Insulated Shaft Snap-in Type / Ordering Products Not Listed

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

Sample Part Number

R K 0 9 K 1 1 3 0 — **F 2 0** — **C 0** — **B 1 0 3**

Model type

Code	Model type
K111	280° single-unit horizontal type H=6.5
K113	280° single-unit vertical type
D111	300° single-unit horizontal type H=10
D113	300° single-unit vertical type
K12A	280° dual-unit horizontal type H=6.5
K12C	280° dual-unit vertical type

*All RK09D types are single-ganged.
*For other horizontal type mount height requirements, please indicate separately.

Shaft type

Code	Shaft type	Code	Shaft type
F	Flat	X	Screw driver
K	Knob	—	—

*All RK09D types are only available in flat format.

Length of the shaft LM₁ (mm)

Code	Length of the shaft	Code	Length of the shaft
15	15	25	25
20	20	30	30

*20, 25 and 30 are the only available RK09D types.
*9.5, 15 and 20 are the only available models in the Screwdriver shape.

Detent

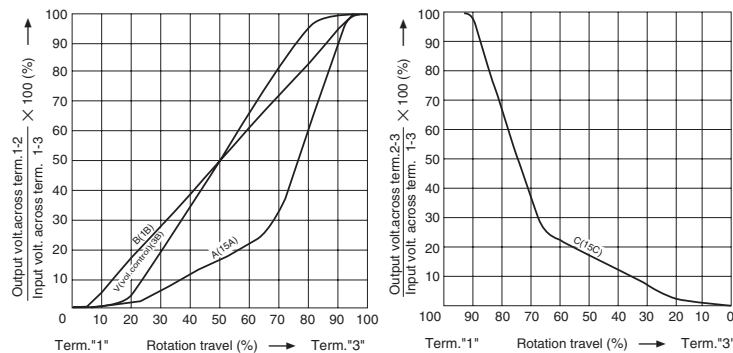
Code	Center detent
C0	Without
C1	With

Resistance taper

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

B: For tone & general
V: For vol.

*1B is a recommended specification for single-unit.
*3B is a recommended specification for dual-unit.

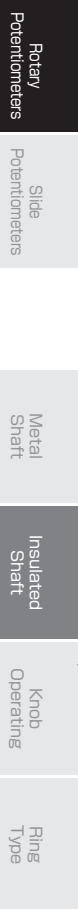


Total resistance

Code	Total resistance (k Ω)	Code	Total resistance (k Ω)
502	5	503	50
103	10	104	100
203	20	204	200

Notes

1. RK09D comes with a collar.
2. The recommended specification for RK09K does not include a collar. For collar requirements please indicate separately.
3. Marked are specifications recommended by Alps.



Insulated Shaft Potentiometers

List of Varieties

Type	9mm size			11mm size	12mm size		14mm size	
Series	RK09K11 RK09D11	RK09K12	RK09Y11L	RK11K	RK12L12	RK12L115	RK14K	
	Single-unit	Dual-unit	Single-unit	Single-unit	Dual-unit	Single-unit	Dual-unit	
Photo								
Terminal mounting	Vertical / Horizontal		Horizontal	Vertical / Horizontal		Vertical	Vertical / Horizontal	
Bushing	Without			With / Without	Without	With	With / Without	
Operating temperature range	-10°C to + 70°C					-40°C to + 85°C	-10°C to + 70°C	
Operating life	5,000 cycles	10,000 cycles	1,000,000 cycles	15,000 cycles				
Available for automotive use	—	—	—	—	—	●	—	
Life cycle								
Electrical performance	Total resistance (k Ω)	5, 10, 20, 50, 100, 200		10	5, 10, 20, 50, 100, 200		5, 10, 20, 50, 100, 200	
	Resistance taper	15A, 1B, 3B, 15C		B	15A, 1B, 3B, 15C		15A, 1B, 3B, 15C	
	Total resistance tolerance	±20%	±30%	±30%	±20%			
	Rated power	0.05W	0.03W	0.01W	0.05W			
	Maximum operating voltage	50V AC 20V DC	50V AC for AC only		50V AC 5V DC	50V AC 20V DC	50V AC for AC only	50V AC 20V DC
	Gang error	—	-40dB to 0dB 3dB max.		—	—	Volume control -40dB to 0dB 3dB max. For tone control within 2dB at center	
	Insulation resistance	100MΩ min. 250V DC			100MΩ min. 500V DC	100MΩ min. 250V DC		
	Voltage proof	250V AC for 1minute			500V AC for 1minute	300V AC for 1minute		
	Center-taps	Without			Without / With	Without		Without / With (Volume control)
Mechanical performance	Detent	Without, Center		Without	Without, Center	Without	Custom	
	Stopper strength	0.3N·m		—	Without bushing 0.5N·m With bushing 0.6N·m	0.5N·m		
	Push-pull strength	50N max.		30N max.	80N 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 configuration	Flat type, Knob type, Screwdriver type			Flat type				
Terminal style	Insertion							
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Note
● Indicates applicability to all products in the series.

Insulated Shaft Potentiometers / Soldering Conditions

■ Reference for Manual Soldering

Series	Tip temperature	Soldering time	No. of solders
RK09D, RK09K, RK09Y11L, RK11K, RK12L, RK12L115, RK14K	350°C max.	3s max.	1 time

■ Reference for Dip Soldering

Series	Preheating		Dip soldering		No. of solders
	Soldering surface temperature	Heating time	Soldering temperature	Soldering time	
RK12L	100°C	1 min. max.	260°C max.	5s max.	2 time max.

Rotary Potentiometers

Slide Potentiometers

Metal Shaft

Insulated Shaft

Knob Operating

Ring Type

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