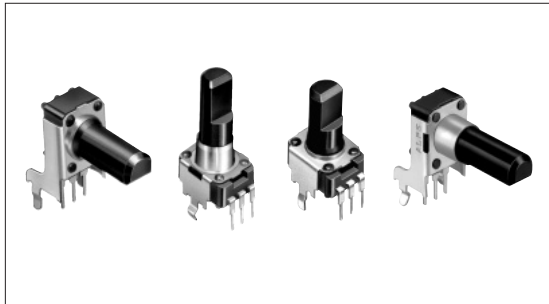


# Insulated Shaft Potentiometer 9mm Size Insulated Shaft Snap-in Type

RK09K/RK09D Series



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	5,000cycles
	Dual-unit	10,000cycles
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 (mm)	Center detent	Total resistance (kΩ)	Resistance taper	Minimum order unit (pcs.)	Products No.	Drawing No.		
Single-unit (20V DC)	Vertical type	280±5°	Without	Flat	15	With	10	1B	1,000	RK09K113004U	2		
							5			RK09K1130AU2			
							10			RK09K1130A6S			
						Without	20	RK09K1130AJ3					
							50	RK09K1130ACM					
							10	RK09K1130ACL					
				Knob	20	With	5	RK09K1130AAU					
							10	RK09K1130AH1					
							15	RK09K1130BM4					
						Driver	20	10		1B		RK09K1130A8G	
							30	10		1B		RK09K1130A5R	
							15	10		1B		RK09K1130081	
	Horizontal type H=6.5mm	20	Without	Flat	15	With	5	15A		RK09K1130A70			
							10	15A		RK09K1130AP5			
							20	15A		RK09K1130AV7			
				Knob	20	Without	15	With		10	1B	RK09K1110A2S	
										5	1B	RK09K1110AK4	
										10	1B	RK09K1110AH8	
	Horizontal type H=10mm	Vertical type	300±5°	With	Flat	15	With	50		15A	RK09K1110B1V	5	
								Without		10	1B		RK09K1110A0J
										50	1B		RK09K1110E9
							With			10	1B		RK09K1110B1R
								5		1B	RK09K1110B26		
								10		1B	RK09D1130C1B		
Horizontal type H=10mm		Vertical type	300±5°	With	Flat	20	With	10	1B	RK09D1130C2P	4		
								Without	50	1B		RK09D1130A1L	
									10	1B		RK09D1130A1N	
							With		10	1B		RK09D1130C3W	
								10	1B	RK09D1130C3C			
								10	1B	RK09D113000F			
Horizontal type H=10mm	Vertical type	300±5°	With	Flat	25	Without	50	1B	RK09D1110C0R	3			
							50	1B	RK09D1110C0R				

## Note

Products other than those listed in above products are also available. Please contact us for details.

Refer to P.386 for product varieties.  
Refer to P.386, 387, 456 for resistance taper.

**Product Line**

Number of resistor elements	Mounting direction	Total rotation angle	Collar (Sleeve type)	Shaft type	Length of the shaft (mm)	Center detent	Total resistance (kΩ)	Resistance taper	Minimum order unit (pcs.)	Products No.	Drawing No.
Dual-unit (Not applicable to DC)	Vertical type	280±5°	Without	Flat	15	Without	10	15A	1,000	RK09K12C0A19	10
					20		50				
					30		10				
			With		25		20				
					30		10				
					15		50				
	Horizontal type H=6.5mm	280±5°	Without	Flat	15	Without	10	15A	1,000	RK09K12C0D0U	12
					20		50				
					With		15			20	
							20			50	
With	280±5°	Without	Flat	15	Without	10	15A	1,000	RK09K12A0A2K	9	
				20		50					
With	280±5°	Without	Flat	15	Without	10	15A	1,000	RK09K12A0A6R	11	
				20		50					

**Note**

Products other than those listed in above products are also available. Please contact us for details.

**Packing specifications**

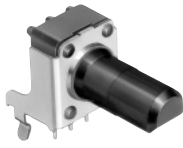
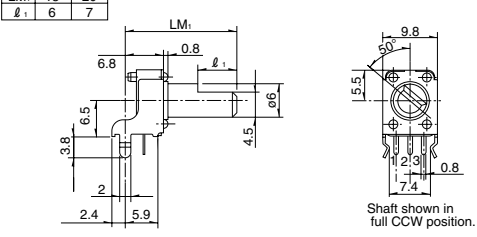
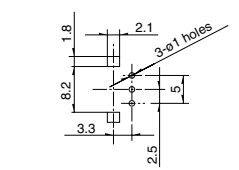

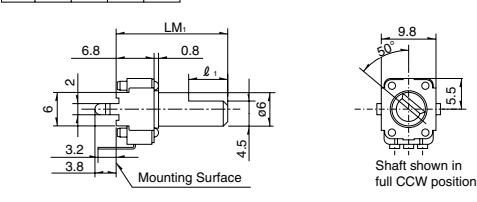
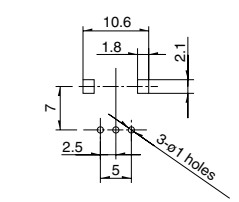
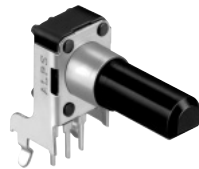
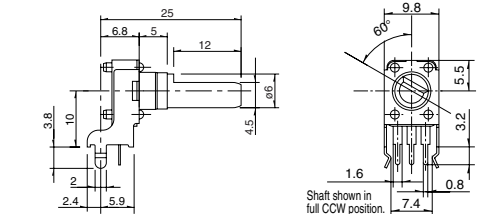
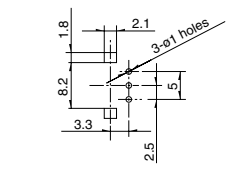
**Bulk**

Number of packages (pcs.)		Export package measurements (mm)
1 case /Japan	1 case/export packing	
1,000	2,000	370×520×156

**Dimensions**

Single-shaft, single-unit

Unit:mm


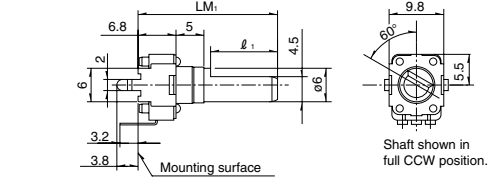
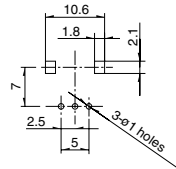

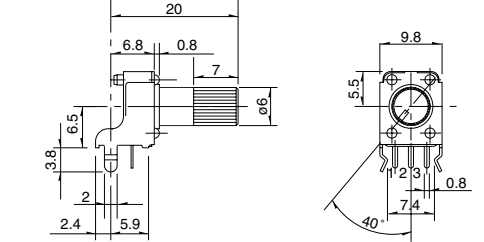
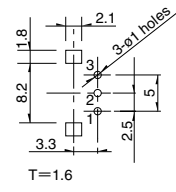
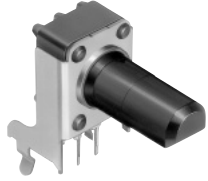
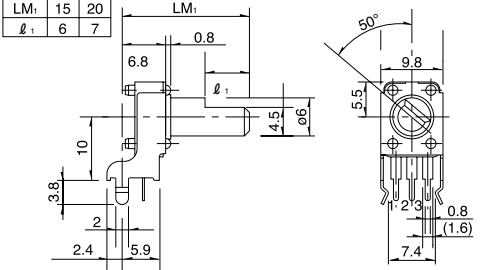
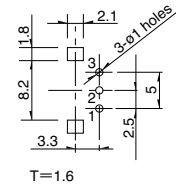

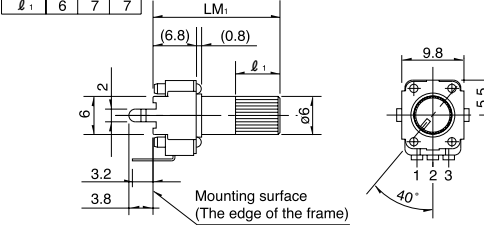
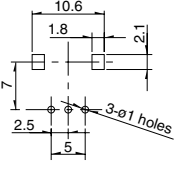
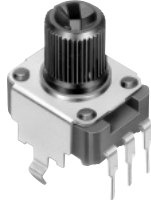
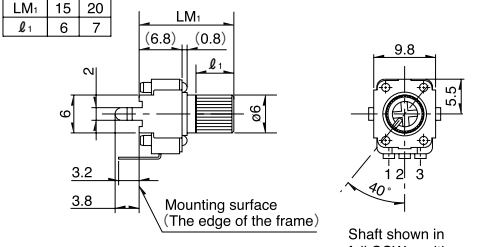
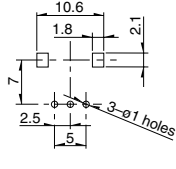
No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)										
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LM <sub>1</sub>	15	20											
ℓ <sub>1</sub>	6	7											
2		<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>  <p>Mounting Surface Shaft shown in full CCW position.</p>	LM <sub>1</sub>	15	20	25	30	ℓ <sub>1</sub>	6	7	12	12	
LM <sub>1</sub>	15	20	25	30									
ℓ <sub>1</sub>	6	7	12	12									
3		 <p>Shaft shown in full CCW position.</p>											

Refer to P.386 for product varieties.  
 Refer to P.386, 387, 456 for resistance taper.

**Dimensions**

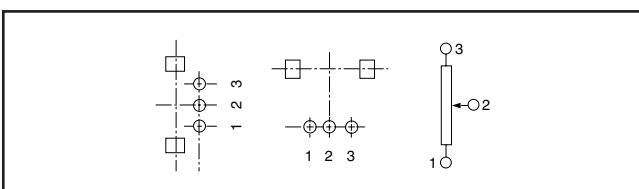
Single-shaft, single-unit

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)								
4	Vertical type with collar RK09D113 	<table border="1" data-bbox="655 416 799 450"> <tr> <td>LM<sub>1</sub></td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>7</td> <td>12</td> <td>12</td> </tr> </table> 	LM <sub>1</sub>	20	25	30	ℓ <sub>1</sub>	7	12	12	
LM <sub>1</sub>	20	25	30								
ℓ <sub>1</sub>	7	12	12								
5	Horizontal type RK09K111 										
6	Horizontal type RK09K111 	<table border="1" data-bbox="655 969 767 1003"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> </tr> </table> 	LM <sub>1</sub>	15	20	ℓ <sub>1</sub>	6	7			
LM <sub>1</sub>	15	20									
ℓ <sub>1</sub>	6	7									
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LM <sub>1</sub>	15	20	30								
ℓ <sub>1</sub>	6	7	7								
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LM <sub>1</sub>	15	20									
ℓ <sub>1</sub>	6	7									

**Terminal Layout/Circuit Diagram**

Single-unit



**Dimensions**

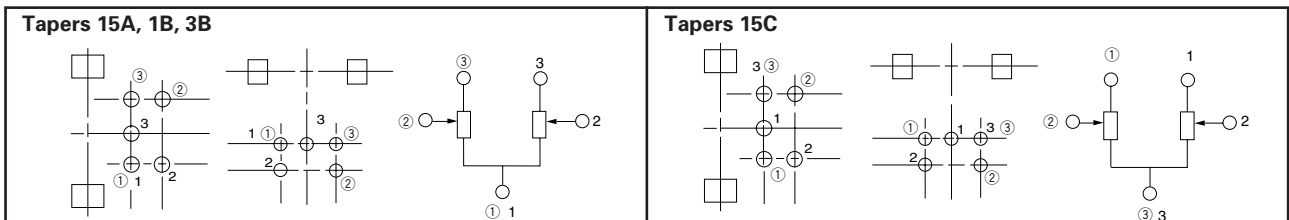
Single-shaft, dual-unit

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)								
9		<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> </tr> </table> <p>Shaft shown in full CCW position</p>	LM <sub>1</sub>	15	20	ℓ <sub>1</sub>	6	7			
LM <sub>1</sub>	15	20									
ℓ <sub>1</sub>	6	7									
10		<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> <td>12</td> </tr> </table> <p>Shaft shown in full CCW position</p>	LM <sub>1</sub>	15	20	30	ℓ <sub>1</sub>	6	7	12	
LM <sub>1</sub>	15	20	30								
ℓ <sub>1</sub>	6	7	12								
11		<p>Shaft shown in full CCW position</p>									
12		<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>12</td> <td>12</td> </tr> </table> <p>Shaft shown in full CCW position</p>	LM <sub>1</sub>	25	30	ℓ <sub>1</sub>	12	12			
LM <sub>1</sub>	25	30									
ℓ <sub>1</sub>	12	12									

**Terminal Layout/Circuit Diagram**

Dual-unit



Rotary Potentiometers  
 Slide Potentiometers

Metal Shaft  
 Insulated Shaft  
 Knob Operating

## Product Varieties

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

### Total Resistance Variety

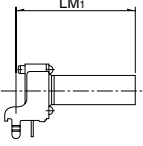
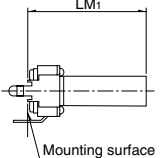
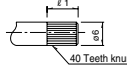
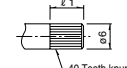
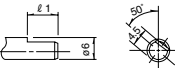
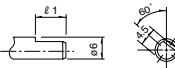
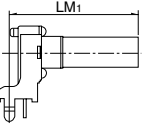
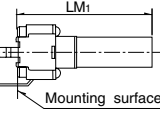
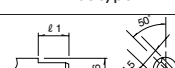
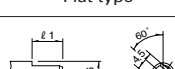
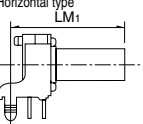
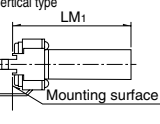
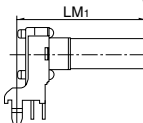
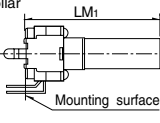
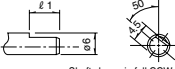
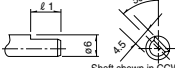
Total resistance (kΩ)	5	10	20	50	100	200
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### Resistance Taper

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

Unit:mm

Number of resistor elements	Style	Shaft type		Shaft color										
		Knob variety	Detail dimensions											
Single-unit	Horizontal type  Vertical type  Mounting surface	Knob type ( $\phi 6$ )  Shaft shown at center position	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> <td>7</td> <td>7</td> </tr> </table>	LM <sub>1</sub>	15	20	25	30	ℓ <sub>1</sub>	6	7	7	7	Black
		LM <sub>1</sub>	15	20	25	30								
		ℓ <sub>1</sub>	6	7	7	7								
		Screw-driver adjustment type  Shaft shown at center position	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>9.5</td> <td>15</td> <td>20</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>—</td> <td>6</td> <td>7</td> </tr> </table>	LM <sub>1</sub>	9.5	15	20	ℓ <sub>1</sub>	—	6	7			
		LM <sub>1</sub>	9.5	15	20									
		ℓ <sub>1</sub>	—	6	7									
Flat type  Shaft shown in full CCW position	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>	LM <sub>1</sub>	15	20	25	30	ℓ <sub>1</sub>	6	7	12	12			
LM <sub>1</sub>	15	20	25	30										
ℓ <sub>1</sub>	6	7	12	12										
Flat type  Shaft shown in full CCW position	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>	LM <sub>1</sub>	15	20	25	30	ℓ <sub>1</sub>	6	7	12	12	Gray (15,20,25) Black (30)		
LM <sub>1</sub>	15	20	25	30										
ℓ <sub>1</sub>	6	7	12	12										
With collar	  Mounting surface	Flat type  Shaft shown in CCW position	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>	LM <sub>1</sub>	20	25	30	ℓ <sub>1</sub>	7	12	12	Black		
		LM <sub>1</sub>	20	25	30									
ℓ <sub>1</sub>	7	12	12											
Flat type  Shaft shown in full CCW position	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>	LM <sub>1</sub>	20	25	30	ℓ <sub>1</sub>	7	12	12	Gray (20,25) Black (30)				
LM <sub>1</sub>	20	25	30											
ℓ <sub>1</sub>	7	12	12											
Dual-unit	Horizontal type  Vertical type  Mounting surface With collar   Mounting surface	Flat type  Shaft shown in full CCW position	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>15</td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>6</td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>	LM <sub>1</sub>	15	20	25	30	ℓ <sub>1</sub>	6	7	12	12	Black
		LM <sub>1</sub>	15	20	25	30								
ℓ <sub>1</sub>	6	7	12	12										
Flat type  Shaft shown in CCW position	<table border="1"> <tr> <td>LM<sub>1</sub></td> <td>20</td> <td>25</td> <td>30</td> </tr> <tr> <td>ℓ<sub>1</sub></td> <td>7</td> <td>12</td> <td>12</td> </tr> </table>	LM <sub>1</sub>	20	25	30	ℓ <sub>1</sub>	7	12	12					
LM <sub>1</sub>	20	25	30											
ℓ <sub>1</sub>	7	12	12											

### Note

marked are specifications recommended by ALPS.

Refer to P.387, 456 for resistance taper.

# 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
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	Driver
K	Knob		

\* All RK09D types are only available in flat format.

### Length of the shaft (LM<sub>1</sub>) (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 driver shape.

### Detent

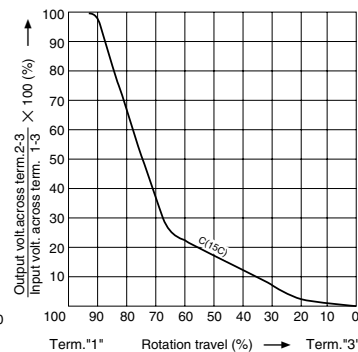
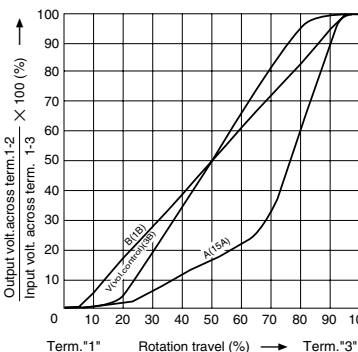
Code	Center detent
C0	Without
C1	With

### 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 (kΩ)	Code	Total resistance (kΩ)
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.

Rotary Potentiometers  
 Slide Potentiometers

Metal Shaft  
 Insulated Shaft  
 Knob Operating

## List of Varieties

Items	Type		9mm Size Insulated Shaft Snap-in	11mm Size Insulated Shaft Snap-in	12mm Size Insulated Shaft Snap-in	14mm Size Insulated Shaft Snap-in	9mm Size Insulated shaft Long-life	12mm Size Insulated shaft Snap-in	
	Model		RK09K11□ RK09D11□	RK09K12□	RK11K11□	RK12L12□	RK14K12□	RK09Y11L	RK12L115
			Single-unit	Dual-unit	Single-unit	Dual-unit		Single-unit	
Photo									
Bushing			Without	With/With out	Without	With/With out	Without	With	
Operating temperature range			-10°C to +70°C						-40°C to +85°C
Electrical performance	Total resistance tolerance		±20%	±30%	±20%		±30%	±20%	
	Maximum operating voltage		50V AC 20V DC	50V AC For AC only	50V AC 20V DC	50V AC For AC only		50V AC 5V DC	50V AC 20V DC
	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		250V AC for 1minute	300V AC for 1minute
	Gang error		—	-40dB to 0dB 3dB max.	—	Volume control -40dB to 0dB 3dB max. For tone control within 2dB at center		—	—
Mechanical performance	Strength of the actuator	Stopper strength	0.3N·m		Without bushing 0.5N·m With bushing 0.6N·m	0.5N·m	0.6N·m	—	0.5N·m
		Push-pull strength	50N max.		80N 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						
	Resistance to soldering heat	Manual soldering	350°C max. 3s max.						
Dip Soldering		—		260°C max. 5s max.	—				
Environmental performance	Cold		-30±2°C for 96h				-30±2°C for 240h	-40±3°C for 96h	
	Dry heat		70±2°C for 96h		70±2°C for 240h	70±2°C for 96h	70±2°C for 240h	85±3°C for 96h	
	Damp heat		40±2°C, 90 to 95% RH for 96h				40±2°C, 90 to 95% RH for 240h	40±2°C, 90 to 95% RH for 96h	
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● Insulated Shaft Potentiometers Cautions .....402, 403

Rotary Potentiometers  
Slide Potentiometers

Metal Shaft  
Insulated Shaft  
Knob Operating