

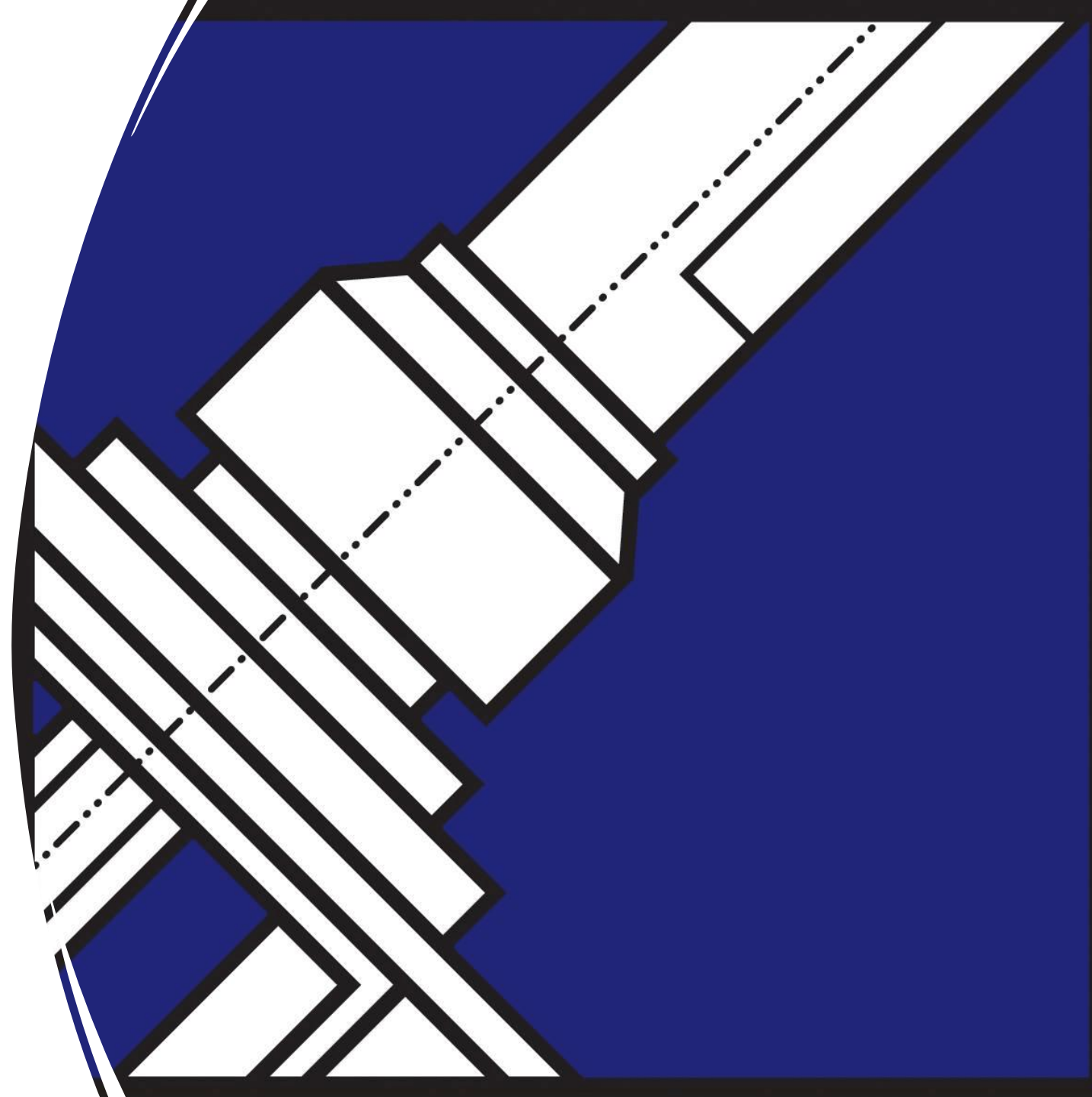
# 9mm Carbon Potentiometers

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Types of 9mm Carbon Pots:

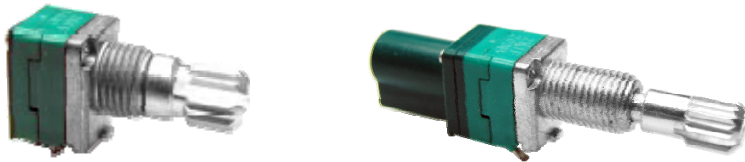
- Metal Shaft Potentiometers
- Metal Shaft Snap-in Potentiometers
- Snap-in Insulated Shaft Potentiometers
- LED Potentiometers

These will be further classified as single/dual shaft, horizontal/vertical mount, with/without switch, multi-ganged



# ROTARY SENSORS

## 9mm Size Metal Shaft Potentiometers



### ◆ FEATURE

- Very small, only 9.5mm wide.
- Compact design. 6.5mm and 10mm high from P.C. board to shaft center.
- Outset molding with resin around the resistor prevents flux build-up.

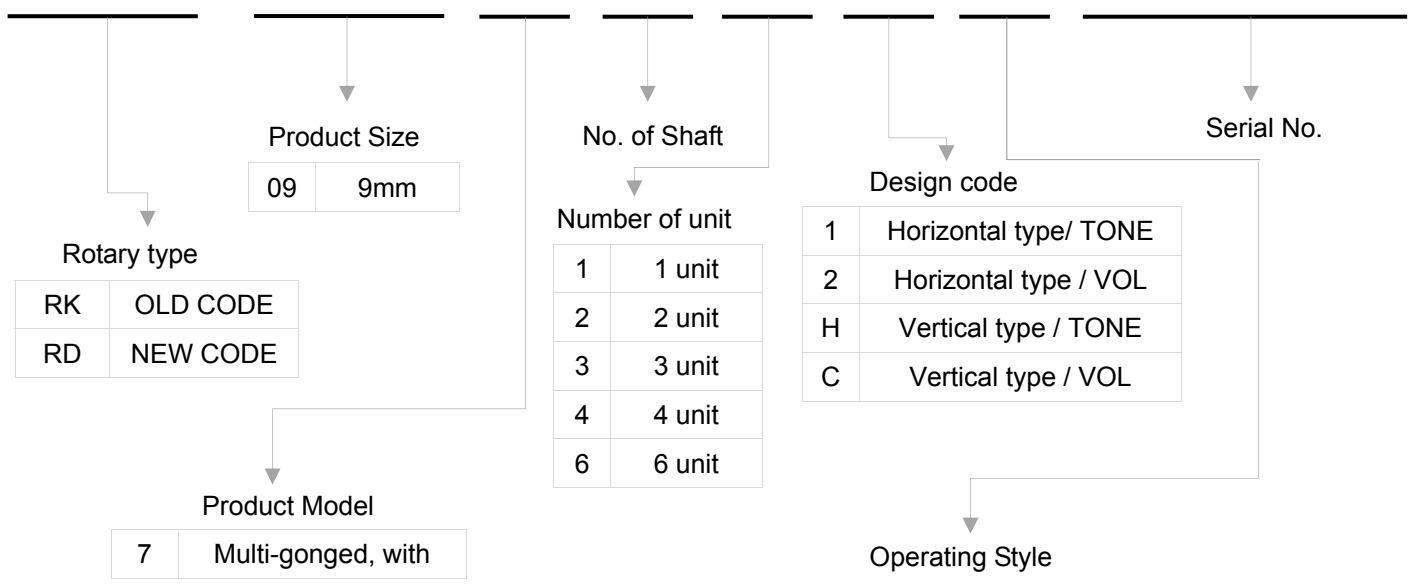
### ◆ APPLICATIONS

Ideal for volume, tone and balance control of car audio equipment.

### ◆ COMMON SPECIFICATIONS

Characteristics		Specification
Total rotational angle	General	300±5°
	Shaft moving type	300+10°/-5°
Rotational torque		20~250gf.cm
Detent torque	center detent	Rotational torque+ ( 30~200) gf.cm
	11.31.41 detent	30~200gf.cm
Total resistance (KΩ)		5.10.20,50,100,250.500
Total resistance tolerance		±20%
Rated power		0.05W
Resistance taper		A,B,C,D,E,K,W,RD,M,N
Maximum operating Voltage		50V AC      10V DC
Rotation life		15,000 cycles
Push lock mechanism operating life		10,000 cycles

R	D	0	9	7	1	2	2	0	0	0	1
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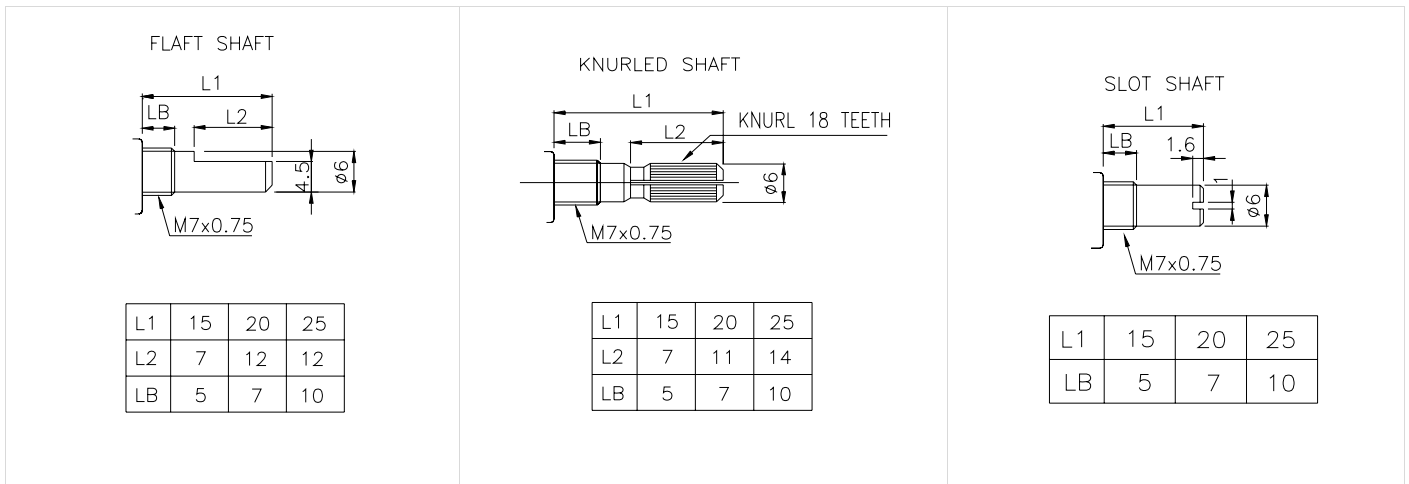


Without switch		With switch	
A	Center detent	1	Rotary switch
B	11 detent	2	Push-push switch
C	31 detent	4	Push-on momentary switch
D	41 detent		
P	Attaching plate		
T	Push lock		

# ROTARY POTENTIOMETERS

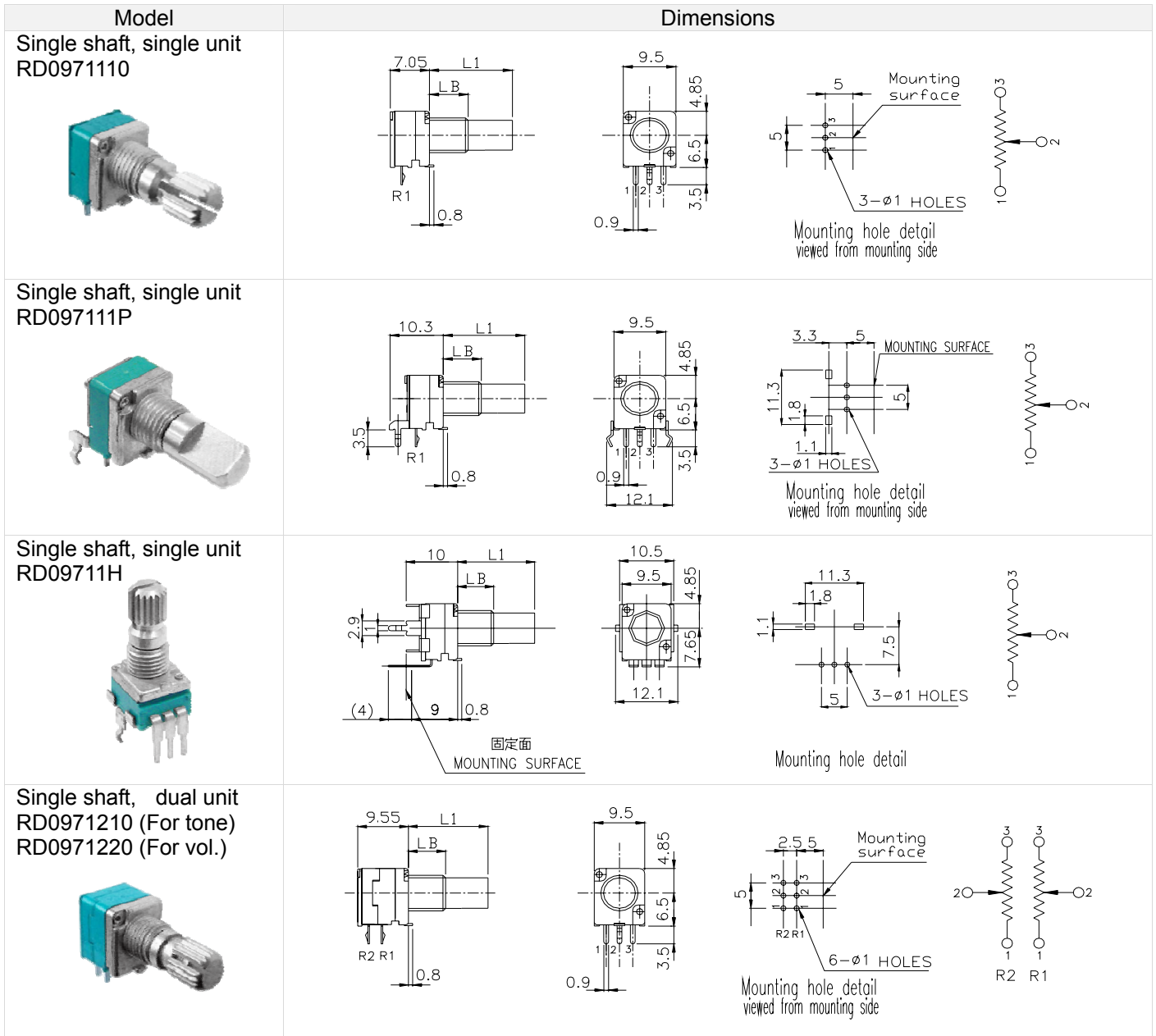
## 9mm Size Metal Shaft Potentiometers

### ◆ DIMENSIONS OF SHAFT



### ◆ DIMENSIONS

Unit: mm

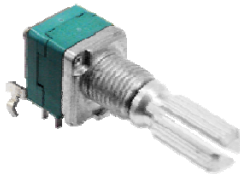
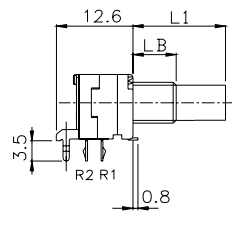
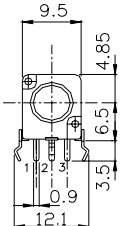
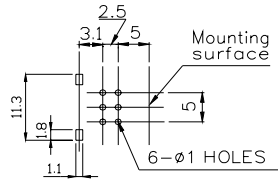
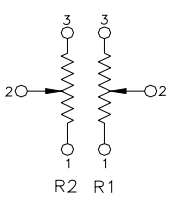

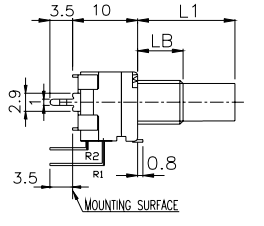
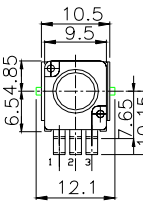
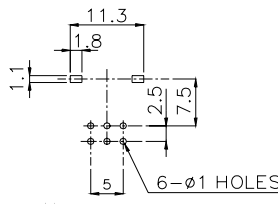
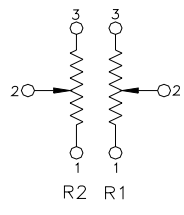
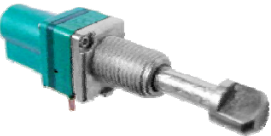
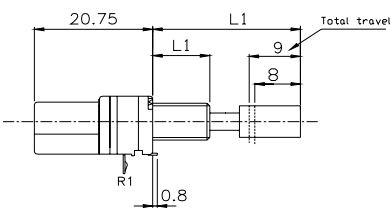
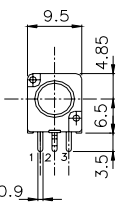
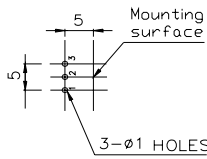
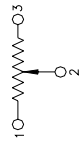
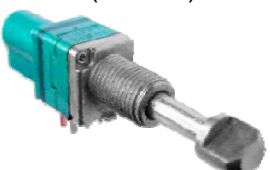
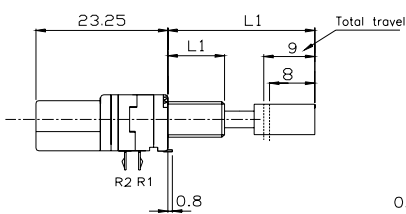
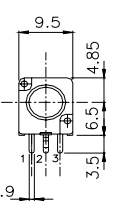
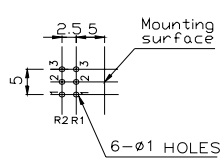
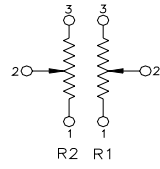
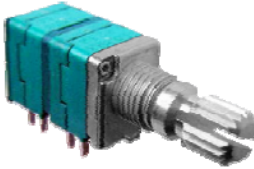
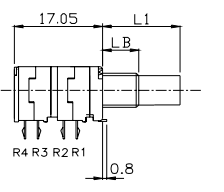
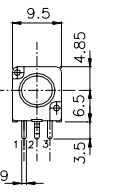
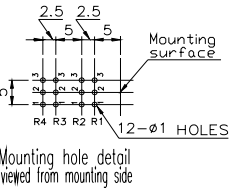
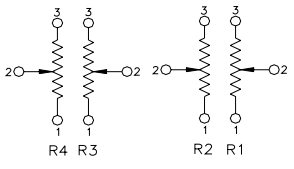
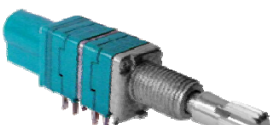
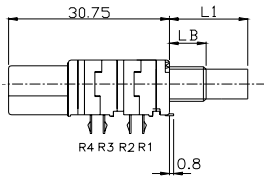
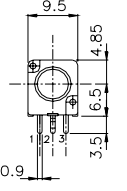
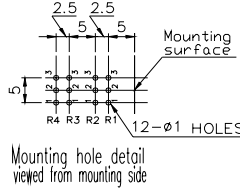
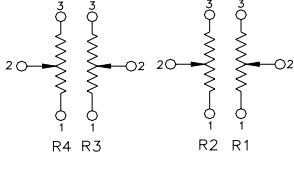


# ROTARY POTENTIOMETERS

## 9mm Size Metal Shaft Potentiometers

### ◆ DIMENSIONS

Unit: mm

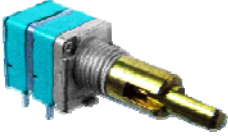
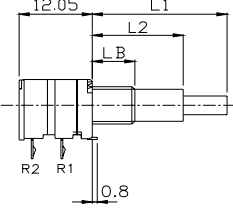
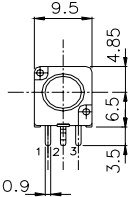
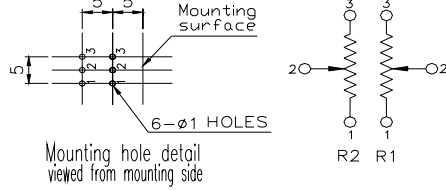
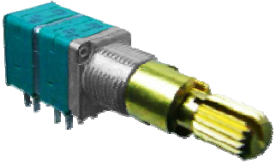
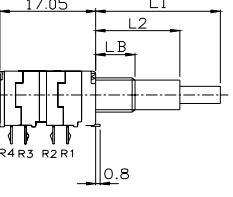
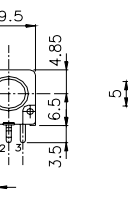
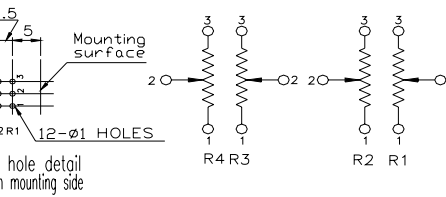
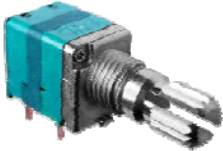
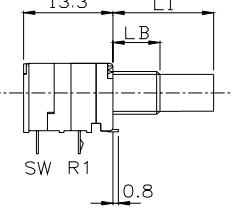
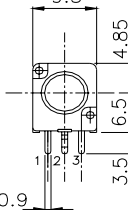
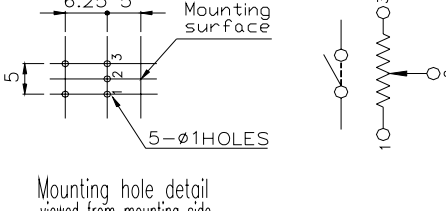
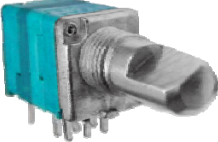
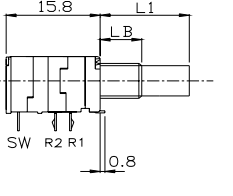
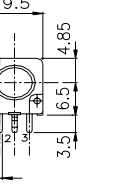
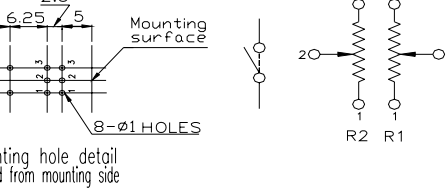
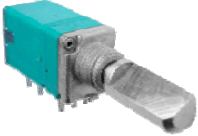
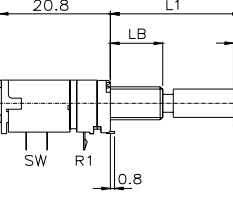
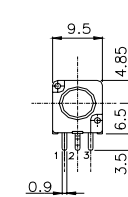
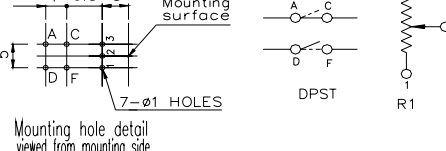
Model	Dimensions			
Single shaft, dual unit RD097121P (For tone) RD097122P (For vol.) 			 <p>Mounting hole detail viewed from mounting side</p>	
Single shaft, dual unit RD09712H (For tone) RD09712C (For vol.) 			 <p>Mounting hole detail</p>	
Single shaft, single unit With push-lock mechanism RD097111T 			 <p>Mounting hole detail viewed from mounting side</p>	
Single shaft, single dual With push-lock mechanism RD097121T (for tone) RD097122T (For vol.) 			 <p>Mounting hole detail viewed from mounting side</p>	
Single shaft, quad unit RD0971410 (For tone) RD0971420 (For vol.) 			 <p>Mounting hole detail viewed from mounting side</p>	
Single shaft, quad unit With push-lock mechanism RD097141T (For tone) RD097142T (For vol.) 			 <p>Mounting hole detail viewed from mounting side</p>	

# ROTARY POTENTIOMETERS

## 9mm Size Metal Shaft Potentiometers

### ◆ DIMENSIONS

Unit: mm

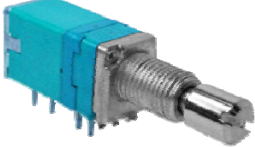
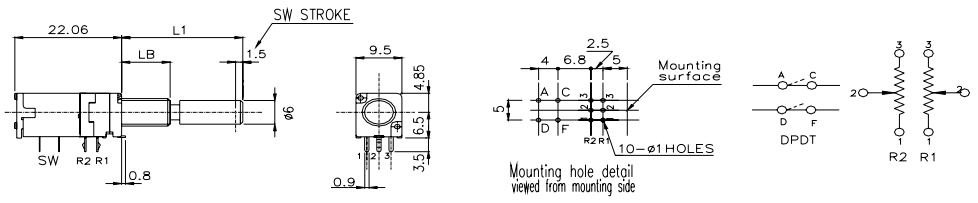
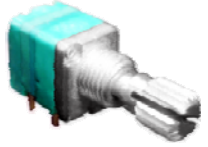
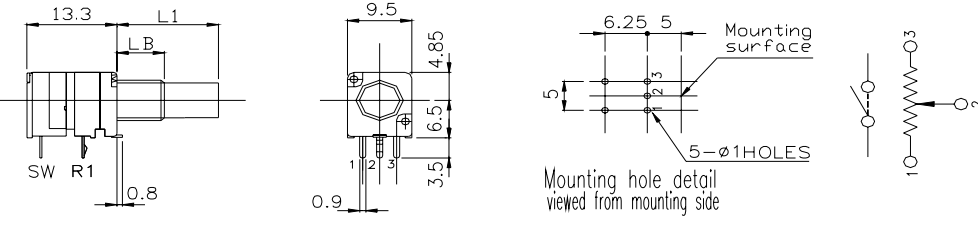
Model	Dimensions			
Dual shaft, dual unit RD097221 				
Dual shaft, quad unit RD0972410 (For tone) RD0972420 (For vol.) 				
Single shaft, single unit Rotary type - switch RD0971111-5R1211(SPST) 				
Single shaft, dual unit Rotary type - switch RD0971211-5R1211(SPST) RD0971221-5R1211(SPST) 				
Single shaft, single unit Push-push type - switch RD0971112-5R2412(SPDT) -5R2421 (DPST) 				

# ROTARY POTENTIOMETERS

## 9mm Size Metal Shaft Potentiometers

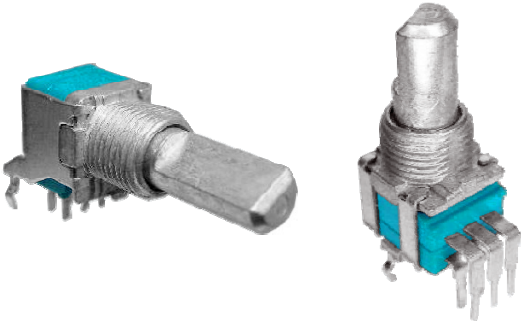
### ◆ DIMENSIONS

Unit: mm

Model	Dimensions		
<p>Single shaft, dual unit Push-push type - switch RD0971212-5R2412(SPDT) -5R2421 (DPST)</p> 			
<p>Single shaft, single unit Momentary push on type - switch Travel 1.5mm RD0971114-5R4611</p> 			

# ROTARY POTENTIOMETERS

## 9mm Size Metal Shaft Snap-In Potentiometers



### ◆ FEATURE

- Snap terminals provide greater standing strength.
- Auto-dip is possible.
- Can be mounted vertically or horizontally.

### ◆ APPLICATIONS

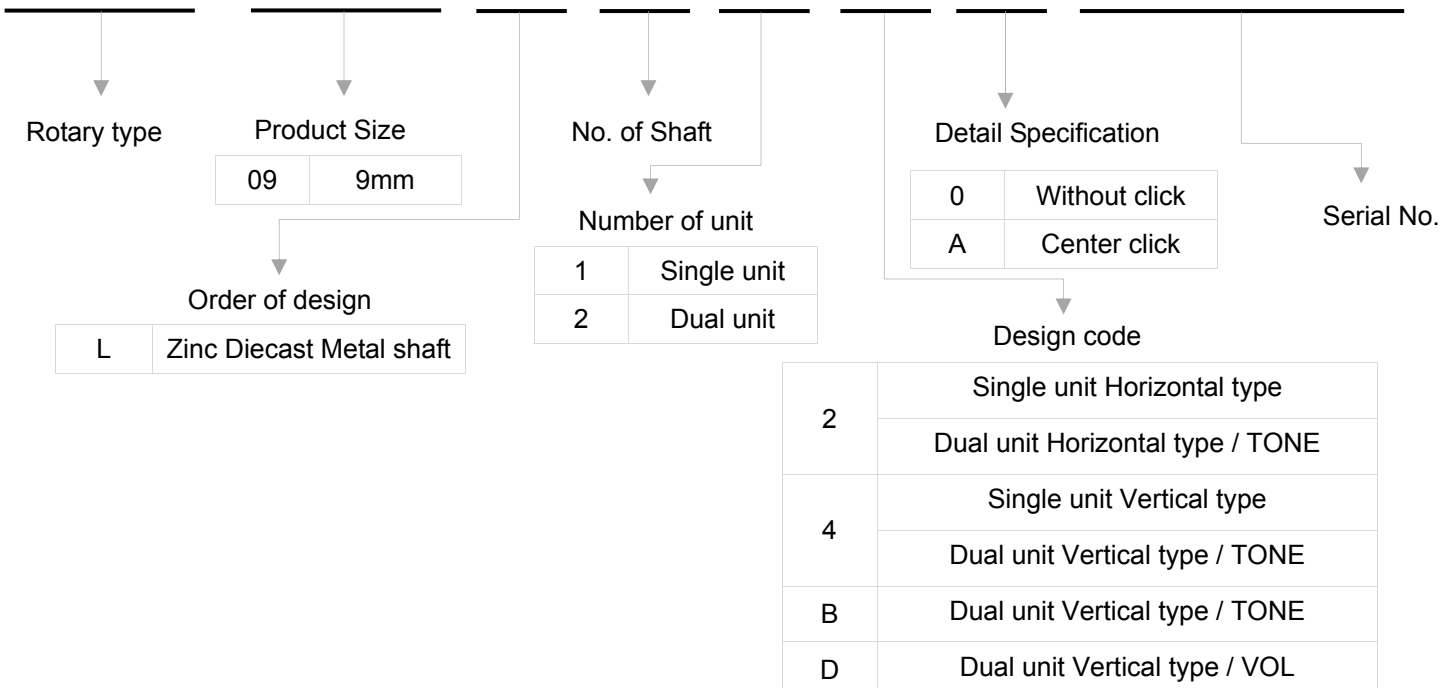
- Amplifier, CD player, cassette recorder  
With radio, etc,

### ◆ SPECIFICATIONS

Characteristics	Specification
Total rotational angle	300±5°
Rotational torque	20~250gf.cm
Detent torque	Rotational torque+ ( 20~200)gf.cm
Rotation stopper strength	5Kgf · cm
Push pull strength	8Kgf Max
Total resistance (KΩ)	5,10,20,50,100,250,500 (KΩ)
Total resistance tolerance	±20%
Rated power	0.05W
Maximum operating Voltage	50V AC 5V DC
Resistance taper	A,B,C,D,E,K,W
Rotation life	15,000 cycles

### ◆ PRODUCTS NUMBERING SYSTEM

R	D	0	9	L	1	2	2	A	0	0	1
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# ROTARY POTENTIOMETERS

## 9mm Size Metal Shaft Snap-In Potentiometers

### ◆ DIMENSIONS OF SHAFT

FLAFT SHAFT

L1	12.5	15	17.5	20	25
L2	7	7	7	12	12
LB	5	5	5	7	7

### ◆ DIMENSIONS

Unit mm

Model	Dimensions
Single unit RD09L1120 	<p>Mounting hole detail viewed from mounting side</p>
Single unit RD09L1140 	<p>Mounting hole detail viewed from mounting side</p>
Dual unit RD09L1220(For tone) RD09L12B0(For vol.) 	<p>Mounting hole detail viewed from mounting side</p>
Dual unit RD09L1240(For tone) RD09L12D0(For vol.) 	<p>Mounting hole detail viewed from mounting side</p>



# ROTARY POTENTIOMETERS

## 9mm Size Snap-in Insulated Shaft Potentiometers



### ◆ Applications

- TV sets, VCRs, radios, etc

### ◆ Features

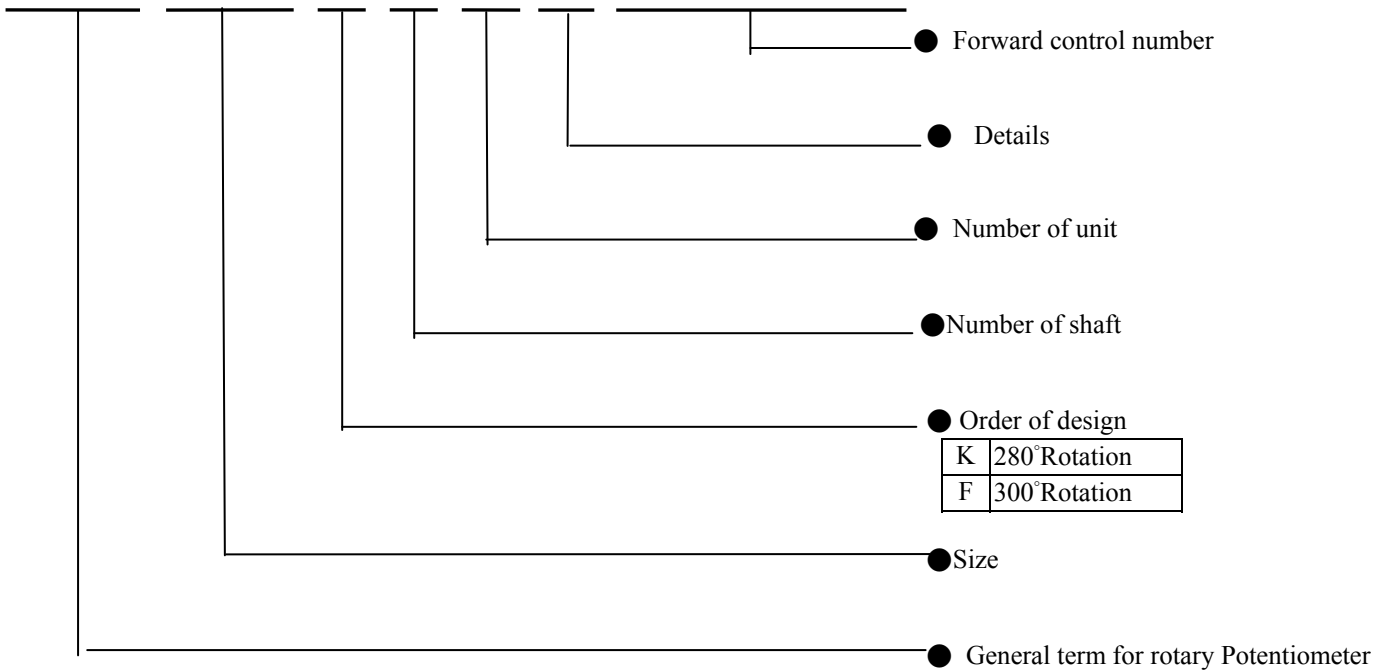
- Insert-molding with resin applied around the resistor Assures high flux resistance
- Available with a wide choice of shafts
- Units can be provided with bushing and detent
- Dust-proof construction without any opening part.
- 9.8mm outline size is ideal for high-density set design.

### ◆ Common specifications

Application	9mm size	
	Single-unit	Dual-unit
Total Rotational angle	280±5°	280±5°
	300±5°	
Operating torque	10~80gf-cm	
Total resistance (KΩ)	5,10,20,50,100	5,10,20,50,100
Total resistance tolerance	±20%	±30%
Resistance taper	A, B, C, D, E, K, W	A, B, C, D
Power rating	0.05W	0.03W
Max operating Voltage	50V A.C    20V D.C	50V A.C    For A.C only
Rotational Life	5,000 cycles	10,000 cycles

### ◆ Products Numbering System

R	K	0	9	K	1	1	3	0	0	0	1
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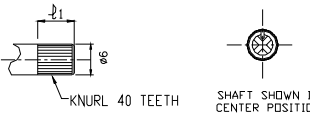
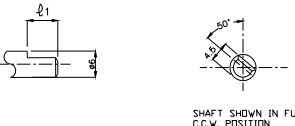
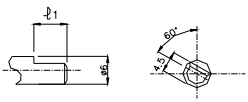

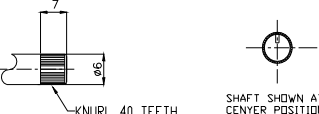

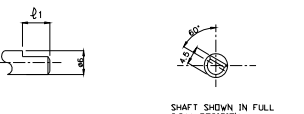
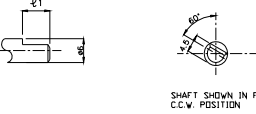
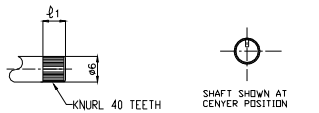
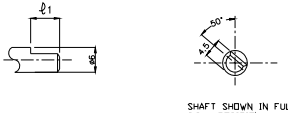
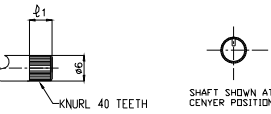
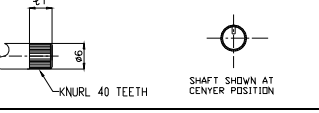
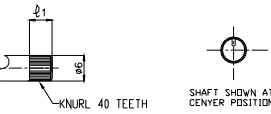
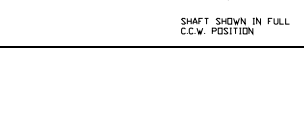
RK	Old code
RD	New code

# ROTARY POTENTIOMETERS

## 9mm Size Snap-in Insulated Shaft Potentiometers

### ◆ Shaft type

Unit: mm

		Shaft type	Shaft dimensions												
Single-unit	Horizontal type    Vertical type	Knob type	 <table border="1"> <tr><td>LM1</td><td>15</td><td>20</td><td>25</td><td>30</td><td>35</td></tr> <tr><td>11</td><td>6</td><td>7</td><td>7</td><td>7</td><td>7</td></tr> </table>	LM1	15	20	25	30	35	11	6	7	7	7	7
		LM1	15	20	25	30	35								
		11	6	7	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>25</td></tr> <tr><td>11</td><td>—</td><td>6</td><td>7</td><td>7</td></tr> </table>	LM1	9.5	15	20	25	11	—	6	7	7		
		LM1	9.5	15	20	25									
	11	—	6	7	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>11</td><td>6</td><td>7</td><td>12</td><td>12</td></tr> </table>	LM1	15	20	25	30	11	6	7	12	12			
	LM1	15	20	25	30										
	11	6	7	12	12										
	280° Rotation	 <table border="1"> <tr><td>LM1</td><td>15</td><td>20</td><td>25</td><td>30</td></tr> <tr><td>11</td><td>6</td><td>7</td><td>12</td><td>12</td></tr> </table>	LM1	15	20	25	30	11	6	7	12	12			
LM1	15	20	25	30											
11	6	7	12	12											
300° Rotation	 <table border="1"> <tr><td>LM1</td><td>15</td><td>20</td><td>25</td><td>30</td></tr> <tr><td>11</td><td>6</td><td>7</td><td>12</td><td>12</td></tr> </table>	LM1	15	20	25	30	11	6	7	12	12				
LM1	15	20	25	30											
11	6	7	12	12											
With collar	Horizontal type    Vertical type	Knob type	 <p>LM1=20,25,30,35</p>												
		Flat type	 <table border="1"> <tr><td>LM1</td><td>—</td><td>20</td><td>25</td><td>30</td><td>35</td></tr> <tr><td>11</td><td>—</td><td>7</td><td>12</td><td>12</td><td>12</td></tr> </table>	LM1	—	20	25	30	35	11	—	7	12	12	12
	LM1	—	20	25	30	35									
	11	—	7	12	12	12									
	With bushing	Horizontal type    Vertical type	280° Rotation	 <table border="1"> <tr><td>LM1</td><td>—</td><td>20</td><td>25</td><td>30</td><td>—</td></tr> <tr><td>11</td><td>—</td><td>7</td><td>12</td><td>12</td><td>—</td></tr> </table>	LM1	—	20	25	30	—	11	—	7	12	12
LM1			—	20	25	30	—								
11		—	7	12	12	—									
300° Rotation	 <table border="1"> <tr><td>LM1</td><td>—</td><td>20</td><td>25</td><td>30</td><td>—</td></tr> <tr><td>11</td><td>—</td><td>7</td><td>12</td><td>12</td><td>—</td></tr> </table>	LM1	—	20	25	30	—	11	—	7	12	12	—		
LM1	—	20	25	30	—										
11	—	7	12	12	—										
Dual-unit	Horizontal type    Vertical type	Knob type	 <table border="1"> <tr><td>LM1</td><td>15</td><td>20</td><td>25</td><td>30</td><td>—</td></tr> <tr><td>11</td><td>6</td><td>7</td><td>7</td><td>7</td><td>—</td></tr> </table>	LM1	15	20	25	30	—	11	6	7	7	7	—
		LM1	15	20	25	30	—								
		11	6	7	7	7	—								
	Flat type	 <table border="1"> <tr><td>LM1</td><td>15</td><td>20</td><td>25</td><td>30</td><td>—</td></tr> <tr><td>11</td><td>6</td><td>7</td><td>12</td><td>12</td><td>—</td></tr> </table>	LM1	15	20	25	30	—	11	6	7	12	12	—	
	LM1	15	20	25	30	—									
	11	6	7	12	12	—									
280° Rotation	 <table border="1"> <tr><td>LM1</td><td>—</td><td>20</td><td>25</td><td>30</td><td>—</td></tr> <tr><td>11</td><td>—</td><td>7</td><td>7</td><td>7</td><td>—</td></tr> </table>	LM1	—	20	25	30	—	11	—	7	7	7	—		
LM1	—	20	25	30	—										
11	—	7	7	7	—										
With collar	Horizontal type    Vertical type	Knob type	 <table border="1"> <tr><td>LM1</td><td>—</td><td>20</td><td>25</td><td>30</td><td>—</td></tr> <tr><td>11</td><td>—</td><td>7</td><td>7</td><td>7</td><td>—</td></tr> </table>	LM1	—	20	25	30	—	11	—	7	7	7	—
		LM1	—	20	25	30	—								
	11	—	7	7	7	—									
Flat type	 <table border="1"> <tr><td>LM1</td><td>—</td><td>20</td><td>25</td><td>30</td><td>—</td></tr> <tr><td>11</td><td>—</td><td>7</td><td>12</td><td>12</td><td>—</td></tr> </table>	LM1	—	20	25	30	—	11	—	7	12	12	—		
LM1	—	20	25	30	—										
11	—	7	12	12	—										
280° Rotation	 <table border="1"> <tr><td>LM1</td><td>—</td><td>20</td><td>25</td><td>30</td><td>—</td></tr> <tr><td>11</td><td>—</td><td>7</td><td>12</td><td>12</td><td>—</td></tr> </table>	LM1	—	20	25	30	—	11	—	7	12	12	—		
LM1	—	20	25	30	—										
11	—	7	12	12	—										

# ROTARY POTENTIOMETERS

## 9mm Size Snap-in Insulated Shaft Potentiometers

### ◆Single-shaft ,Single-unit

Unit: mm

Model	Dimensions	Mounting hole details/ Circuit
RK09K111 (280° Rotation) RD09F111 (300° Rotation)		
RD09K112 (280° Rotation) RD09F112 (300° Rotation)		
RK09K113 (280° Rotation) RD09F113 (300° Rotation)		
RD09K114 (280° Rotation) RD09F114 (300° Rotation)		

### ◆Single-shaft ,Single-unit with collar

Unit: mm


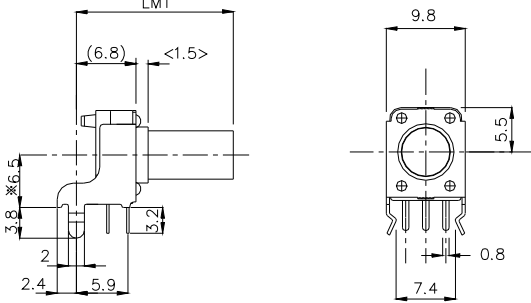
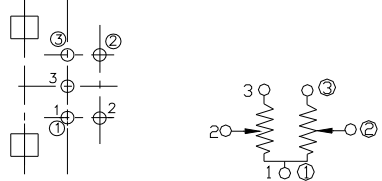
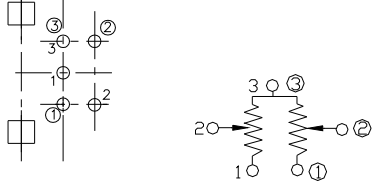

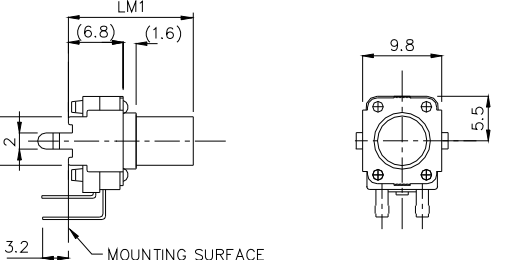
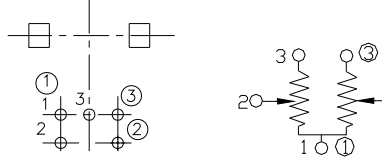


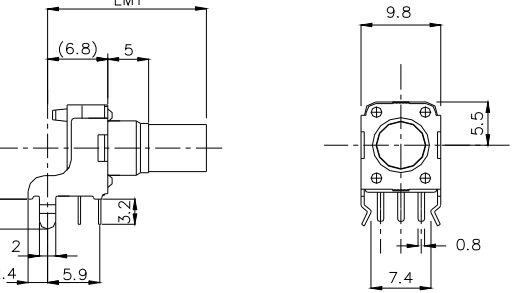
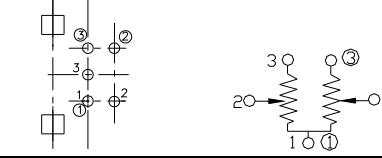
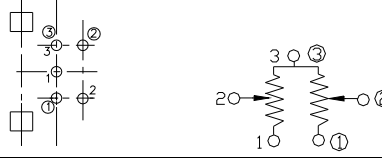

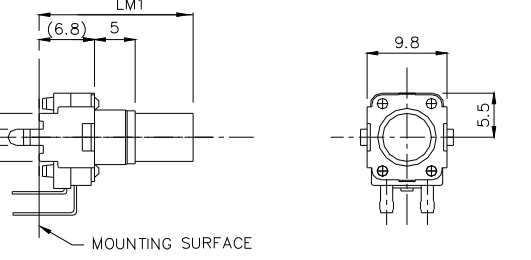
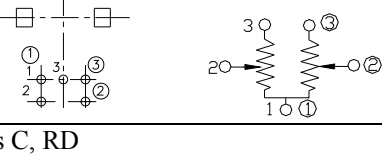
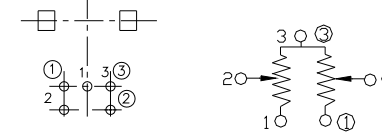
Model	Dimensions	Mounting hole details/ Circuit
RK09K111Z (280° Rotation) RD09F111 (300° Rotation)		
RK09K113Z (280° Rotation) RD09F113 (300° Rotation)		

# ROTARY POTENTIOMETERS

## 9mm Size Snap-in Insulated Shaft Potentiometers

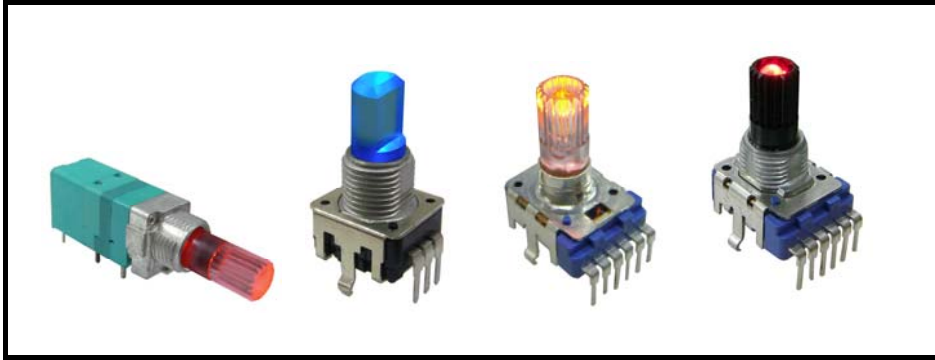
### ◆Single-shaft ,dual-unit

Unit: mm

Model	Dimensions	Mounting hole details/ Circuit
	 <p>※ Mounting height H =6.5mm only</p>	<p>Tapers A,B,D</p>  <p>Tapers C, RD</p> 
		<p>Tapers A,B,D</p>  <p>Tapers C, RD</p> 
	 <p>※ Mounting height H =6.5mm only</p>	<p>Tapers A,B,D</p>  <p>Tapers C, RD</p> 
		<p>Tapers A,B,D</p>  <p>Tapers C, RD</p> 

# ROTARY POTENTIOMETERS

## With LED Potentiometers



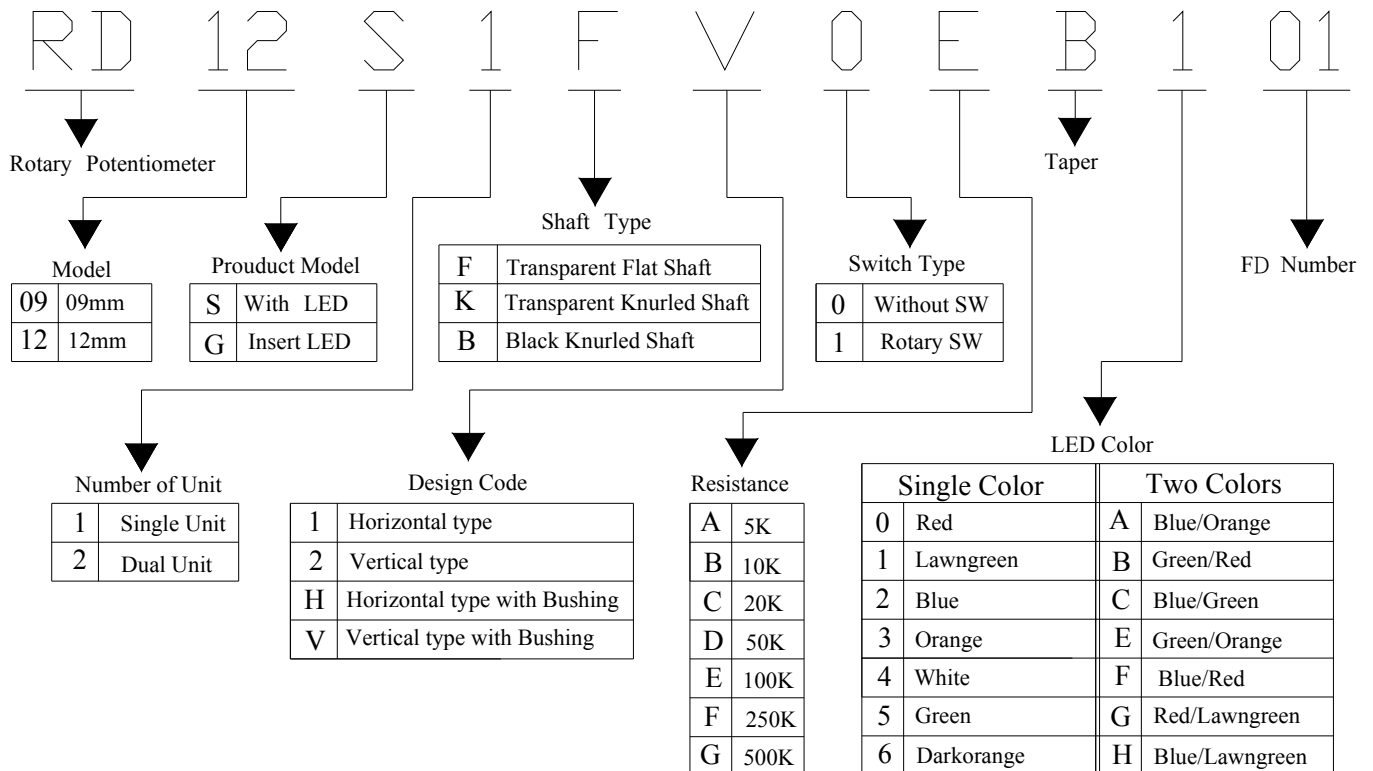
### ◆Feature

- Outset molding with resin around the resistor prevents flux build-up.
- Red 、 green 、 blue and orange LED colors are available.

### ◆Applications

- Ideal for volume, tone and balance control of car audio equipment.

## Products Numbering System



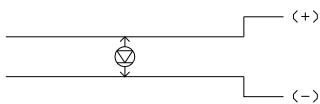
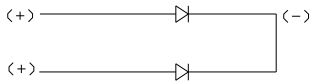
# ROTARY POTENTIOMETERS

## With LED Potentiometers

### ◆ Common Specification

Characteristics	Specification	
	RD09S · RD12S	RD12G
Total rotational angle	300±5°	
Rotational torque	10~80gf.cm	30~250gf.cm
Rotation stopper strength	3Kgf.cm	5Kgf.cm
Push pull strength	8kgf max	
Total resistance	5,10,20,50,100,250(KΩ)	
Total resistance tolerance	±20%	
Rated power	0.05W	
Maximum operating	50V AC 10V DC	
Resistance taper	A,B,C,D,E,K,W	
Insulation resistance	100mΩ min. 250V DC	
Withstand voltage	1 minute 300V AC	
Rotation life	15,000 cycles	

### ◆ LED Specifications

Emitted color	
	
<b>Single color LED</b>	<b>two colors LED</b>
<b>Red</b>	<b>Blue / Orange</b>
<b>Lawngreen</b>	<b>Green / Red</b>
<b>Blue</b>	<b>Blue / Green</b>
<b>Orange</b>	
<b>White</b>	
<b>Green</b>	
<b>Darkorange</b>	

# ROTARY POTENTIOMETERS

## 9mm With LED Potentiometers

### ◆ Standard Dimension of Shaft and Bushing

Unit: mm

Knurled Shaft With Bushin	Shaft angle	Plug Dimensions
	<p>SHAFT SHOWN IN CENTER POSITION</p>	

### ◆ Dimensions

Unit: mm

Model	Dimensions
<p>Single shaft, single unit With single color LED <b>RD09S1KH0</b></p>	
<p>Single shaft, single unit With dual color LED <b>RD09S1KH0</b></p>	
<p>Single shaft, single unit With switch and single color LED <b>RD09S1KH1</b></p>	
<p>Single shaft, single unit With switch and dual color LED <b>RD09S1KH1</b></p>	