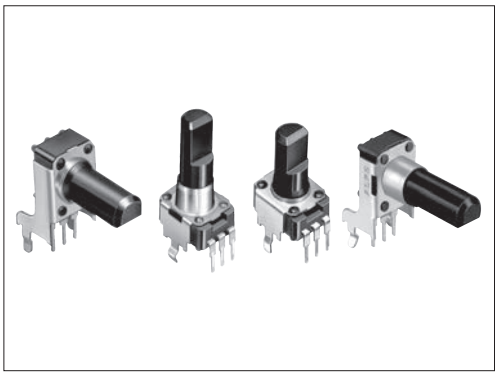
RK09K RK09D

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℃ to +70℃

Product Line

Number of resistor elements	Mounting direction	Total rotationangle	Collar (Sleeve type)	Shaft type	Length of the shaft LM1 (mm)	Center detent	Total resistance(kΩ)	Resistance taper	Minimum order unit (pcs.) Japan	Minimum order unit (pcs.) Export	Products No.	Drawing No.
Single-unit (20V DC)	Vertical type	280°±5°	Without	Flat	15	With	10	1B	1,000	2,000	RK09K113004U	2
						Without	5				RK09K1130AU2	
							10				RK09K1130A6S	
								15A			RK09K1130AJ3	
							20	1B			RK09K1130ACM	
							50				RK09K1130ACL	
					20		10				RK09K1130AAU	
					25						RK09K1130AH1	
					30		5				RK09K1130BM4	
				Knob	15		10				RK09K1130A8G	7
					20						RK09K1130A5R	
						With					RK09K1130081	
					30	Without					RK09K1130A70	
				Screw driver	15						RK09K1130AP5	8
					20		5				RK09K1130AV7	
	Horizontal type H=6.5mm			Flat	15		10	15A			RK09K1110A2S	1
								1B			RK09K1110AK4	
							20				RK09K1110AH8	
					20		5				RK09K1110B1V	
				Knob			10				RK09K1110A0J	5
						With	50				RK09K11100E9	
	Horizontal type H=10mm			Flat	15	Without		15A			RK09K1110B1R	6
					20		10	1B			RK09K1110B26	
	Vertical type	300°±5°	With								RK09D1130C1B	4
					25						RK09D1130C2P	
							50				RK09D1130A1L	
					30		10				RK09D1130A1N	
					20	With					RK09D1130C3W	
					25						RK09D1130C3C	
					30						RK09D113000F	
	Horizontal type H=10mm				25	Without	50				RK09D1110C0R	3

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.

9mm Size Insulated Shaft Snap-in Type

Product Line

Number of resistor elements	Mounting direction	Total rotationangle	Collar (Sleeve type)	Shaft type	Length of the shaft LM1 (mm)	Center detent	Total resistance(kΩ)	Resistance taper	Minimum order unit (pcs.) Japan	Minimum order unit (pcs.) Export	Products No.	Drawing No.
Dual-unit (50V AC)	Vertical type	280°±5°	Without	Flat	15	Without	10	15A	1,000	2,000	**RK09K12C0A19**	10
					20		50				**RK09K12C0A2S**	
					30		10				**RK09K12C0A4D**	
			With		25						**RK09K12C0A8P**	12
					30						**RK09K12C0A8K**	
	Horizontal type H=6.5mm		Without		15						**RK09K12A0A2K**	9
					20		50				**RK09K12A0A6R**	
			With								**RK09K12A0B0W**	11

For the Mixing Console Market

Number of resistor elements	Mounting direction	Total rotationangle	Collar (Sleeve type)	Shaft type	Length of the shaft LM1 (mm)	Center detent	Total resistance(kΩ)	Resistance taper	Minimum order unit (pcs.) Japan	Minimum order unit (pcs.) Export	Products No.	Drawing No.
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 rotationangle	Collar (Sleeve type)	Shaft type	Length of the shaft LM1 (mm)	Center detent	Total resistance(kΩ)	Resistance taper	Minimum order unit (pcs.) Japan	Minimum order unit (pcs.) Export	Products No.	Drawing No.
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

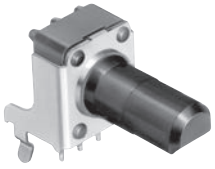
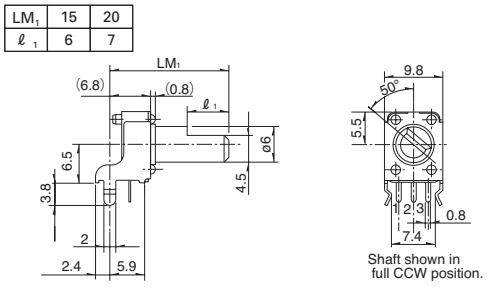
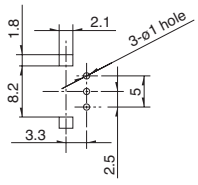
Bulk

Number of packages (pcs.) 1 case / Japan	Number of packages (pcs.) 1 case / export packing	Export package measurements (mm)
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	**Horizontal type RK09K111** 		

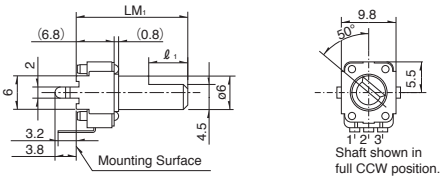
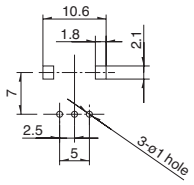
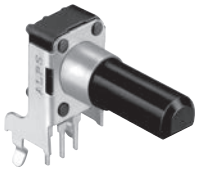
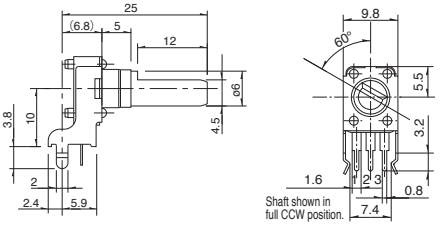
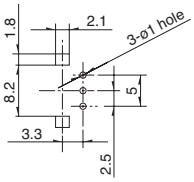
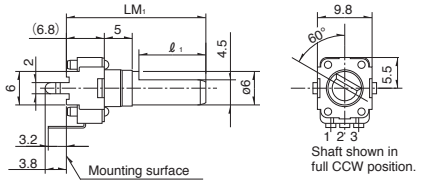
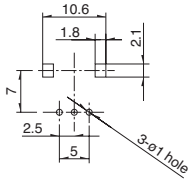
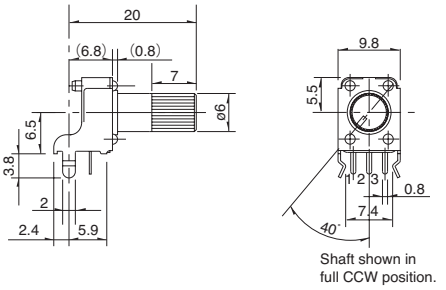
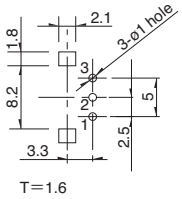
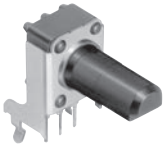
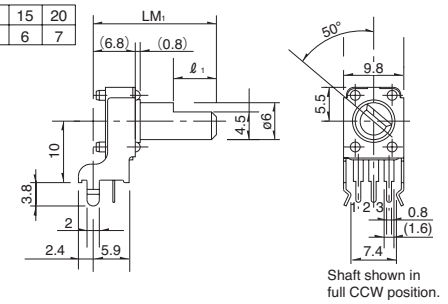
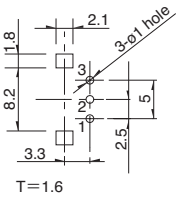
Refer to P.356 for other specifications.
Refer to P.357 for ordering products not listed.
Refer to P.371 for soldering conditions.

ALPS

Dimensions

Single-shaft, single-unit

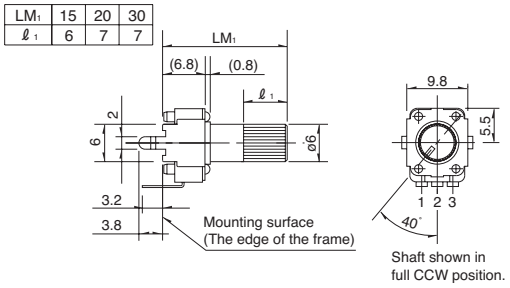
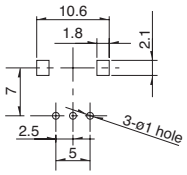
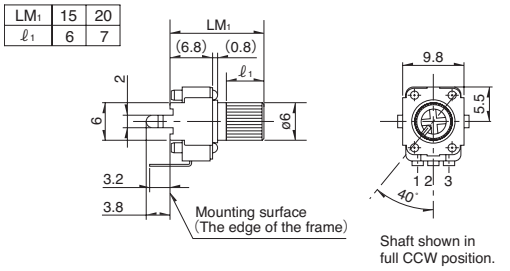
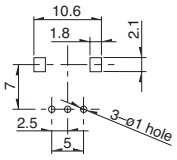
Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
2	**Vertical type** **RK09K113** 	LM₁: 15, 20, 25, 30 ℓ₁: 6, 7, 12, 12 	
3	**Horizontal type** **with collar** **RK09D111** 		
4	**Vertical type** **with collar** **RK09D113** **RK09D117** 	LM₁: 20, 25, 30 ℓ₁: 7, 12, 12 	
5	**Horizontal type** **RK09K111** 		
6	**Horizontal type** **RK09K111** 	LM₁: 15, 20 ℓ₁: 6, 7 	

Dimensions

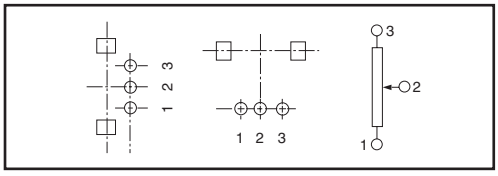
Single-shaft, single-unit

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
7	**Vertical type** **RK09K113** 		
8	**Vertical type** **RK09K113** 		

Terminal Layout / Circuit Diagram

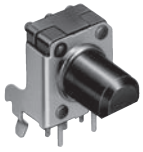
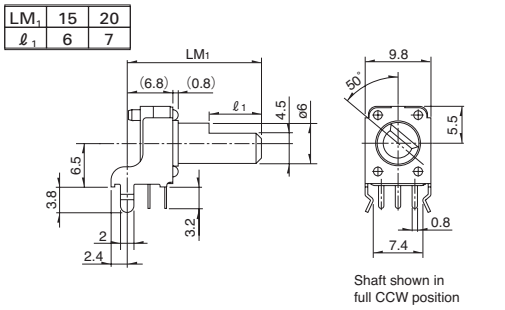
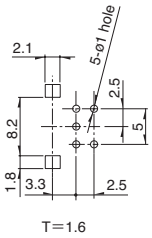
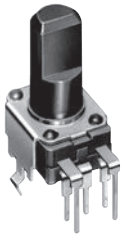
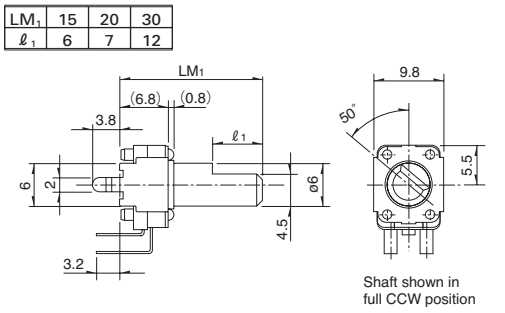
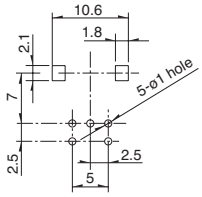
Single-unit



Dimensions

Single-shaft, dual-unit

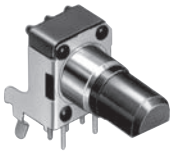
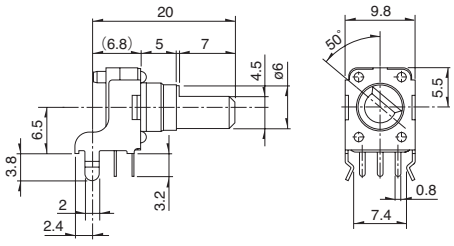
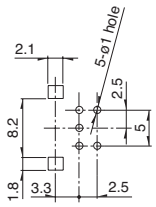
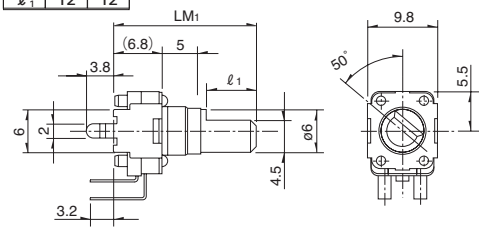
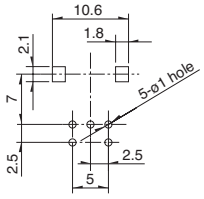
Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
9	**Horizontal type** **RK09K12A** 		
10	**Vertical type** **RK09K12C** 		

Dimensions

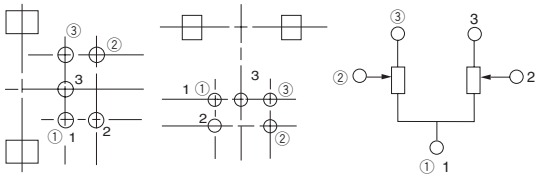
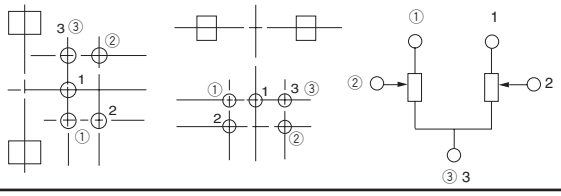
Single-shaft, dual-unit

Unit:mm

No.	Photo	Style	PC board mounting hole dimensions (Viewed from mounting side)
11	**Horizontal type with collar RK09K12A** 	 Shaft shown in full CCW position	
12	**Vertical type with collar RK09K12C**	LM_1 25 30 ℓ_1 12 12  Shaft shown in full CCW position	

Terminal Layout / Circuit Diagram

Dual-unit

Tapers 15A, 1B, 3B	Tapers 15C
	

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

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

Total Resistance Variety

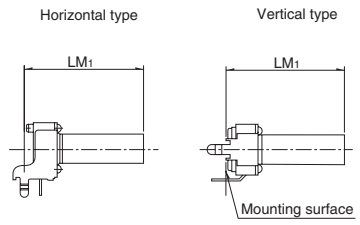
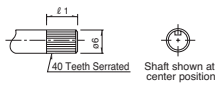
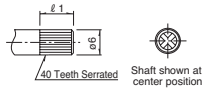
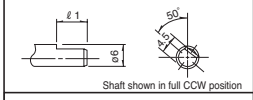
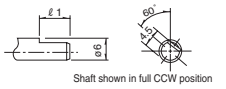
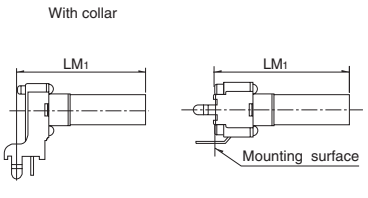
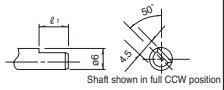
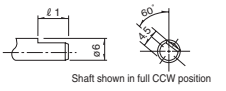
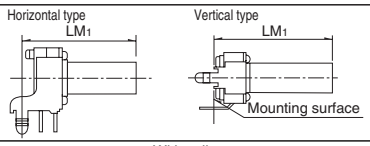
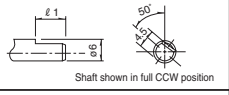
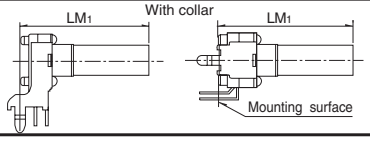
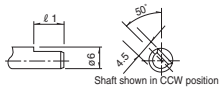
Total resistance (k Ω)	5	10	20	50	100	200

Resistance Taper

Resistance taper	15A	1B	3B	15C

Shaft Variety

Unit:mm

Number of resistor elements	Style	Shaft type: Knob variety	Shaft type: Detail dimensions	Shaft color
Single-unit		Knob type (φ6) 	LM1: 15, 20, 25, 30 ℓ1: 6, 7, 7, 7	Black
		Screw-driver adjustment type 	LM1: 9.5, 15, 20 ℓ1: —, 6, 7	
		Flat type 	LM1: 15, 20, 25, 30 ℓ1: 6, 7, 12, 12	
		Flat type 	LM1: 15, 20, 25, 30 ℓ1: 6, 7, 12, 12	Gray (15, 20, 25) Black (30)
		Flat type 	LM1: 20, 25, 30 ℓ1: 7, 12, 12	Black
		Flat type 	LM1: 20, 25, 30 ℓ1: 7, 12, 12	Gray (20, 25) Black (30)
Dual-unit		Flat type 	LM1: 15, 20, 25, 30 ℓ1: 6, 7, 12, 12	Black
		Flat type 	LM1: 20, 25, 30 ℓ1: 7, 12, 12	

Notes

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

ALPS

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 LM_1 (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

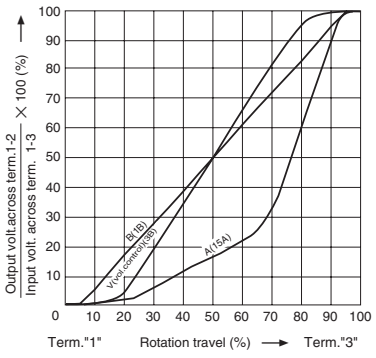
Code	Center detent
C0	Without
C1	With

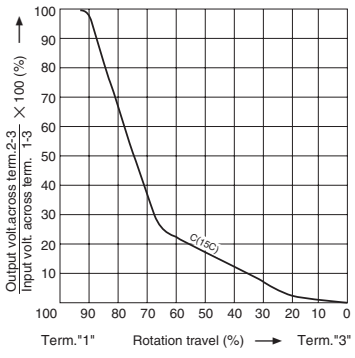
Resistance taper

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.





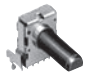
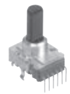
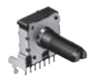
Total resistance

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.

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℃ to + 70℃					−40℃ to + 85℃	−10℃ to + 70℃
Operating life		5,000 cycles	10,000 cycles	1,000,000 cycles	15,000 cycles			
Available for automotive use		—	—	—	—	—	●	—
Life cycle		★2		★2	★2	★2	★2	★2
Electrical performance	Total resistance (k Ω)	5, 10, 20, 50, 100, 200		10	5, 10, 20, 50, 100, 200		5, 10, 20, 50, 100	5, 10, 20, 50, 100, 200
	Resistance taper	15A, 1B, 3B, 15C		B	15A, 1B, 3B, 15C		15A, 1B, 3B	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	50V AC for AC only
	Gang error	—	−40dB to 0dB 3dB max.	—	—	Volume control −40dB to 0dB 3dB max. For tone control within 2dB at center	—	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	Without, Center
	Stopper strength	0.3N·m		—	Without bushing 0.5N·m With bushing 0.6N·m	0.5N·m		0.6N·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						
Page		351		358	359	363	366	367

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Potentiometers Measurement and Test Methods · · · · · 429
Potentiometers Resistance Taper · · · · · 431

Note

● Indicates applicability to all products in the series.

Reference for Manual Soldering

Series	Tip temperature	Soldering time	No. of solders
RK09D, RK09K, RK09Y11L, RK11K, RK12L, RK12L115, RK14K	350℃ 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℃	1 min. max.	260℃ max.	5s max.	2 time max.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ALPS:
RK09K12C0A4D RK09D113F25C0A104 RK09D113AF25B55 RK09D113AF25A15 RK09D1130A0Z RK09D113000K RK09D113000Q RK09D113000D RK09K111F15C0B104 RK09D111-F25-C0-V103 RK09D113-F25-C1-B503 RK09D113-F25-C0-B103 RK09K1110-K15-C0-B104 RK09D1130-F25-C0-A104 RK09K1110-K25-C1-B103 RK09D113AF25B15 RK09K11300P3 RK09D1130009 RK09D1130A0S RK09K111-K25-C0-B103 RK09D1130-F30-C0-B104 RK09D113F25C0B504 RK09D113AF25A55 RK09K113-F15-C1-B502 SAMPLE # F0720328M RK09K1110-K25-C0-B103 RK09K111X15C0B103 RK09K12CK20C0A502 RK09D1130A07 RK09D113BF25B15 RK09D1130C70 RK09D1130-F30-C0-B502