Products Search

Product Search

Potentiometers

Rotary Potentiometer (Knob operating type)

With Knob Type RK10J Series

Part number RK10J11R0A0L

✓ Standard

Basic information ˅ Dimensions ˅ Mounting Hole Dimensions ˅ Terminal Layout ˅ Circuit Diagram ˅
Packing Specifications ˅ Soldering Conditions ˅

Number of resistor elements		Single-unit
Total resistance		10kΩ
Resistance taper		1B
Soldering		Reflow
Knob types		Outer size: ϕ14 Knob thickness: t1.0mm Color: Black
Mounting board types		Surface mounting
For DC use		20V DC
Dimensions		10mm size
Operating temperature range		-10℃ to +60℃
Electrical performance	Total resistance tolerance	±30%
	Rated power	0.03W
	Maximum operating voltage	50V AC, 20V DC
	Maximum attenuation	70dB min.
	Insulation resistance	100MΩ min. 100V DC
	Voltage proof	100V AC for 1 minute
Mechanical performance	Total rotational angle	270° ±10°
	Rotational torque	0.5 to 10mN·m
	Stopper strength	70mN·m
	Push-pull strength	5N
Durability	Operating life	10,000 cycles
Minimum order unit(pcs.)	Japan	3,000
	Export	3,000

NET SHOP

3D CAD

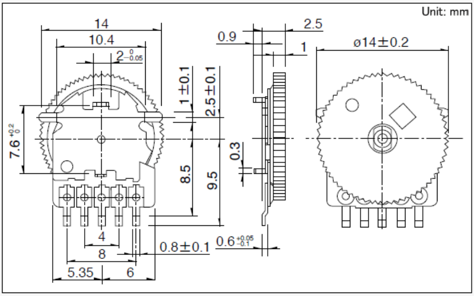
RoHS

Reference Drawings

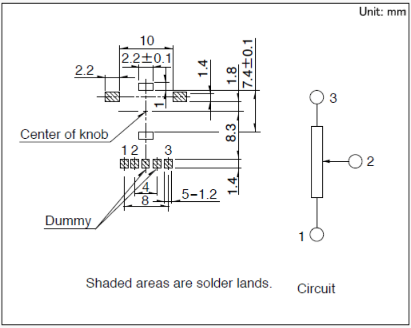
Inquiry

印刷

Dimensions



Mounting Hole Dimensions



Shaded areas are solder lands.

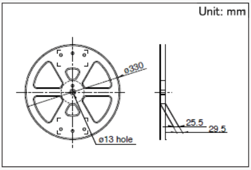
Viewed from mounting side.

Terminal Layout

Circuit Diagram

Packing Specifications

Taping



Number of packages (pcs.)

1 reel	1,000
1 case / Japan	3,000
1 case / export packing	3,000

Tape width (mm)

24

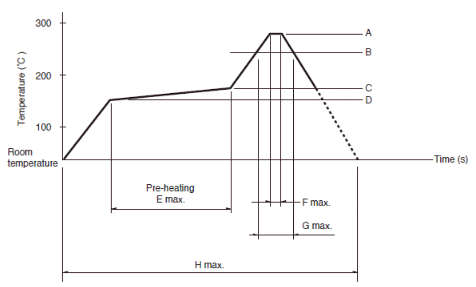
Export package measurements (mm)

401×397×139

Soldering Conditions

Example of Reflow Soldering Condition

1. Heating method
   Double heating method with infrared heater.
2. Temperature measurement
   Thermocouple 0.1 to 0.2 Φ CA (K) or CC (T) at soldering portion (copper foil surface). A heat resisting tape should be used for fixed measurement.
3. Temperature profile



A	B	C	D	E	F	G	H	No. of reflows
250℃	200℃	150℃	150℃	2 min.	3s	40s	4 min.	2 time max.

1. When using an infrared refl ow oven, solder may sometimes not be applied. Be sure to use a hot air refl ow oven or a type that uses infrared rays in combination with hot air.
2. The temperatures given above are the maximum temperatures at the terminals of the potentiometer when employing a hot air reflow method. The temperature of the PC board and the surface temperature of the potentiometer may vary greatly depending on the PC board material, its size and thickness. Ensure that the surface temperature of the potentiometer does not rise to 250° C or greater.
3. Conditions vary to some extent depending on the type of refl ow bath used. Be sure to give due consideration to this prior to use.

Reference for Hand Soldering

Tip temperature

350℃ max.

Soldering time

3s max.

No. of solders

1 time

Notes are common to this series/models

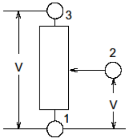
1. This site catalog shows only outline specifications. When using the products, please obtain formal specifications for supply.
2. Please place purchase orders per minimum order unit (integer).
3. Products other than those listed in above products are also available. Please contact us for details.
4. Dip soldering can be applied to RK14J. For dip soldering applications, specify separately as “dip soldering applicable product”.

Cautions

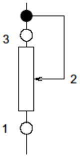
Recommended Circuit Configuration

When using variable resistors, It is recommended that you use them as voltage adjusting means, as shown in Fig. A. If the variable resistor is used as a current adjusting means as in Fig. B, it may be influenced by the contact resistance between the resistor body and the slide, depending on the set circuit. Conducting a test under actual operating conditions is highly recommended.

A.Voltage divider type

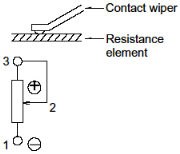


B.Current controller type



Terminal Connections

In applications where a direct current is allowed to flow through the potentiometer’s sliding arm, there could be a problem of anodic oxidation due to an unusual increase in resistance value. In this case, it is recommended that you connect the negative line to the resistance element and the positive line to the sliding arm.



Direct Voltage

When direct voltage is flown through this part, terminal to terminal insulation may deteriorate depending on the use environment. This is due to a migration phenomenon. Contact us if you are planning to use this part under direct voltage.

Impedance on the Output Side

There is a possibility that might de affected by contact resistance of resistive element and wiper in case of low impedance of output side in voltage regulation circuit. For this reason, we require that you adjust to impedance of output side more than 100 times of total resistance.

Residual Resistance

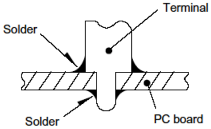
Although electric poles of resistors are generally formed by silver printing, we provide carbon coating over the silver poles to enhance reliability against sulfurization. Contact us if you wish to use the part in a low residual resistance state.

Dew Condensation

Avoid using the potentiometer where dew or water drops might occur on the surface of the resistor, etc. Deterioration of insulation or shorting may occur.

Soldering

Avoid employing wiring designs and soldering methods in which molten solder flows over the upper surface of PC board, as illustrated in the schematic drawing. This can cause occurrences of imperfect contacts.
Solder all metal inserted fixing including terminals & metal lugs into a subatate.



Stress Being Applied to the Terminals

Always pay special attention not to apply excessive stress when handling the terminals. Also, be sure to design appropriate soldering conditions.

Looseness of the Shaft

When lengthy shaft lengths are being employed, the looseness (deviation) tends to grow in proportion to the shaft length. Conducting a test under actual operating conditions is recommended.

Chassis Mounting

The use of a nut to fasten this part may lead to excessive tightening and can deteriorate the rotary contact performance, or strip the threads. Handle with care when tightening the nut.

Use of Chemicals

Since synthetic resins such as polycarbonate are being used as the material for the insulated type shafts, avoid using this part under gassy environments of such chemicals as ammonia, amines, alkali water solutions, aromatic hydrocarbons, ketones, esters and halogenated hydrocarbons, especially, under their intensive gas environments.

Operation at Low Temperature

When these products are expected to be used under low temperature environments such as applications for car radios and car stereos, we can customize them for easier and more smooth rotary movements. When placing orders, indicate whether the low temperature specification is necessary or not.

Storage

1. Store the products as delivered, at a normal temperature and humidity, without direct sunshine and corrosive gas ambient. Use them at an earliest possible timing, not later than six months upon receipt.
2. After breaking the seal, keep the products in a plastic bag to shut out ambient air, store them in the same environment as above, and use them up as soon as possible.
3. Do not stack too many switches.

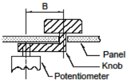
Slide Potentiometers

Lever Length

Design the height from the surface of the board up to the top of the knob as short as possible. The longer mounting height will result in worsening of the sliding feel. Verify the performance under actual operational conditions.

Driving Lever

Avoid using the lever in such a way that the point of application is far away from the center of the lever. The longer the length indicated by “B” becomes, the worse a sliding feel gets. Verify the performance under actual operational conditions.



Chassis Mounting

Products Search

Product Search

Potentiometers

Rotary Potentiometer (Knob operating type)

With Knob Type RK10J Series

Part number RK10J11R0A0L

Standard

- Basic information
- Dimensions
- Mounting Hole Dimensions
- Terminal Layout
- Circuit Diagram
- Packing Specifications
- Soldering Conditions

Number of resistor elements	Single-unit
Total resistance	10kΩ
Resistance taper	1B

NET SHOP

3D CAD

RoHS

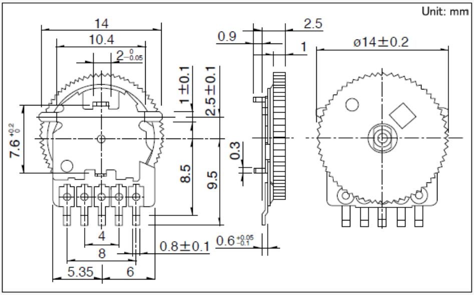
Reference Drawings

Inquiry

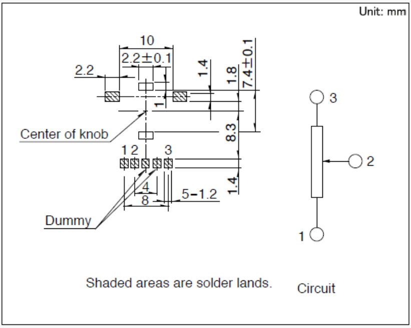
印刷

Soldering		Reflow
Knob types		Outer size: ϕ 14 Knob thickness: t1.0mm Color: Black
Mounting board types		Surface mounting
For DC use		20V DC
Dimensions		10mm size
Operating temperature range		−10℃ to +60℃
Electrical performance	Total resistance tolerance	±30%
	Rated power	0.03W
	Maximum operating voltage	50V AC, 20V DC
	Maximum attenuation	70dB min.
	Insulation resistance	100MΩ min. 100V DC
	Voltage proof	100V AC for 1 minute
Mechanical performance	Total rotational angle	270° ±10°
	Rotational torque	0.5 to 10mN·m
	Stopper strength	70mN·m
	Push-pull strength	5N
Durability	Operating life	10,000 cycles
Minimum order unit(pcs.)	Japan	3,000
	Export	3,000

Dimensions



Mounting Hole Dimensions



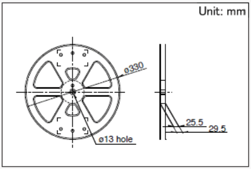
Viewed from mounting side.

Terminal Layout

Circuit Diagram

Packing Specifications

Taping



Number of packages (pcs.)	
1 reel	1,000
1 case / Japan	3,000
1 case / export packing	3,000

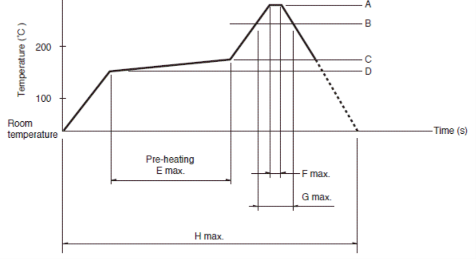
Tape width (mm)
24

Export package measurements (mm)
401×397×139

Soldering Conditions

Example of Reflow Soldering Condition

1. Heating method
   Double heating method with infrared heater.
2. Temperature measurement
   Thermocouple 0.1 to 0.2 Φ CA (K) or CC (T) at soldering portion (copper foil surface). A heat resisting tape should be used for fixed measurement.
3. Temperature profile



A	B	C	D	E	F	G	H	No. of reflows
250℃	200℃	150℃	150℃	2 min.	3s	40s	4 min.	2 time max.

1. When using an infrared reflow oven, solder may sometimes not be applied. Be sure to use a hot air reflow oven or a type that uses infrared rays in combination with hot air.
2. The temperatures given above are the maximum temperatures at the terminals of the potentiometer when employing a hot air reflow method. The temperature of the PC board and the surface temperature of the potentiometer may vary greatly depending on the PC board material, its size and thickness. Ensure that the surface temperature of the potentiometer does not rise to 250° C or greater.
3. Conditions vary to some extent depending on the type of reflow bath used. Be sure to give due consideration to this prior to use.

Reference for Hand Soldering

Tip temperature

350℃ max.

Soldering time

3s max.

No. of solders

1 time

Notes are common to this series/models

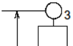
1. This site catalog shows only outline specifications. When using the products, please obtain formal specifications for supply.
2. Please place purchase orders per minimum order unit (integer).
3. Products other than those listed in above products are also available. Please contact us for details.
4. Dip soldering can be applied to RK14J. For dip soldering applications, specify separately as “dip soldering applicable product”.

Cautions

Recommended Circuit Configuration

When using variable resistors, It is recommended that you use them as voltage adjusting means, as shown in Fig. A. If the variable resistor is used as a current adjusting means as in Fig. B, it may be influenced by the contact resistance between the resistor body and the slide, depending on the set circuit. Conducting a test under actual operating conditions is highly recommended.

A.Voltage divider type



Downloaded from Arrow.com.