



0.5 W Conductive Plastic
Potentiometers
392 Series, RV6 Series



392 Series, RV6 Series 0.5 W Conductive Plastic Potentiometers

Potentiometers convert rotary motion into a change of resistance, supplying a smooth transition of voltage or current levels. The resulting voltage output may be used to control position transducers in a wide variety of potential applications.

The 392 Series and RV6 Series 0.5 W Plastic Potentiometers are economical devices designed to meet wave soldering process requirements for mounting to printed circuit boards (PCBs). All versions contain an internal shaft seal for moisture protection and comply with PCB washability test requirements and MIL-R-94 standards where appropriate. Termination types are PC pin or solder hook, both are solder-dipped.

These small, single turn devices have a 3,18 mm [0.125 in] diameter shaft that is available in a range of lengths. Most configurations have either a standard or split locking 1/4-32 NEF-2A bushing in panel seal or no panel seal versions. The shaft/bushing materials are nickel-plated brass or thermoplastic. They are available in metal/metal, plastic/plastic, or a combination of the two. Custom designs are available upon request.

The 392 Series and RV6 Series are available in resistances from 100 Ohm to 5 MOhm, inclusive. Tapers include linear, log, and antilog to meet a wide range of application requirements.

RV6 Series devices meet requirements of MIL-R-94.

Key Features and Benefits

- **Wave solderable:** Allows the devices to be automatically soldered on a PCB using the wave soldering process instead of being manually soldered, saving time and yielding consistent results
- **PCB washable:** Permits the PCB board containing the soldered devices to be washed after soldering, saving time and yielding consistent results
- **Cost-effective:** Supplies good performance at a reasonable price
- **Wide range of resistance values (100 Ohm to 5 MOhm, inclusive):** Promotes flexibility in the applications
- **Small package size:** Allows use where space constraints may be present

Potential Applications

INDUSTRIAL/COMMERCIAL

- Audio and visual equipment (i.e., guitars, sound mixers, projectors)
- Light switches
- Hand-held equipment (e.g., multimeters and mobile monitoring devices)
- Test and measurement equipment (e.g. oscilloscopes)
- Communications equipment (e.g. walkie-talkies)
- Thermostats

MEDICAL

- Hand-held equipment (e.g., mobile monitoring devices)
- Laboratory and diagnostic equipment

TRANSPORTATION

- Vehicle manual controls (e.g. joysticks)

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WAVE SOLDERABLE • WASHABLE • COST-EFFECTIVE

General Specifications

Table 1. Electrical Specifications

Characteristic	Parameter	
	392 Series	RV6 Series
Maximum working voltage	350 Vdc max.	
Dielectric strength	750 Vac for 60 s at 1 mPa [atm], 350 Vac for 60 s at 11,5 kPa [3.4 inHg]	
Power rating: solder hook	0.5 W at 70 °C [158 °F], derated to 120 °C [248 °F] 0.25 W	
Taper	linear (S), linear (special), log (Z), reverse log (RZ)	linear (S), log (Z)
CRV ¹ : linear tapers log, reverse log tapers	1.5% max. of total resistance	
Resistance: linear tapers log, reverse log tapers	100 Ohm to 5 MOhm 500 Ohm to 2 MOhm	100 Ohm to 1 MOhm 500 Ohm to 1 MOhm
Resistance tolerance: linear tapers: 100 Ohm to 1 MOhm >1 MOhm log, reverse log tapers: 500 Ohm to 250 kOhm >250 kOhm	±10% ±20% ±10% ±20%	
End resistance	4 Ohm max. at each end of rotation	
Linearity	±5% independent	
Electrical rotation: nominal effective	265° (+0°/-10°) 295° (±5°)	

¹Contact resistance variation is the maximum momentary change in contact resistance that occurs when the wiper is moved from one location to another location. The larger this change, the more difficult it is to set the trimmer potentiometer and the more unstable the long term setting will be.

General Specifications

Table 2. Mechanical Specifications

Characteristic	Parameter	
	392 Series	RV6 Series
Shaft:		
diameter		3,18 mm [0.125 in]
material:		
metal		nickel-plated brass
plastic		thermoplastic
Bushing:		
diameter/thread size		1/4-32 NEF-2A
material:		
metal		nickel-plated brass
plastic		thermoplastic
Termination base material		thermoset plastic
Termination types:		
solder hook material		brass, solder (tin-lead) dip finish
PC pin:		
PCB fit		2,54 mm [0.100 in] grid spacing, 0,86 mm [0.034 in] holes
material		brass, solder (SAC305) dip finish
Cover material		stainless steel
Housing material		thermoplastic
Base material		thermoset
Mounting hardware material:		
jam nut		nickel-plated brass
mounting nut		nickel-plated brass
lock washer		nickel-plated phospher bronze
panel O-ring		Buna-N
Sealant		epoxy
Operating torque		3,5 mN m to 14 mN m [0.5 in-oz to 2.0 in-oz]
Stop torque		34 N m [3 in-lb]
Weight (approx.):		
metal shaft and metal bushing		7,09 g [0.25 oz]
plastic shaft and plastic bushing		2,84 g [0.1 oz]

Table 3. Environmental Specifications

Characteristic	Parameter	
	392 Series	RV6 Series
Operating temperature		-55 °C to 120 °C [-67 °F to 248 °F]
Base material		-40 °C to 120 °C [-40 °F to 248 °F]
Rotational life		tested to 50,000 cycles
Soldering	—	MIL-R-94

Table 4. Maximum Percent Temporary Resistance from 25 °C [77 °F]

Nominal Resistance	Temperature						
	-55 °C [-67 °F]	-40 °C [-40 °F]	0 °C [32 °F]	25 °C [77 °F]	55 °C [131 °F]	85 °C [185 °F]	120 °C [248 °F]
100 Ohm	±5.0	±4.0	±1.5	0	±1.5	±2.0	±3.5
10 kOhm	+7.0	+5.5	+2.0	0	±1.5	±2.5	±5.5
100 kOhm	+8.0	+6.0	+2.5	0	±2.0	±3.5	±6.0
1 MOhm	+10.0	+8.0	+3.0	0	±2.5	±4.0	±7.5

General Specifications

Figure 1. Power Derating Curve

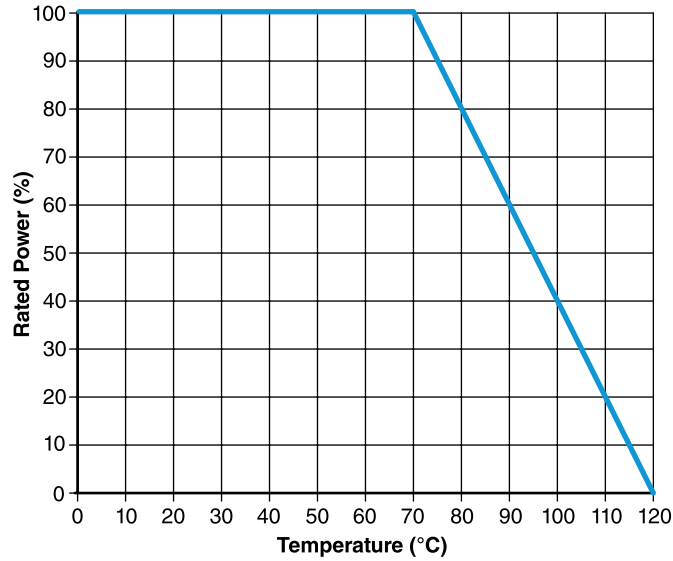
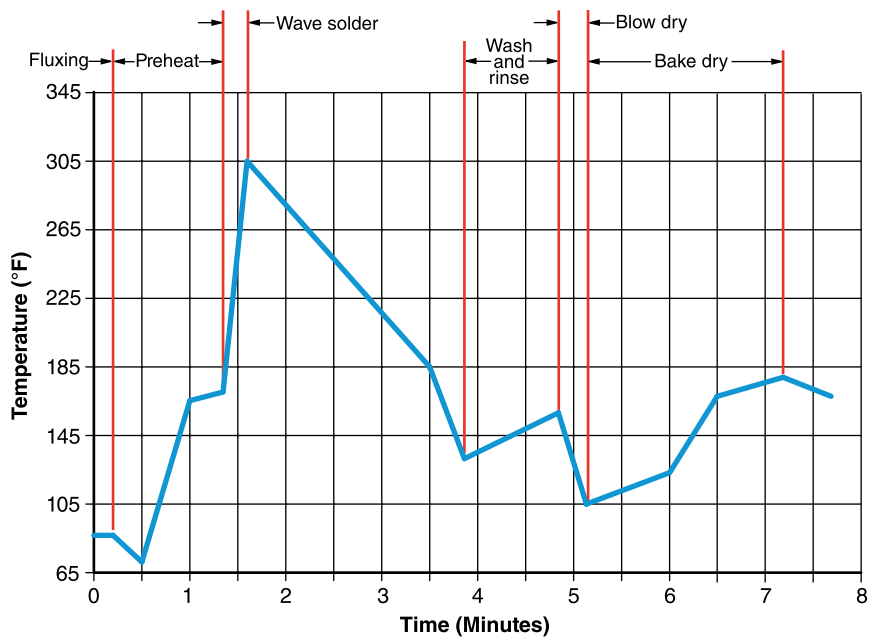


Figure 2. Recommended Wave Solder and Board Wash Parameters

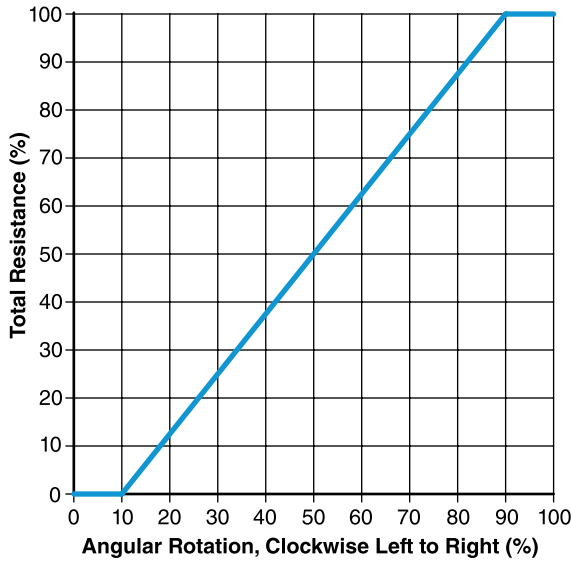


Process Limits	Temperature	Time
Preheat, max.	91 °C [195 °F]	1 min.
Solder, max.	288 °C [550 °F]	—
Differential after solder in wash (3/4T), max.	22 °C [72 °F]	—
Wash	66 °C to 71 °C [150 °F to 160 °F]	1.5 min.
Dry	47 °C to 104 °C [116 °F to 220 °F]	2 min.

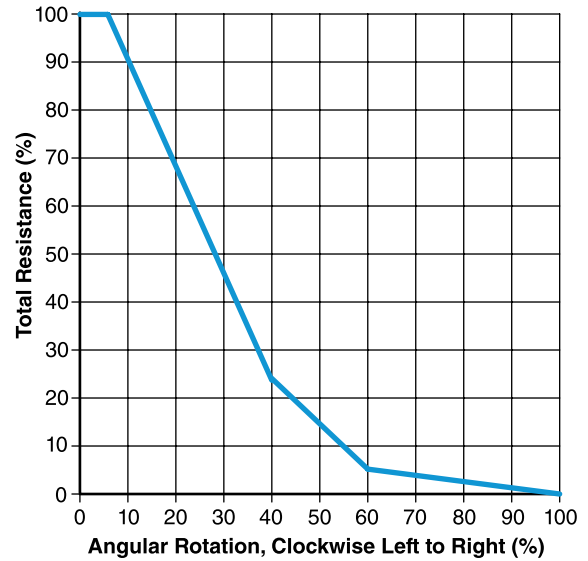
General Specifications

Figure 3. Electrical Taper Diagrams (For reference only.)

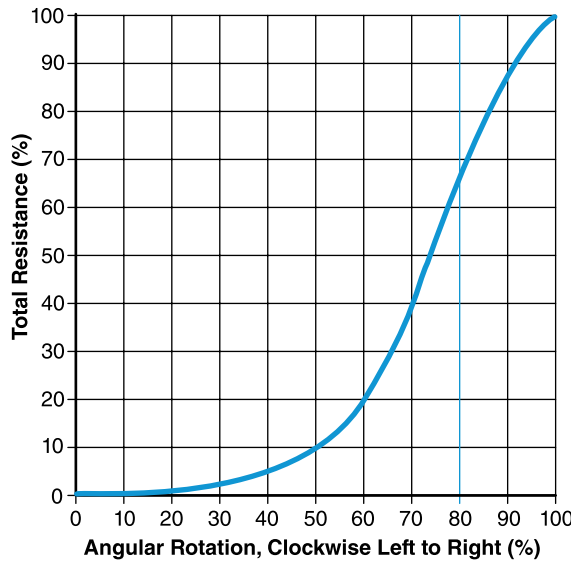
Linear (S) The change in resistance is directly proportional to the degree of rotation (right-hand or left-hand).



Linear (Special) Attains 50% resistance value at 50% of clockwise rotation (left-hand).



Log (Z) Attains 10% resistance value at 50% of clockwise rotation (left-hand).



Reverse Log (RZ) Attains 10% resistance value at 50% of clockwise rotation (right-hand).

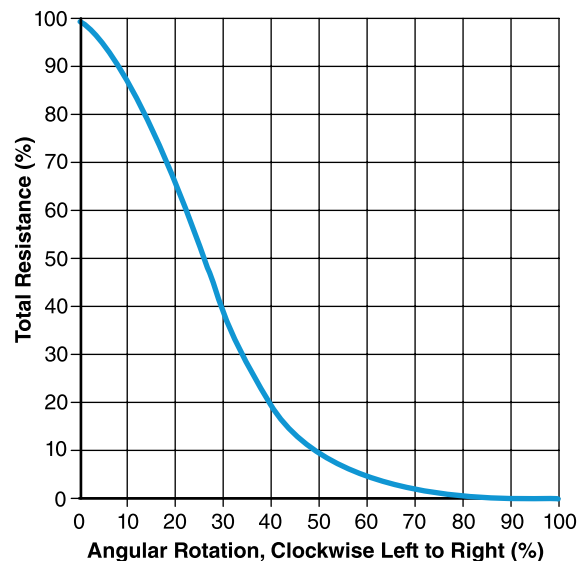
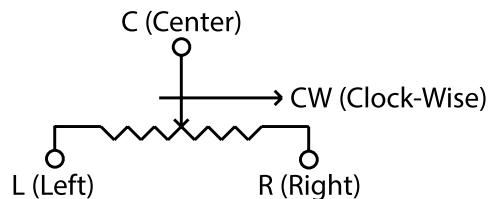






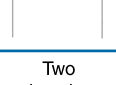

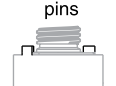







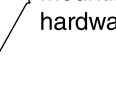

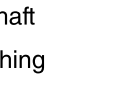









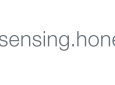
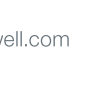
Figure 4. Functional Schematic



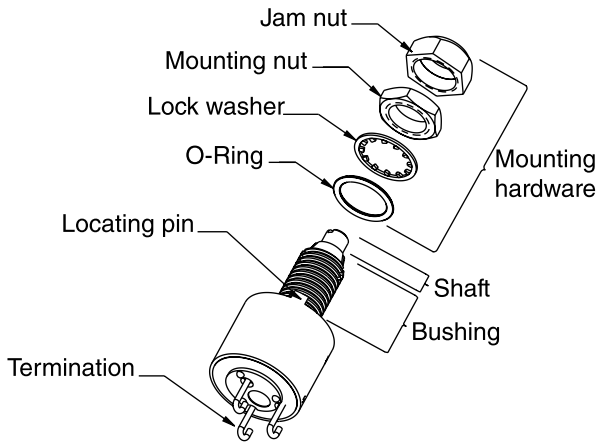
General Configuration Guide

Figure 5. General Configuration Guide

This figure shows possible 392 Series and RV6 Series configurations. Not all combinations may be available, please contact Honeywell. See the Order Guides for each series on subsequent pages for currently available catalog listings.

Product Series	Bushings Type and Length	Switch	Shaft Type	Shaft Length	Resistance		Electrical Taper and Resistance Tolerance	Anti-Rotation (AR) Locating Pin	Termination Type																								
					Significant Digit	Number of Zeros that Follow																											
392 Series, RV6 Series 0.5 W Conductive Plastic Potentiometers	Metal: 1/4-32 NEF-2A: Panel seal: Standard (6,35 mm [0.25 in])	None	Metal: Ø3,18 mm [0.125 in]: Flatted	9,53 mm [0.325] ¹	10 Ohm	0	Linear: 10% 20% Linear special Log: 10% 20% Reverse Log: 10% 20% Custom	No locating pins	Solder hook																								
	Split locking (12,7 mm [0.50 in])		Round	12,7 mm [0.50 in] ¹	15 Ohm	1																											
	No panel seal: Standard (6,25 mm [0.25 in])		Slotted	15,88 mm [0.625 in]	20 Ohm	2																											
	Split locking (12,7 mm [0.50 in])		Custom	19,05 mm [0.75 in]	25 Ohm	3																											
	Unthreaded (6,25 mm [0.25 in])		Slotted	22,23 mm [0.875 in]	50 Ohm	4																											
	Plastic: 1/4-32 NEF-2A: Standard		Custom	31,75 mm [1.25 in]	*Applies to 6,25 mm [0.25 in] bushings only.																												
	Trimmer		Slotted	50,8 mm [2.00 in]																													
	Custom		Custom	63,5 mm [2.50 in]																													
			Custom	Custom																													
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General 392 Series, RV6 Series Terminology



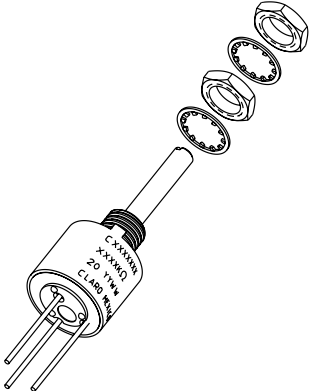
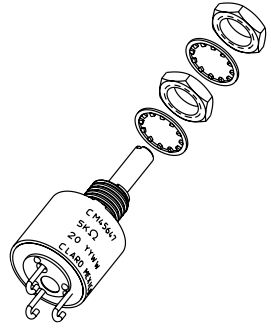
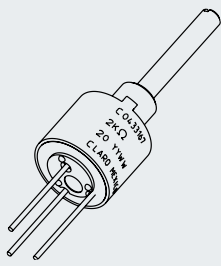
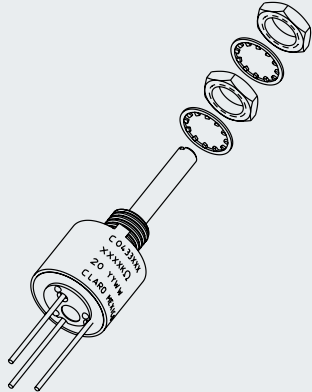
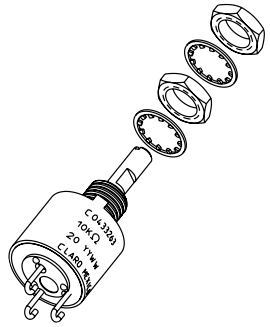
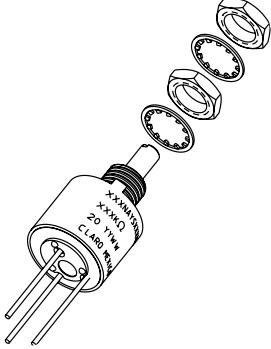
392 Series Specific Configurations

Table 5. 392 Series Metal Shaft and Metal Bushing Specific Configurations

Shaft Type	Bushing Type	AR Pin	Termination	Configuration with Associated Hardware	Shaft Type	Bushing Type	AR Pin	Termination	Configuration with Associated Hardware
392-A (See Table 392-A on p. 11.)					392-B (See Table 392-B on p. 11.)				
flatted	panel seal, standard, 6,35 mm [0.25 in]	1 and 2	solder hook		round	no panel seal, standard, 6,35 mm [0.25 in]	1 and 2	solder hook	
392-C (See Table 392-C on p. 12.)					392-D (See Table 392-D on p. 12.)				
flatted	no panel seal, split, locking, 12,7 mm [0.50 in]	1 and 2	PC pin		slotted	no panel seal, standard, 6,35 mm [0.25 in]	1	PC pin	
392-E (See Table 392-E on p. 13.)					392-F (See Table 392-F on p. 13.)				
flatted	no panel seal, standard, 6,35 mm [0.25 in]	0	PC pin		slotted	no panel seal, standard, 6,35 mm [0.25 in]	1	PC pin	
392-G (See Table 392-G on p. 14.)					392-H (See Table 392-H on p. 14.)				
flatted	no panel seal, standard, 6,35 mm [0.25 in]	1	solder hook		slotted	no panel seal, standard, 6,35 mm [0.25 in]	1	solder hook	
392-I (See Table 392-I on p. 15.)					392-J (See Table 392-J on p. 15.)				
flatted,	no panel seal, standard, 6,35 mm [0.25 in]	1 and 2	PC pin		slotted	no panel seal, standard, 6,35 mm [0.25 in]	0	solder hook	

392 Series Specific Configurations

Table 5. 392 Series Metal Shaft and Metal Bushing Specific Configurations (continued)

Shaft Type	Bushing Type	AR Pin	Termination	Configuration with Associated Hardware	Shaft Type	Bushing Type	AR Pin	Termination	Configuration with Associated Hardware
392-K (See Table 392-K on p. 16.)					392-L (See Table 392-L on p. 17.)				
slotted	no panel seal, standard, 6,35 mm [0.25 in]	1 and 2	PC pin		slotted	no panel seal, standard, 6,35 mm [0.25 in]	0	solder hook	
392-M (See Table 392-M on p. 17.)					392-N (See Table 392-N on p. 18.)				
slotted	no panel seal, un-threaded, 6,35 mm [0.25 in]	1 and 2	PC pin		slotted	no panel seal, standard, 6,35 mm [0.25 in]	1 and 2	PC pin	
392-O (See Table 392-O on p. 18.)					392-P (See Table 392-P on p. 18.)				
slotted	no panel seal, standard, 6,35 mm [0.25 in]	1 and 2	solder hook		slotted	no panel seal, standard, 6,35 mm [0.25 in]	1 and 2	PC pin	

RV6 Series Order Guides

Table RV6-F Order Guide

Catalog Listing	Electrical			Dimensions				RoHS Compliant	Mounting Hardware
	Resistance (Ohm)	Resistance Tolerance (±%)	Taper	A Slot Depth (mm [in])	B Slot Width (mm [in])	C Shaft Length (mm [in])	D Bushing Length (mm [in])		
RV6NAYSA103A	10 k	10	S	0,79 [0.031]	0,79 [0.031]	15,88 [0.625]	6,25 [0.250]	no	unassembled
RV6NAYSA502A	5 k	10	S	0,79 [0.031]	0,79 [0.031]	15,88 [0.625]	6,25 [0.250]	no	unassembled
RV6NAYSA503A	50 k	10	S	0,79 [0.031]	0,79 [0.031]	15,88 [0.625]	6,25 [0.250]	no	unassembled
RV6NAYSB101A	100	10	S	0,79 [0.031]	0,79 [0.031]	12,70 [0.500]	6,25 [0.250]	no	unassembled
RV6NAYSB103A	10 k	10	S	0,79 [0.031]	0,79 [0.031]	12,70 [0.500]	6,25 [0.250]	no	unassembled
RV6NAYSB502A	5 k	10	S	0,79 [0.031]	0,79 [0.031]	12,70 [0.500]	6,25 [0.250]	no	unassembled
RV6NAYSD101A	100	10	S	0,79 [0.031]	0,79 [0.031]	12,70 [0.500]	6,25 [0.250]	no	assembled
RV6NAYSD102A	1 k	10	S	0,79 [0.031]	0,79 [0.031]	22,23 [0.875]	6,25 [0.250]	no	assembled
RV6NAYSD103A	10 k	10	S	0,79 [0.031]	0,79 [0.031]	22,23 [0.875]	6,25 [0.250]	no	assembled
RV6NAYSD104A	100 k	10	S	0,79 [0.031]	0,79 [0.031]	22,23 [0.875]	6,25 [0.250]	no	assembled
RV6NAYSD105A	1 M	10	S	0,79 [0.031]	0,79 [0.031]	22,23 [0.875]	6,25 [0.250]	no	assembled
RV6NAYSD251A	250	10	S	0,79 [0.031]	0,79 [0.031]	22,23 [0.875]	6,25 [0.250]	no	assembled
RV6NAYSD252A	2.5 k	10	S	0,79 [0.031]	0,79 [0.031]	22,23 [0.875]	6,25 [0.250]	no	assembled
RV6NAYSD253A	25 k	10	S	0,79 [0.031]	0,79 [0.031]	22,23 [0.875]	6,25 [0.250]	no	assembled
RV6NAYSD253A	25 k	10	S	0,79 [0.031]	0,79 [0.031]	22,23 [0.875]	6,25 [0.250]	no	assembled
RV6NAYSD253A	250 k	10	S	0,79 [0.031]	0,79 [0.031]	22,23 [0.875]	6,25 [0.250]	no	assembled
RV6NAYSD501A	500	10	S	0,79 [0.031]	0,79 [0.031]	22,23 [0.875]	6,25 [0.250]	no	assembled
RV6NAYSD502A	5 k	10	S	0,79 [0.031]	0,79 [0.031]	22,23 [0.875]	6,25 [0.250]	no	assembled
RV6NAYSD502B	5 k	10	S	0,79 [0.031]	0,79 [0.031]	22,23 [0.875]	6,25 [0.250]	no	unassembled
RV6NAYSD503A	50 k	10	S	0,79 [0.031]	0,79 [0.031]	22,23 [0.875]	6,25 [0.250]	no	assembled
RV6NAYSD504A	500 k	10	S	0,79 [0.031]	0,79 [0.031]	22,23 [0.875]	6,25 [0.250]	no	assembled

(Continued on next page.)