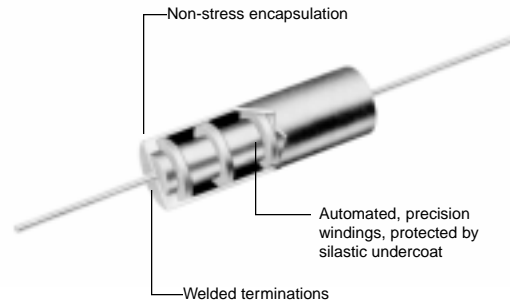


# AXIAL LEAD PRECISION WIREWOUND RESISTORS

ISO-9001  
Registered



## HR, VA, SP, 7000, 8000 SERIES MIL-R-93 (RB) & MIL-R-39005 (RBR) & COMMERCIAL STYLES



- 0.1 ohm to 12 meg ohms
- 0.1 to 1.0 watts
- Tolerance to  $\pm 0.01\%$
- Approved to M, P, & R levels
- TC's from  $\pm 2$  ppm/ $^{\circ}\text{C}$  to  $+6000$  ppm/ $^{\circ}\text{C}$
- Meets or exceeds all applicable MIL-R-93 & MIL -R-39005 ratings

These ultra precision resistors are designed and produced for critical parameter applications. They are available for established reliability military and/or commercial applications requiring state of the art precision and stability.

terminations are welded to reduce contact noise and thermal EMF. Extensive accelerated aging programs both before and after calibration assure precise initial accuracy and high resistance stability.

Construction features may vary slightly between commercial and military styles, but both are produced under the same rigid quality control system required by the tightest military specifications. Both are produced in the same production line using the same highly trained operators required to produce the established reliability product.

Encapsulation is accomplished by transfer molding with special moisture resistant epoxy or by unique dry air chamber epoxy shell technique for established reliability parts. A resilient inner coating is used to minimize internal stresses on all parts.

Whether military or commercial, all resistors are carefully monitored during assembly, winding, coating, and stabilization procedures to assure high quality standards even when their prescribed parameters are non critical. Premium grade selected wire is control stress wound on special designed bobbins. All

The established reliability military parts are burned in 100 hours at  $125^{\circ}\text{C}$  ambient as part of group A acceptance testing. Documentation and special test are available upon customer request to meet your unique requirements.

### MIL-R-39005 SPECIFICATIONS:

Temperature Range	Standard Temperature Coefficient
-65 $^{\circ}\text{C}$ to +145 $^{\circ}\text{C}$	$\pm 10$ ppm/ $^{\circ}\text{C}$ 100 $\Omega$ up
	$\pm 15$ ppm/ $^{\circ}\text{C}$ 10 $\Omega$ to 100 $\Omega$
	$\pm 30$ ppm/ $^{\circ}\text{C}$ 1 $\Omega$ to 10 $\Omega$
	$\pm 90$ ppm/ $^{\circ}\text{C}$ below 1 $\Omega$
	Special Temperature Coefficients Available

### WIREWOUND AND FILM TECHNOLOGIES DIVISION

**HR, VA, SP, 7000, 8000 SERIES SPECIFICATIONS:**

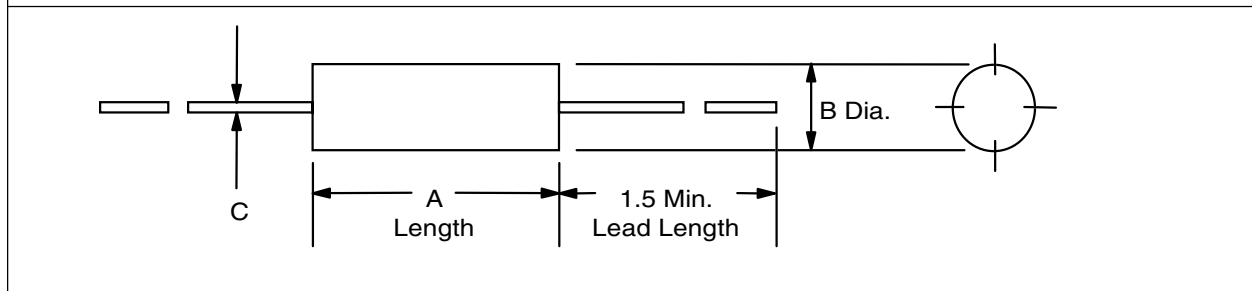
IRC/ Shallcross Style	MIL-R-93 / 39005 Style	Wattage		Resistance (ohms)			Max. Working Volt (Comm)	Dimensions		
		MIL	Comm	Mil		Max		±0.032A	±0.015B	±0.002C
		125°C	85°C	Min	Max			Max	Inches (mm)	Inches (mm)
<b>7009/VA10</b>	RB56	0.125	0.250	0.1	127K	1.4M	200	0.343 (8.7)	0.250 (6.3)	0.032 (0.8)
<b>HR10</b>	RBR56	0.125	0.250	0.1	220K	840K	200	0.343 (8.7)	0.250 (6.3)	0.032 (0.8)
<b>7010/VA12</b>	RB55	0.15	0.33	0.1	176K	3M	300	0.500 (12.7)	0.250 (6.3)	0.032 (0.8)
<b>HR12</b>	RBR55	0.15	0.30	0.1	332K	1M	300	0.500 (12.7)	0.250 (6.3)	0.032 (0.8)
<b>7020/VA14</b>	RB54	0.25	0.50	0.1	226K	4.4M	300	0.750 (19.0)	0.250 (6.3)	0.032 (0.8)
<b>HR14</b>	RBR54	0.25	0.50	0.1	526K	2M	300	0.750 (19.0)	0.250 (6.3)	0.032 (0.8)
<b>7030/VA34</b>	RB53	0.33	0.66	0.1	604K	8M	500	0.750 (19.0)	0.375 (9.5)	0.032 (0.8)
<b>HR34</b>	RBR53	0.33	0.66	0.1	1.1M	3M	500	0.750 (19.0)	0.375 (9.5)	0.032 (0.8)
<b>7040/VA36</b>	RB52	0.50	1.00	0.1	1M	12M	750	1.00 (25.4)	0.375 (9.5)	0.032 (0.8)
<b>HR36</b>	RBR52	0.50	1.00	0.1	1.2M	3M	750	1.00 (25.4)	0.375 (9.5)	0.032 (0.8)

**SUBMINIATURES**

<b>7004</b>	---	---	0.05	---	---	250K	150	0.30(7.6)	0.10 (2.5)	0.020 (0.5)
<b>7005/SP41</b>	---	---	0.10	---	---	300K	150	0.25 (6.3)	0.125 (3.2)	0.025 (0.6)
<b>7006</b>	---	---	0.10	---	---	350K	200	0.31 (7.9)	0.125 (3.2)	0.025 (0.6)
<b>7007/SP21</b>	---	---	0.250	---	---	700K	300	0.375 (9.5)	0.188 (4.8)	0.025 (0.6)
<b>SP42</b>	---	---	0.125	---	---	200K	200	0.375 (9.5)	0.125 (3.2)	0.025 (0.6)

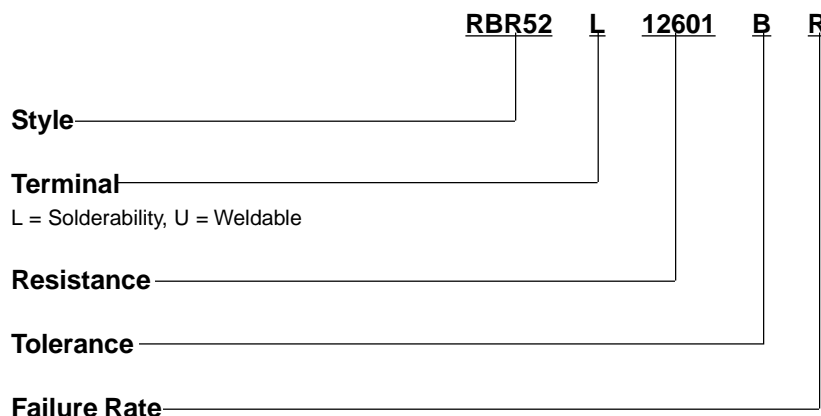
\*For all styles commercial ratings may be applied at 125°C provided 175°C max. operating temperature is permissible.  
NOTE: Contact factory for availability of other styles and sizes of above product.

\*\*Customer must specify TCR required.



**HOW TO ORDER**

Sample Part No.:



For commercial equivalents:

Style - Resistance - Tolerance - TCR