Axial Lead Precision Wirewound Resistors

RB / RBR, VA / HR, SP / 7000 Series

- **0.1 to 1.0 watts**
- **Tolerance to ±.01%**
- **0.1 ohm to 12 megohms**
- **Approved to M, P, & R levels**
- **TCR's from ±2 ppm/°C to +6000 ppm/°C**
- **Meets or exceeds all applicable MIL-R-93 & MIL-R-39005 ratings**

The RB/RBR 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.

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.

All 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.

Encapsulation is accomplished by a unique dry air chamber epoxy shell technique for established reliability parts. A resilient inner coating is used to minimize internal stresses on all parts.

All resistors (military and commercial) are carefully monitored during assembly, winding, coating, and stabilization procedures to assure high quality standards. Premium grade selected wire is control- stress wound on special designed bobbins. Established reliability military parts are then burned in for 100 hours at 125°C ambient as part MIL-R-93, or equivalent, of group A acceptance testing. Documentation and special tests are available upon customer request to meet your unique requirements.

TCR and Temperature Data

Style	Resistance Range (Ω)	Absolute TCR (ppm/°C)	Operating Temperature Range (°C)
All Styles	0.1 - 0.9	±90	-65 to +145
	1.0 - 9.9	±30	
	10 - 99.9	±15	
	100 - 12M	±10	

Special Screening / Acceptance Test:

Special tests can be performed on a 100% or sample basis, to meet individual customer requirements. Some of the available non-destructive tests include:

- Short Time Overload
- Thermal Shock
- Mechanical Shock
- Vibration
- Temperature Coefficient of Resistance
- Radiographic Inspection

Each of these tests is designed to detect a spectrum of potential resistor defects. Consult the factory for recommendations and a quotation on special screening or acceptance tests to meet your needs.

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www.bitechnologies.com   www.irctt.com   www.welwyn-tt.com

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Electrical Data

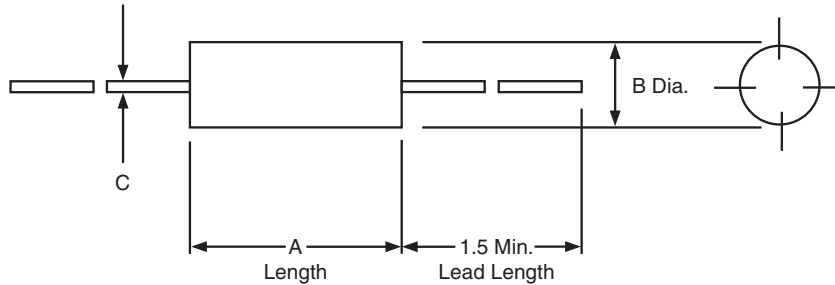|	Style	IRC Style	Shallcross Style	Wattage		Resistance (ohms)			Max. Working Voltage (Comm.)
				Mil	Comm	Mil		Comm	
				125°C	85°C	Min	Max	Max	
MIL-R-93	RB52	7040	VA36	0.50	1.00	0.1	1M	12M	750
	RB53	7030	VA34	0.33	0.66	0.1	604K	8M	500
	RB54	7020	VA14	0.25	0.50	0.1	226K	4.4M	300
	RB55	7010	VA12	0.15	0.33	0.1	176K	3M	300
	RB56	7009	VA10	0.125	0.250	0.1	127K	1.4M	200
MIL-R-39005	RBR52	HR36	---	0.50	1.00	0.1	1.2M	3M	750
	RBR53	HR34	---	0.33	0.66	0.1	1.1M	3M	500
	RBR54	HR14	---	0.25	0.50	0.1	526K	2M	300
	RBR55	HR12	---	0.15	0.30	0.1	332K	1M	300
	RBR56	HR10	---	0.125	0.250	0.1	220K	840K	200
SUBMINIATURES	---	7004	---	---	0.05	---	---	250K	150
	---	7005	SP41	---	0.10	---	---	300K	150
	---	7006	---	---	0.10	---	---	350K	200
	---	7007	SP21	---	0.250	---	---	700K	300
	---	---	SP42	---	0.125	---	---	200K	200

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

**Customer must specify TCR required.

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Physical Data

	Style	IRC Style	Shallcross Style	A	B	C
MIL-R-93	**RB52**	7040	VA36	1.00 ± 0.032 (25.4 ±)	0.375 ± 0.015 (9.5 ±)	0.032 ± 0.002 (0.8 ±)
	RB53	7030	VA34	0.750 ± 0.032 (19.0 ±)	0.375 ± 0.015 (9.5 ±)	0.032 ± 0.002 (0.8 ±)
	RB54	7020	VA14	0.750 ± 0.032 (19.0 ±)	0.250 ± 0.015 (6.3 ±)	0.032 ± 0.002 (0.8 ±)
	RB55	7010	VA12	0.500 ± 0.032 (12.7 ±)	0.250 ± 0.015 (6.3 ±)	0.032 ± 0.002 (0.8 ±)
	RB56	7009	VA10	0.343 ± 0.032 (8.7 ±)	0.250 ± 0.015 (6.3 ±)	0.032 ± 0.002 (0.8 ±)
MIL-R-39005	**RBR52**	HR36	---	1.00 ± 0.032 (25.4 ±)	0.375 ± 0.015 (9.5 ±)	0.032 ± 0.002 (0.8 ±)
	RBR53	HR34	---	0.750 ± 0.032 (19.0 ±)	0.375 ± 0.015 (9.5 ±)	0.032 ± 0.002 (0.8 ±)
	RBR54	HR14	---	0.750 ± 0.032 (19.0 ±)	0.250 ± 0.015 (6.3 ±)	0.032 ± 0.002 (0.8 ±)
	RBR55	HR12	---	0.500 ± 0.032 (12.7 ±)	0.250 ± 0.015 (6.3 ±)	0.032 ± 0.002 (0.8 ±)
	RBR56	HR10	---	0.343 ± 0.032 (8.7 ±)	0.250 ± 0.015 (6.3 ±)	0.032 ± 0.002 (0.8 ±)
SUBMINIATURES	---	7004	---	0.30 ± 0.032 (7.6 ±)	0.10 ± 0.015 (2.5 ±)	0.020 ± 0.002 (0.5 ±)
	---	7005	SP41	0.25 ± 0.032 (6.3 ±)	0.125 ± 0.015 (3.2 ±)	0.025 ± 0.002 (0.6 ±)
	---	7006	---	0.31 ± 0.032 (7.9 ±)	0.125 ± 0.015 (3.2 ±)	0.025 ± 0.002 (0.6 ±)
	---	7007	SP21	0.375 ± 0.032 (9.5 ±)	0.188 ± 0.015 (4.8 ±)	0.025 ± 0.002 (0.6 ±)
	---	---	SP42	0.375 ± 0.032 (9.5 ±)	0.125 ± 0.015 (3.2 ±)	0.025 ± 0.002 (0.6 ±)

Dimensions (Inches (mm))

Ordering Data

RBR Product Description

Sample Part No. · · · · · · · · · · · · · · · RBR52 L 12601 B R

Style ·

Terminal ·
L = Solderability, U = Weldable

Resistance · · · · · · · · · · · · · · · · · · ·
Example: 12,600 ohms = 12601

Tolerance ·
T = 0.01%, Q = 0.02%, A = 0.05%, B = 0.1%, C = 0.25%, D = 0.5%

Failure Rate ·

RB Product Description

Sample Part No. · · · · · · · · · · · · · · RB52 C E 12601 B

Style ·

Terminal ·
C = Solderable, W = Weldable

TCR Code · · · · · · · · · · · · · · · · · · ·
E = Standard

Resistance · · · · · · · · · · · · · · · · · · ·
Example: 12,600 ohms = 12601

Tolerance ·
T = 0.01%, Q = 0.02%, A = 0.05%, B = 0.1%, C = 0.25%, D = 0.5%

Commercial Product Description
(VA / HR, SP / 7000)

Sample Part No. · · · · · · · · · · · · · · VA10 2 24000 1 LF

Style ·

TCR (ppm) · · · · · · · · · · · · · · · · · · ·
Omit if Standard

Resistance · · · · · · · · · · · · · · · · · · ·
2.4 kohm (2400 ohm)

Tolerance ·
T = 0.01%, Q = 0.02%, A = 0.05%, B = 0.1%, C = 0.25%, D = 0.5%

RoHS Indictator · · · · · · · · · · · · · · ·
LF = Indicates RoHS compliance

General Note