

# PRECISION POWER WIREWOUND RESISTORS SILICONE COATED 1/2 WATT TO 50 WATT 100 SERIES

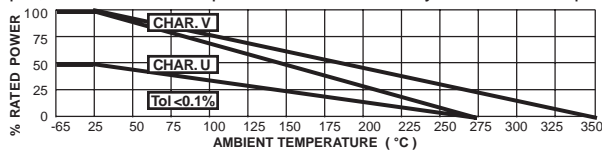


- World's widest range of axial lead WW resistors! 0.005Ω to 2MΩ, tolerances to ±0.005%, 1/2W to 50W, numerous design options
- Low cost! Available on exclusive **SWIFT™** delivery program

### OPTIONS

- Option X: Low Inductance
- Option P: Increased Pulse Capability
- Option F: Flameproof Coating
- Option ER: 100-Hour Burn-In
- Option B: Increased Power
- Radial leads (opt.R), low thermal emf (opt.E), matched sets, special marking, cut & formed leads, hi-rel screening, non-standard values, high voltage, etc. Customized components are RCD's speciality!

**DERATING** (derate W/V/A ratings when ambient temp. exceeds 25°C): Char. U is the max. power for ±0.5% typ. load life stability & 275°C hotspot, Char. V is max. power for ±3% stability & 350°C hotspot

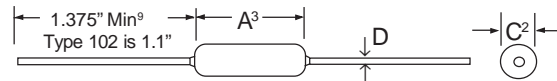


Series 100 resistors offer exceptional performance at an economical cost. Superior stability results from welded construction and windings of premium grade resistance wire on thermally conductive ceramic cores. Hi-temp coating provides excellent environmental protection and solvent resistance. Tin (or SnPb) coated copper or copperweld leads offer excellent solderability and extended shelf life.

**PULSE CAPABILITY:** Excellent pulse capability results from wirewound construction. The pulse/overload capability can often be economically enhanced by a factor of 50% or more via special Option P processing. Pulse capability is highly dependent on size and resistance value, consult factory (available up to 500 joules).

**INDUCTANCE:** small sizes have inductance of 1- 50uH typ. Larger sizes and higher values typically have greater levels. For non-inductive design, specify Opt. X. The max. series inductance for Opt.X resistors at 0.5MHz is listed in table (per MIL-R-39007). Specialty constructions are available for even lower inductance levels (Opt.75 inductance = 50% of Opt.X, Opt.76 = 33% of Opt.X).

RCD Type	≤ 50Ω	> 50Ω
102X-140X	0.2μH	0.37μH
145X-160X	0.3μH	0.6μH
165X-178X	0.65μH	1.2μH



RCD Type	MIL Type <sup>5</sup>	Std. Wattage Ratings		Opt.B Wattage Ratings		Resistance Range <sup>6,7</sup>	Maximum Voltage Rating <sup>1,6</sup>	DIMENSIONS [Numbers in brackets are mm]					
		Char.U	Char.V	Char.U	Char.V			A <sup>3</sup>		C <sup>2</sup>		D <sup>8</sup> ± .003 [.08]	
								± .062 [1.58]	± .032 [.81]	Std.	Optional		
102	-	0.5	0.8	0.8	1.0	.01Ω - 2K	30V	.16 ±.03 [4.±8]	.07±.02[1.8±5]	.020	-		
110	RW81 (110B)	0.8	1.0	1.5	2.0	.01Ω - 8K	40V	.24 ±.03 [6.±8]	.085 [2.16]	.020	.024 (opt. 22)		
115	-	1.0	1.2	1.5	2.0	.01Ω - 12K	45V	.312 [7.92]	.085 [2.16]	.020	.024 (opt. 22)		
120	-	1.0	1.2	-	-	.01Ω - 15K	50V	.344 [8.74]	.093 [2.36]	.020	.024 (opt. 22)		
Stock	125	RW70 (125B RW80)	1.5	1.8	2.0	2.5	.01Ω - 20K	55V	.406 [10.3]	.093 [2.36]	.020	.024 (opt. 22)	
130	-	1.6	2.0	-	-	.01Ω - 22K	65V	.530 [13.5]	.093 [2.36]	.020	.024 (opt. 22)		
Stock	133	-	2.0	3.0	3.0	4.0	.005Ω - 20K	80V	.355 [9.00]	.156 [3.96]	.032	.024 (opt. 22)	
Stock	135	RW69	3.0	4.0	4.0	5.0	.005Ω - 40K	140V	.500 [12.7]	.188 [4.78]	.032	.024(22), .040(18)	
140	RW79	3.0	4.0	4.0	5.0	.005Ω - 50K	140V	.550 [14.2]	.188 [4.78]	.032	.040 (opt. 18)		
145	-	3.5	4.5	4.5	6.5	.005Ω - 60K	180V	.770 [19.6]	.188 [4.78]	.032	.040 (opt. 18)		
150	-	3.5	4.5	5.0	7.0	.005Ω - 60K	150V	.500 [12.7]	.225 [5.72]	.040	.032 (opt. 20)		
155	-	4.0	5.0	6.0	8.0	.005Ω - 100K	210V	.625 [15.9]	.225 [5.72]	.040	.032 (opt. 20)		
Stock	156	-	5.0	6.0	-	-	.005Ω - 150K	300V	.800 [20.3]	.250 [6.35]	.040	.032 (opt. 20)	
Stock	160	RW74	5.0	7.0	7.0	10	.005Ω - 200K	400V	.875 [22.2]	.312 [7.92]	.040	.032 (opt. 20)	
165	RW67	6.0	7.5	-	-	.005Ω - 220K	450V	1.000 [25.4]	.312 [7.92]	.040	.032 (opt. 20)		
170	-	7.0	9.0	10	12	.005Ω - 300K	550V	1.200 [30.9]	.312 [7.92]	.040	.032 (opt. 20)		
171	-	7.0	8.5	-	-	.005Ω - 250K	700V	1.660 [42.2]	.208 [5.28]	.032	.040 (opt. 18)		
172	-	8.5	10	-	-	.005Ω - 400K	900V	2.100 [53.3]	.225 [5.72]	.032	.040 (opt. 18)		
Stock	173	-	9.0	11	12	14	.005Ω - 400K	650V	1.550 [39.4]	.300 [7.62]	.040	.032 (opt. 20)	
Stock	175 <sup>4</sup>	RW68, 78	10	13	15	18	.005Ω - 500K	900V	1.720 <sup>4</sup> [43.7]	.350 <sup>4</sup> [8.89]	.040	.032 (opt. 20)	
176	-	10	12	-	-	.005Ω - 500K	800V	1.875 [47.6]	.300 [7.62]	.040	.032 (opt. 20)		
178	-	13	15	-	-	.01Ω - 750K	1150V	2.410 [61.2]	.350 [8.89]	.040	.032 (opt. 20)		
180	RW56	14	16	16	20	.01Ω - 800K	1000V	2.100 [53.3]	.500 [12.7]	.040	-		
185	-	20	25	-	-	.015Ω - 1M	1350V	2.800 [71.1]	.500 [12.7]	.040	-		
186	-	25	30	-	-	.010Ω - 1M	1400V	4.060 [103]	.350 [8.89]	.040	.032 (opt. 20)		
190	-	40	50	-	-	.025Ω - 2M	1500V	5.000 [127]	.500 [12.7]	.040	-		

<sup>1</sup>Working voltage= (PR)<sup>1/2</sup>, not to exceed max rating (multiply by 0.7 for Opt.X). <sup>2</sup>Allow .032" additional for Opt X or values <1Ω. <sup>3</sup>Coating overflow onto each lead ≤2xD. <sup>4</sup>Until existing inventory is depleted, type 175 may be .397" [10mm] dia.x 1.81 [46] long with 1.31[33] lead length. <sup>5</sup>Military p/ns are given for reference only and do not imply qualification or exact interchangeability. <sup>6</sup>Increased range avail. <sup>7</sup>Resis. value measured at 3/8" ±1/16" from each end of body. <sup>8</sup>Heavier lead gauge option is recommended on low values to enable lower leadwire resis., increased current, and improved TC. <sup>9</sup>Lead length applies to bulk packaged units (taped parts may be shorter, refer to taping spec.). <sup>10</sup>Dependent on value, options, etc

### TYPICAL PERFORMANCE<sup>10</sup>

Load Life (Char.U)	±0.5% (±1% on sizes >10W)
Thermal Shock	±0.2%
Moisture Resistance	±0.2%
Shock and Vibration	±0.1%
Overload, 5 Sec	5x rated W 102-156, 10x W 160-190
Dielectric Strength	500V (for 1KV specify opt.33)
Max. Current (not to exceed wattage or voltage rating)	Resistors with .020" dia leads = 11A, .024" = 15A, .032" = 22A, .040" = 30A
TC (ppm/°C) ≥10Ω	20ppm (5 & 10ppm avail.)
1Ω - 9.9Ω	50ppm (10, 20, 30ppm avail.)
0.1Ω - .99Ω	90ppm (20, 30, 50 ppm avail.)
.05Ω - .099Ω	300ppm (50, 100, 200ppm avail.)
.01Ω - .049Ω	600ppm (100, 200, 300ppm avail.)

### P/N DESIGNATION:

**RCD Type** 135 - 102 - J B W

**Options:** X, R, V, P, F, ER, E, B, 76, 75, 22, 20, 18 (leave blank if standard)

**Resis. Code 1% & tighter tols:** 3 signif. digits & multiplier, e.g. R100= 0.1Ω, 1R00= 1Ω, 1000= 100Ω, 1001= 1KΩ.

**2%-10%:** 2digits & multiplier (R10= .1Ω, 1R0=1Ω, 100=10Ω, 102=1K).

Use extra digits as needed: R005, R0075, R012, etc.

**Tolerance:** K=10%, J=5%, H=3%, G=2%, F=1%, D=0.5%, C=0.25%, B=0.1%, A=0.05%, Q=0.02%, T=0.01%, V=.005%

**Packaging:** B= Bulk, T= T&R (avail. on type 102 to 176)

**Optional TC:** 5= 5ppm, 10= 10ppm, 20= 20ppm, 30= 30ppm, 50= 50ppm, 101= 100ppm, 201=200ppm (leave blank if std)

**Termination:** W= Lead-free, Q= Tin/Lead (leave blank if either is acceptable)