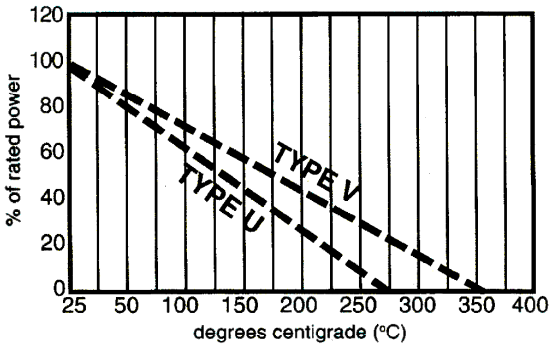
Precision Power Resistors

Power Rating

RGA Power Wirewound Resistors fall into at least one of two power rating specifications, depending on size, tolerance, and stability requirements. The resistor will perform to these specifications if operated at or below its rated power (derated for temperature and proximity if necessary).

RP, RB, RA Series All Tolerances	Max hot spot temperature of 275ºC .5% max change in resistance over 1500 hour load life	**Type U**
3% and 5% tolerances for: RP2 and larger RB5 and larger	Max hot spot temperature of 350ºC 3% max change in resistance over 1500 hour load life	**Type V**
Terminal Pull Strength	For Resistor Diameters <0.175: 5 pounds min. For Resistor Diameters > 0.176: 10 pounds min.	



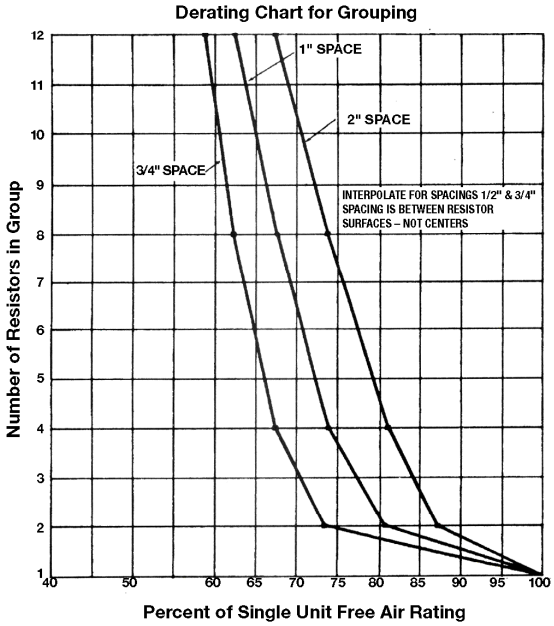
Derating

RGA Power Wirewound Resistors have an operating temperature range of -55ºC to 275ºC (350ºC in many cases). However, operation at high ambient temperatures requires power derating according to the curves at left. Derating is necessary to insure that the resistor will perform according to specification.

Placing resistors in close proximity to each other limits their ability to dissipate heat. In general, decrease the rated operating level by 20% for two components operating near each other and then a further 2% reduction for each additional component in the group.

Resistors placed into an enclosed environment need to be derated due to the limited air flow. This reduction ranges from 15% for a mesh enclosure to 100% for a fully enclosed operating environment.

Derating factors are additive and include other design considerations (such as high altitude or circulating air). Our engineers will be glad to assist in determining your requirements.



RP Series

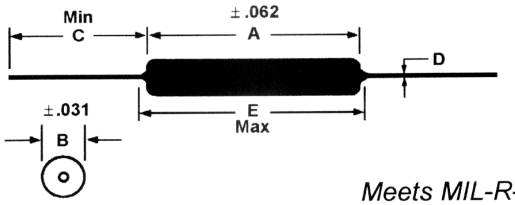
Features:

Welded construction throughout.
High Temperature silicon coating–solvent resistant.
Non-inductive (Aryton-Perry) winding available.
Wide selection of standard sizes.
Tolerance to ±.01% available.
Meets applicable requirements of MIL-R-26E.
(However, this does not imply qualification)

Available SPECIAL Features:

Specific matching of parts (by temperature coefficient or tolerance).
Special temperature coefficients.
Variable lead size (length and diameter).
Special marking.
Special lead or terminal configurations, materials.
Many non-standard sizes.

General Electrical Specifications		
Tolerance	*Std: ±5%, ±1%* *Avail: to ± .05%*	
Dielectric Strength	*RP1A and smaller:* *RP1B and larger:*	*500 VAC* *1000VAC*
TCR	*10+ ohms:* *1 - 10 ohms:* *<1 ohm:*	*±20ppm/°C* *±50ppm/°C* *±90ppm/°C*



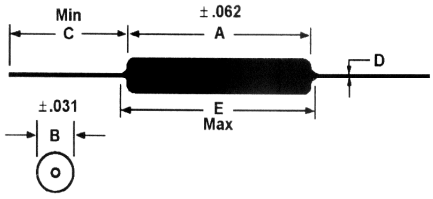
Meets MIL-R-26E

RGA P/N	Dimensions (in inches)					Mil Style	Power Rating		Min Ω	Std Range	Max Ω
	A	B	C	D	E		Type U	Type V			
RP1/4W	.230	.094	1.500	.020	.330		.25 W	N/A	.05 Ω	.1 Ω to 2.5K Ω	4.0K Ω
RP1/2A	.275	.094	1.500	.020	.375		.50 W	N/A	.05 Ω	.1 Ω to 4K Ω	6.5K Ω
RP1/2	.344	.094	1.500	.020	.450		.75 W	N/A	.05 Ω	.1 Ω to 6K Ω	10.5K Ω
RP1	.406	.094	1.500	.020	.500	RW70	1.0 W	N/A	.05 Ω	.1 Ω to 7.5K Ω	13.5K Ω
RP1A	.562	.094	1.500	.020	.650		1.2 W	N/A	.05 Ω	.1 Ω to 12K Ω	20K Ω
RP1B	.562	.125	1.500	.032	.650		2.0 W	2.75 W	.06 Ω	.1 Ω to 13.5K Ω	25K Ω
RP2	.500	.167	1.500	.032	.600		2.25 W	3.0 W	.01 Ω	.1 Ω to 15.7K Ω	28K Ω
RP2A	.500	.218	1.500	.032	.600	RW69	2.5 W	3.25 W	.01 Ω	.1 Ω to 23.6K Ω	43K Ω
RP2B	.375	.167	1.500	.032	.475		1.5 W	2.25 W	.01 Ω	.1 Ω to 10.5K Ω	19K Ω
RP2C	.625	.218	1.500	.032	.725		3.5 W	4.25 W	.01 Ω	.1 Ω to 35.4K Ω	64K Ω
RP3	.562	.167	1.500	.032	.650	RW79	3.0 W	3.75 W	.01 Ω	.1 Ω to 18.5K Ω	33K Ω
RP3B	.780	.167	1.500	.032	.875		3.5 W	4.25 W	.01 Ω	.1 Ω to 33K Ω	60K Ω
RP4	.812	.218	1.500	.032	.900		4.0 W	5.0 W	.02 Ω	.1 Ω to 48K Ω	89K Ω
RP4B	.875	.312	1.500	.040	.975	RW74	5.0 W	6.5 W	.02 Ω	.1 Ω to 71K Ω	129K Ω
RP5	1.032	.312	1.500	.040	1.125	RW67	5.5 W	7.0 W	.02 Ω	.1 Ω to 92K Ω	168K Ω
RP7	1.188	.312	1.500	.040	1.280		7.0 W	9.0 W	.02 Ω	.1 Ω to 108K Ω	197K Ω
RP10	1.760	.344	1.500	.036	1.844	RW78	10.0 W	12.0 W	.04 Ω	.1 Ω to 203K Ω	370K Ω
RP10B	1.720	.312	1.500	.040	1.800		9.0 W	11.0 W	.04 Ω	.1 Ω to 168K Ω	308K Ω
RP15	1.850	.475	1.500	.050	1.960	RW56	15.0 W	20.0 W	.05 Ω	.1 Ω to 285K Ω	530K Ω

See Page K9 for Part Numbering System.

RB Series

RGA manufactures this style of resistor with an alumina core material. The high heat dissipation properties of this material permit us a higher power rating per size than that of our RP series resistor.



General Electrical Specifications		
Tolerance	Std: ±5%, ±1% Avail: to ± .05%	
Dielectric Strength	RB3 and smaller: RB5 and larger:	500 VAC 1000VAC
TCR	10+ ohms: 1 - 10 ohms: <1 ohm:	±20ppm/°C ±50ppm/°C ±90ppm/°C
Short Time Overload	RB6 and smaller: RB10 and larger:	5 seconds @ 5X rated power 5 seconds @ 10X rated power

RGA P/N	Dimensions (in inches)					Mil Style	Power Rating		Min Ω	Std Range	Max Ω
	A	B	C	D	E		Type U	Type V			
RB1	.275	.094	1.500	.020	.375	RW81	1.0 W	1.5 W	.05 Ω	.1 Ω to 4K Ω	6.5K Ω
RB2	.344	.094	1.500	.020	.450		1.5 W	2.2 W	.05 Ω	.1 Ω to 6K Ω	10.5K Ω
RB3	.406	.094	1.500	.020	.500	RW80	2.25 W	3.0 W	.05 Ω	.1 Ω to 7.5K Ω	13.5K Ω
RB5	.562	.167	1.500	.032	.650		4.0 W	5.0 W	.01 Ω	.1 Ω to 18.5K Ω	33K Ω
RB6	.500	.218	1.500	.032	.600		5.0 W	6.0 W	.01 Ω	.1 Ω to 23.6K Ω	43K Ω
RB10	.875	.312	1.500	.040	.975	RW84	7.0 W	10.0 W	.02 Ω	.1 Ω to 71K Ω	129K Ω
RB12	1.188	.312	1.500	.040	1.280		10.0 W	12.0 W	.02 Ω	.1 Ω to 108K Ω	197K Ω

See Page K9 for Part Numbering System.

RGA Power Resistors Feature:

Welded Construction Throughout

Wide selection of Standard Sizes

Available to ±0.05% Tolerance in many cases

High temperature silicon coating — solvent resistant

Tinned copperweld leads

Available Special Features:

Specific matching of parts — by TCR or tolerance

Special temperature coefficients

Special marking

Lead forming

Different lead configurations

Specification to MIL-R-39007

Non-inductive (Aryton-Perry) Winding

Resistors for the Audio Industry

Non-magnetic, non-inductive, all welded construction greatly enhances frequency response.

Meets or exceeds the specifications in MIL-R-26E for wirewound resistors.

Meets the applicable specifications of MIL-STD-202, method 208

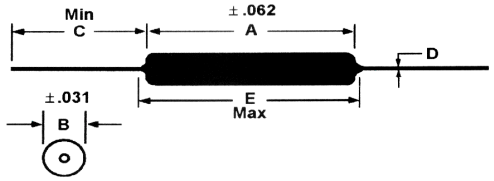
CORE: Alumina ceramic. This material provides significantly broader heat dissipation compared to that of normal steatite ceramic core.

ELEMENT: Nickel-chromium or nickel-copper alloys used.

LEADS: Tinned Copper.

All welded construction and Aryton-Perry winding reduces inductive reactance and signal loss significantly.

General Electrical Specifications		
Tolerance	*Std: ±5%, ±1%* *Avail: to ± .001%*	
Dielectric Strength	*RA5* *RA10 and RA12:*	*500 VAC* *1000VAC*
TCR	*10+ ohms:* *1 - 10 ohms:* *<1 ohm:*	*±20ppm/°C* *±50ppm/°C* *±90ppm/°C*
Short Time Overload	*RA5:* *RA10 and RA12:*	*5 seconds @ 5X rated power* *5 seconds @ 10X rated power*



RGA P/N	Dimensions (in inches)					Power Rating		Min Ω	Std Range	Max Ω
	A	B	C	D	E	Type U	Type V			
RA5	.562	.167	1.500	.032	.650	4.0 W	5.0 W	.01 Ω	1.0 Ω to 2.0K Ω	15K Ω
RA10	.875	.312	1.500	.040	.975	7.0 W	10.0 W	.05 Ω	0.5 Ω to 15K Ω	35K Ω
RA12	1.188	.312	1.500	.040	1.280	10.0 W	12.0 W	.05 Ω	0.5 Ω to 40K Ω	85K Ω

Part Numbering System

RP — **Series**: RP, RB, RA

2(x)W — **Rated Power**: 1/4W ↓ 15W

103 — **Nominal Resistance**

Resistors:
- 3-Digit: E24 Series. EX 2.2Ω=2R2, 100Ω=101
- 4-Digit: E96 Series. EX 10.2R=10R2, 10kΩ=1002

J — **Tolerance**: J - 5%, G - 2%, 3%, F - 1%, B - .1%, A - .05%, .01%, .001%

B — **Packaging Code**: B Bulk; T Tape & Reel