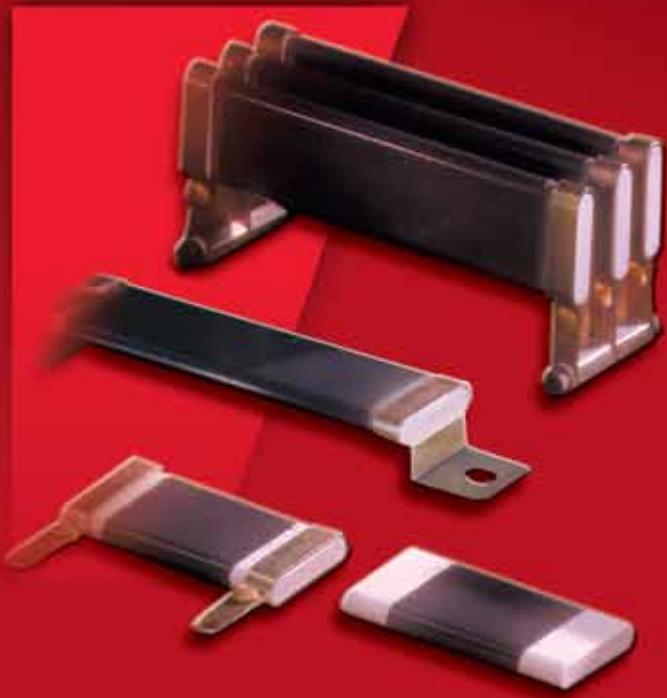


**KANTHAL**  
**GLOBAR**



**SERIES 500SP**  
**NON-INDUCTIVE BULK CERAMIC SLAB RESISTORS**



## KANTHAL GLOBAL



### Series 500SP Non-Inductive Bulk Ceramic Slab Resistors

Series 500SP Non-Inductive Bulk Ceramic Slab Resistors provide high power and energy dissipation in a compact size. Proprietary bulk ceramic "SP" material is used in a simple, efficient design that permits energy to be uniformly absorbed throughout the resistor body, thereby avoiding failure in a peripheral film or wire.

### The advantages of KANTHAL GLOBAR Bulk Ceramic Slab Resistors include:

- Inherently non-inductive, high reliability due to bulk ceramic construction
- 15 watts per inch of length power dissipation
- Excellent pulse/overload capability
- Slim profile for excellent volumetric power efficiency
- Resistance range from 0.2Ω to 800Ω
- Resistance tolerances 5, 10, 20% standard on individual components, available to ±2% on assemblies
- Rated at 8.5KV for 10" length
- Temperature coefficient from +0.2 to -0.08 %/°C

### Typical Applications:

- Motor Drive Controls
- Power Supplies
- Power Conditioning Equipment
- Soft Start/Current Limit Circuits
- Dynamic Braking
- Snubber Circuits
- RF Dummy Load Circuits
- Capacitor Dump Circuits

### A cost-effective, space-saving solution.

The 500SP Series design enables the designer to minimize resistor package size and cost while providing unequalled performance and reliability. The slim, compact resistors offer a number of termination options allowing easy configuration for specific requirements.

## SPECIFICATIONS

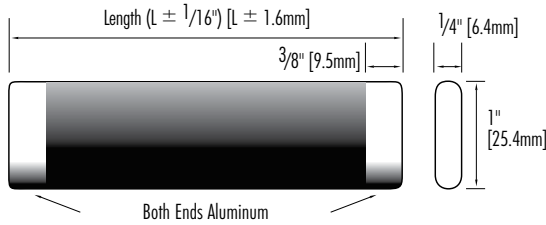
Type	Length (L)	Resistance Range (Ohms)		Average Power @ 40°C Amb. (Watts)	Peak* Energy @ 40°C Amb. (Joules*)	Peak Voltage (Volts)	Resistor Weight (Grams)
502SP	2" [50.8mm]	0.2	110	30	150	900	15
503SP	3" [76.2mm]	0.3	190	45	290	1900	22.5
504SP	4" [101.6mm]	0.4	280	60	480	2800	30
506SP	6" [152.4mm]	0.8	450	90	800	4700	45
508SP	8" [203.2mm]	1.0	630	120	1100	6700	60
510SP	10" [254.0mm]	1.3	800	150	1400	8500	75

\*Based on energy absorption in less than 10 milliseconds. Energy rating can be substantially greater for longer pulses. Contact Kanthal Globar.

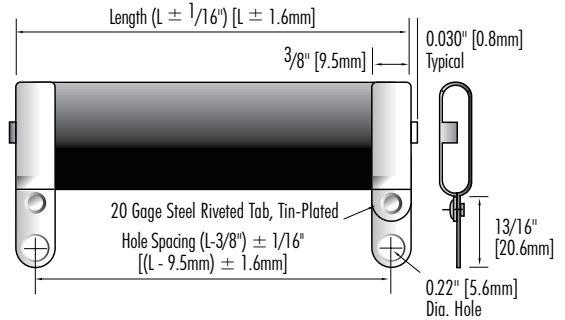
- Standard units are 1" wide by 1/4" thick in variable lengths of 2, 3, 4, 6, 8 and 10 inches. Other lengths to 10" maximum are available.
- Rated average power is 15 watts per inch of length based on 350°C maximum operating temperature with 40°C ambient.
- Peak impulse current rating is 1000 amps. For applications requiring higher current ratings contact Kanthal Globar.

# STANDARD PRODUCTS

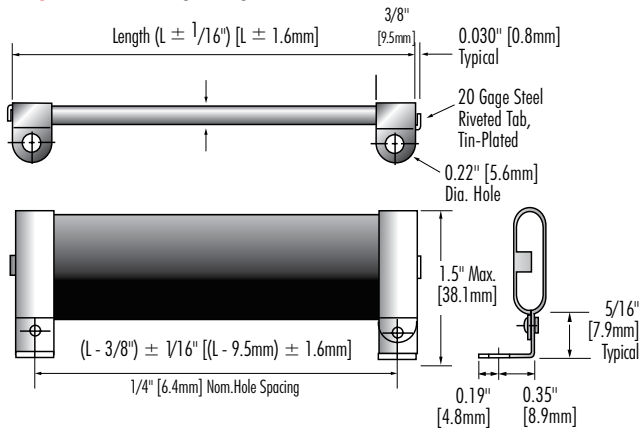
**Figure 1. Without Tabs**



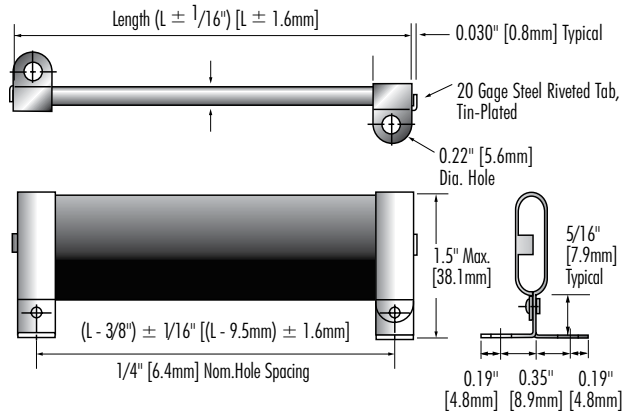
**Figure 2. With Straight Radial Tabs (G1)**



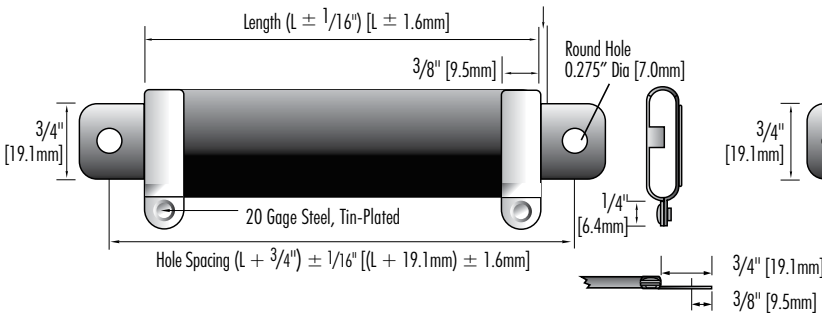
**Figure 3. With Right Angle Radial Tabs - same direction - (G2)**



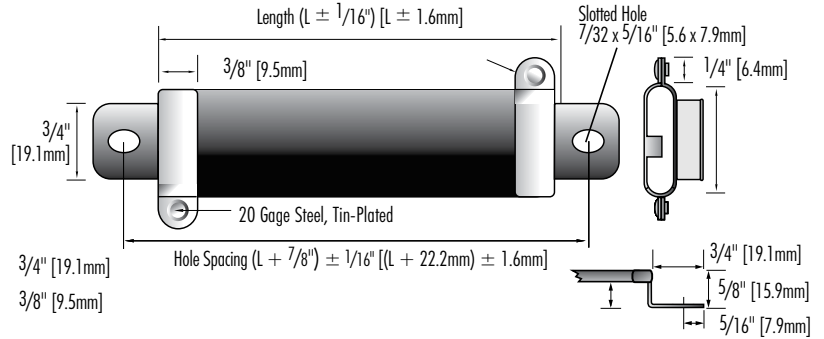
**Figure 4. With Right Angle Radial Tabs - opposite direction - (G3)**



**Figure 5. With Low Profile Axial Tabs (H1)**

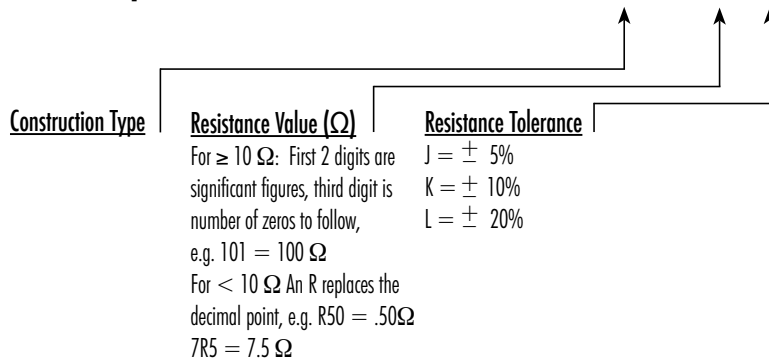


**Figure 6. With Standoff Axial Tabs (H2)**



## STANDARD PART NUMBERS

**Example Part Number: 504SP101KG1 504SP 101 K G1** ← Terminal End Options



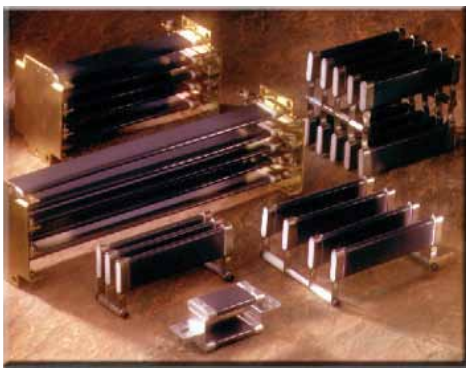
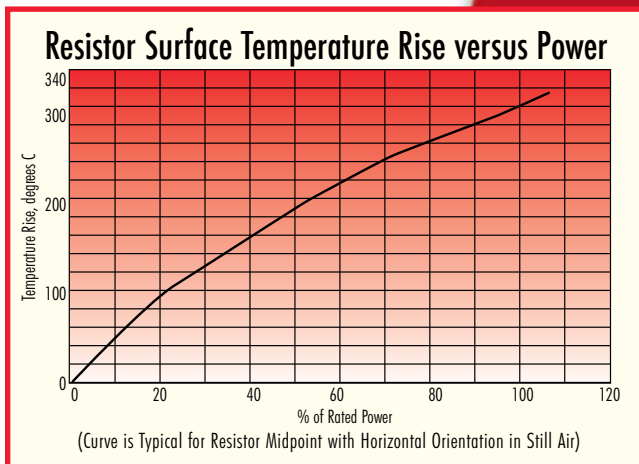
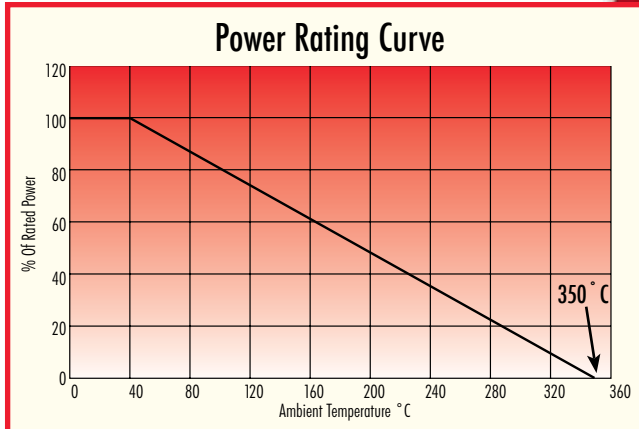
No Suffix	Standard aluminum metalized ends, no tabs, per Fig. 1
G1	Straight radial tab, per Fig. 2
G2	Right angle radial tabs, oriented in same direction, per Fig. 3
G3	Right angle radial tabs, oriented in opposite direction, per Fig. 4
H1	Low profile axial tabs, per Fig. 5
H2	Elevated axial tabs, per Fig. 6

Tin plated steel radial tabs are standard. Consult factory for other tab materials.

Characteristics	
Operating Temperature (1)	-55 °C to +350 °C
Temperature Coefficient	+ 0.2 to - 0.08 %/°C
Short Time Overload: Max. % change after 5 cycles – 10 times rated power, 5 seconds on, 90 seconds off	± 2%
Load Life Max. % change after 1000 hrs. rated power 1-1/2 hours on; 1/2 hour off	± 5%
Thermal Shock Max. % change after 10 cycles -55 °C to +125 °C	± 3%
Moisture Resistance Max. % change when tested per MIL-STD-202, Method 103	± 5%

(1) **Note:** When required, Type SP material can withstand short periods of use at red-heat conditions, i.e. up to 550 to 600°C

Typical Physical Properties:	
Density	2.2 - 2.4 gm/cc
Specific Heat	0.24 - 0.26 cal/gm °C
Thermal Conductivity	0.14 - 0.16 cal/(cm- °C - sec)



## PACKAGED ASSEMBLIES

Individual standard components can be packaged in series, parallel, or series/parallel arrays to optimize energy and power dissipation in available space. Custom assembly packages are available.

## KANTHAL GLOBAL

A Sandvik Group Company

495 Commerce Drive, Suite 7  
Amherst, NY 14228-2311

Toll Free: 877-GLOBAL-2 (877-456-2272)

Phone: 716-691-4010

Fax: 716-691-7850

e-mail: [sales.globar@kanthal.com](mailto:sales.globar@kanthal.com)

Internet: [www.globar.com](http://www.globar.com)