

# Carbon Film Resistors

JARO COMPONENTS, INC. LEADED RESISTORS

## S Series

Normal & Miniature Style

### FEATURES

Industry's Lowest Cost

Delivery From Stock in Bulk, Taped and Strip Pack

Exceptional Long-Term Stability

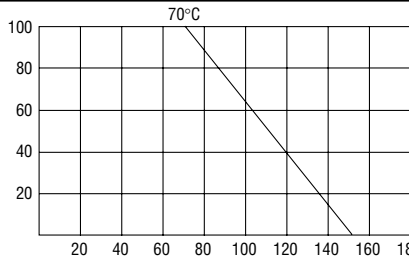
Exceeds Carbon Comp MIL-R-11 Performance

Resistance Tolerance:  $\pm 2\%$ ,  $\pm 5\%$

Variety of Packaging—Bulk, Strip Pack, 26mm and 52mm Tape and Reel, Cut and Formed, or Radial Panaset/Avisert

### DERATING CURVE

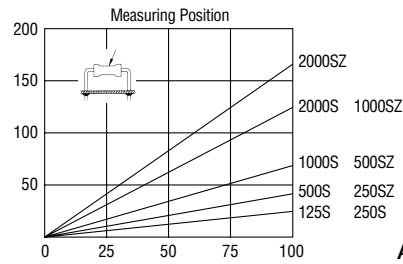
Rated Load (%)



Ambient Temperature (°C)

### HOT-SPOT TEMPERATURE

Surface Temp. Rise (°C)



Applied Load, % of RCWV

FIG. 1 TEMPERATURE COEFFICIENT

STYLE	Max. Value of Temp. Coefficient ppm/°C		
	under 100K $\Omega$	100K to 1M $\Omega$ excl.	1M $\Omega$ and over
1000S, 2000S, 2000SZ	$\pm 350$	+350 -500	+350 -1000
125S, 250S, 500S	$\pm 350$	+350	+350
250SZ, 500SZ, 1000SZ	-500	-700	-1000

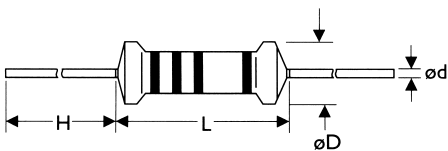
Unit : mm

STYLE		DIMENSION			
Normal	Miniature	L	$\phi D$	H	$\phi d$
125S	250SZ	3.3 $\pm$ 0.4	1.8 $\pm$ 0.3	28 $\pm$ 2.0	0.5 $\pm$ 0.05
250S	500SZ	6.3 $\pm$ 0.5	2.3 $\pm$ 0.3	28 $\pm$ 2.0	0.6 $\pm$ 0.05
500S	1000SZ	9.0 $\pm$ 0.5	3.2 $\pm$ 0.5	28 $\pm$ 2.0	0.6 $\pm$ 0.05
1000S	2000SZ	11.5 $\pm$ 1.0	4.5 $\pm$ 0.5	35 $\pm$ 2.0	0.8 $\pm$ 0.05
2000S	-	15.5 $\pm$ 1.0	5.0 $\pm$ 0.5	32 $\pm$ 2.0	0.8 $\pm$ 0.05

### INTRODUCTION

Billions of products are already in use worldwide in all types of applications—from process control instrumentation to telephone receivers and FM radio to color television. The secret is in a proprietary production system and baking by a uniquely designed and automated production technique. Years of experience in making raw materials and production machinery prove the unique quality and high reliability of these products. They meet-or far exceed—such specifications as EIA RS196A, JIS-C-6402 and IEC-155. The resistors are coated with layers of tan color lacquer.

### DIMENSIONS



# S Series

## ELECTRICAL CHARACTERISTICS

STYLE	125S	250SZ	250S	500SZ	500S	1000SZ	1000S	2000SZ	2000S
Power Rating at 70°C	1/6W	1/4W		1/2W		1W		2W	
Operating Temp. Range	-55°C to +155°C								
Maximum Working Voltage	150V	200V	250V	300V	350V	400V	500V	500V	500V
Maximum Overload Voltage	300V	400V	500V	600V	700V	800V	1000V	1000V	1000V
Dielectric Withstanding Voltage	300V	400V	500V	500V	500V	700V	1000V	1000V	1000V
Value Range $\pm 2\%$ , $\pm 5\%$	1 $\Omega$ ~10M $\Omega$								
Temperature Coefficient (by Type)	see FIG. 1								

\* Standard resistance is 1 $\Omega$ ~10M $\Omega$ , below or over this resistance on request.

## ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD	APPRAISE	
Short Time Overload	JIS-C-5202 5.5	2.5 Times RCWV for 5 Seconds	$\pm(0.75\%+0.05\Omega)$
Dielectric Withstanding Voltage	JIS-C-5202 5.7	in V-Block for 60 Seconds	by Type
Temperature Coefficient of Resistance	JIS-C-5202 5.2	-55°C to +155°C	by Type
Insulation Resistance	JIS-C-5202 5.6	in V-Block	>1000M $\Omega$
Solderability	JIS-C-5202 6.5	235°C for 5 $\pm$ 0.5 Seconds	95% Min. Coverage
Resistance to Solvent	JIS-C-5202 6.9	Trichroethane for 1 Min. with Ultrasonic	No Deterioration of Coatings and Markings
Terminal Strength	Direct load for 10 Sec. in The Direction of The Terminal Leads		$\geq 2.5\text{kg}$ (24.5N)
Pulse Overload	JIS-C-5202 5.8	4 Times RCWV 10000 Cycles (1 Sec. on , 25 Sec. off)	$\pm(1\%+0.05\Omega)$
Load Life in Humidity	JIS-C-5202 7.9	40 $\pm$ 2°C, 90~95% RH at RCWV for 1000 Hrs. (1.5 Hrs. on , 0.5 Hrs. off)	$\pm(3\%+0.05\Omega)$
Load Life	JIS-C-5202 7.10	70°C at RCWV for 1000 Hrs. (1.5 Hrs. on , 0.5 Hrs. off)	$\pm(3\%+0.05\Omega)$
Temperature Cycling	JIS-C-5202 7.4	-65°C>Room Temp.>150°C>Room Temp. for 5 Cycles	$\pm(1\%+0.05\Omega)$
Resistance to Soldering Heat	JIS-C-5202 6.4	350°C $\pm$ 10°C for 3 $\pm$ 0.5 Seconds	$\pm(1\%+0.05\Omega)$

\* Rated Continuous Working Voltage (RCWV)= $\sqrt{\text{Power Rating} \times \text{Resistance Value}}$