HIGH STABILITY PRECISION WIREWOUND RESISTORS

TRAPEZIUM ALUMINA HOUSED WIRE WOUND RESISTORS

FEATURES

Advanced alloy technology

· Very low TCR: lower than ±10ppm/℃.

· Tolerance up to ±0.5%

· Excellent overall stability: Class 0.5

· Suitable for the atrocious environment:
  such as high attitude area and extreme cold area.

· Very low noise and voltage coefficient

· Non-inductance winding available under request

· Perfect pulse loading capability

· Compliant to RoHS directive 2011/65/EU

· Compliant to REACH (EC No. 1907/2006)) (last updated: 27/06/2018)

APPLICATIONS

· Current sensor for test and measuring instruments

· Power supply with high reliability

· Components burn-in devices

· Pulse load and in rush current protector

· Medical equipment

· Military electronics

1. PART NUMBER:

   Part number is identified by the series name, power rating, tolerance, temperature coefficient, and resistance value.

   Example：

TAHS	60	G	1	200
Series	Power	Tol.	T.C.R.	Resistance

   1) Series name: TAHS

   2) Power Rating: 60=60W; 80~500=80W~500W

   3) Tolerance: F=±1.0%; G=±2.0%; J=±5.0%; K=10%

   4) T.C.R.: 3=±25ppm/℃; 2=±50ppm/℃; 1=±100ppm/℃; 0≤±250ppm/℃;

   5) Resistance Value for J tolerance: R47、1R0、100、101、102、333、104……

   6) Resistance Value for tighten tolerance: R470、1R00、10R0、1000、1001、1002

2. DIGITAL MARKING: All part number and batch number for tracing.

3. ELECTRICAL CHARACTERISTICS

Type	Rated dissipation at 25°C	Resistance range Resistance tolerance Temperature coefficient (ppm/°C)		Max. working voltage and Max. overload voltage	Dielectric withstanding voltage	Dimension (mm)						
		F; J (%)	F; J			mm						mm²
		C2; C3	C1;C0			L1±1	L2±1	L3±1	H±1	W1±1	W2±0.5	d±0.2
TAHS40	40W	1Ω to 6.9kΩ	0.1Ω to 6.9kΩ	300V	500V	100	90	75	18	30	5.6	1.5
TAHS60	60W	1Ω to 10kΩ	0.1Ω to 10kΩ	400V	500V	115	98	84	20	40	5.6	1.5
TAHS80	80W	1Ω to 21kΩ	0.1Ω to 21kΩ	500V	500V	109	123	140	20	40	5.6	1.5
TAHS100	100W	1Ω to 32kΩ	0.1Ω to 32kΩ	600V	1000V	119	147	165	20	40	5.6	2
TAHS150	150W	1Ω to 39kΩ	0.1Ω to 39kΩ	900V	1000V	134	148	165	20	40	5.6	2
TAHS200	200W	1Ω to 43kΩ	0.1Ω to 43kΩ	1000V	1000V	155	170	185	30	40	5.6	2
TAHS250	250W	1Ω to 47kΩ	0.1Ω to 47kΩ	1000V	1000V	184	198	215	30	60	5.6	2
TAHS300	300W	1Ω to 69kΩ	0.1Ω to 69kΩ	1500V	1500V	184	212	230	30	60	5.6	2
TAHS350	350W	1Ω to 69kΩ	0.1Ω to 69kΩ	1500V	1500V	184	212	230	30	60	5.6	2
TAHS400	400W	1Ω to 69kΩ	0.1Ω to 79kΩ	1500V	1500V	219	247	265	30	60	5.6	2
TAHS500	500W	1Ω to 69kΩ	0.1Ω to 99kΩ	1500V	1500V	289	317	335	30	60	5.6	2

* Unless otherwise specified, all values are tested at the following condition: Temperature: 21℃ to 25℃; Relative humidity: 45% to 70%;

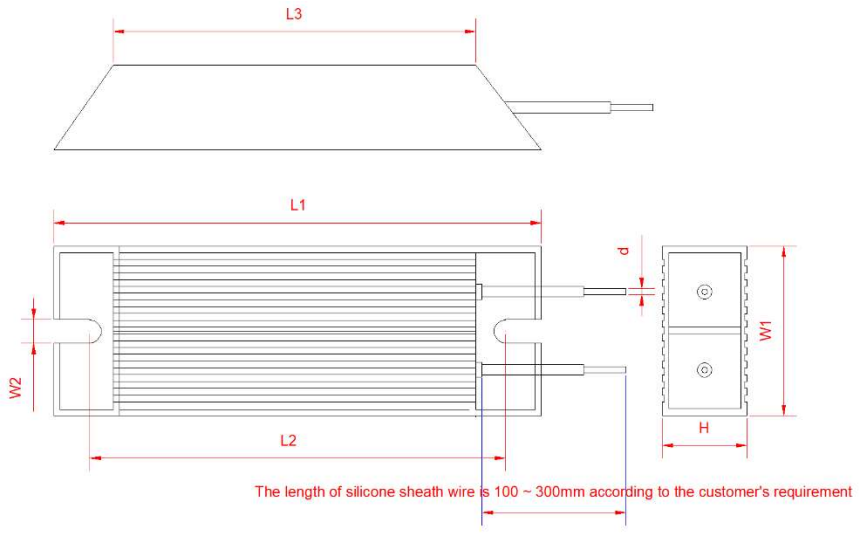
Rated Continuous Working Voltage (RCWV) = Power Rating x Resistance Value

The resistors should be installed on the radiator with area from 1000cm^2~2000cm^2 for more stability and reliability otherwise the temperature rising must be increased dramatically.

Resistance and temperature coefficient out of range is available upon request.

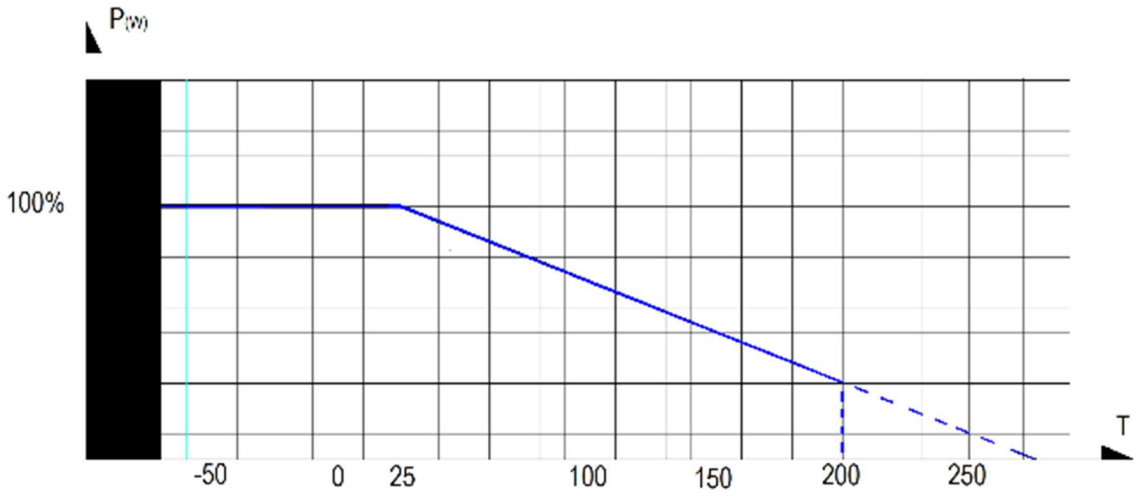
Non-inductance wound is available on request.

4. DIMENSION

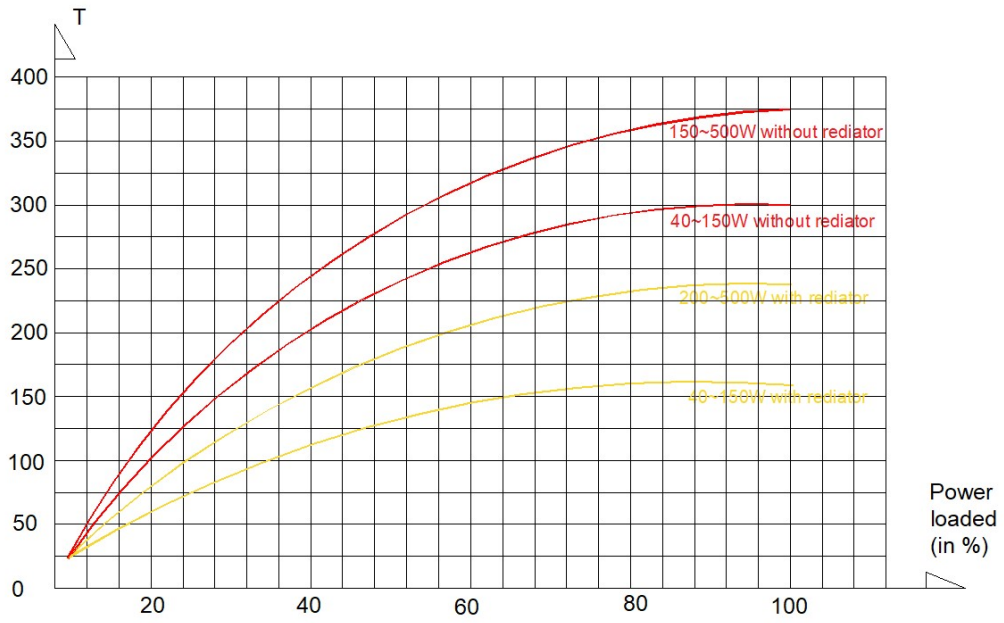


5. Derating curve and temperature rising curve

For resistors working at an ambiance temperature of 25℃ or above, the power rating shall be derated in accordance with the following curve.



Derating curve



Temperature rising curve

6. ENVIRONMENTAL CHARACTERISTICS

1) Dielectric Withstanding Voltage

IEC 60115-1 4.7: Apply dielectric withstanding voltage between terminals and the house, no breakdown or flashover.

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2) Temperature Coefficient Test

IEC 60115-1, 4.8: Test of resistors at room temperature and 60°C above room temperature. Then measure the resistance. The Temperature Coefficient is calculated by the following equation and its value should be within the range requested.

$$\textbf{Resistor Temperature Coefficient} = \frac{R - R_0}{R_0} \times \frac{1}{t - t_0} \times 10^6$$

R = Resistance value under the testing temperature
R_0 = Resistance value at the room temperature
t = the 2nd testing temperature
t_0 = Room temperature

3) Short Time Overload Test

IEC60115-1 4.13: At 5 times RCWV loading or 2 times the maximum working voltage whichever is lower for 5 seconds, the resistor should be free from defects. The change of the resistance value should be within ±(1%+0.05 Ω) as compared with the value before the test.

4) Climatic sequence

IEC 60115-1, 4.19: -55°C to Room Temp. to +200°C to Room Temp. (5 cycles). The change of the resistance value shall be within ±(2.5%+0.05 Ω) as compared with the value before the test.

5) Damp Heat Steady State

IEC 60115-1, 4.24: 40±2°C, 90-95% RH for 56 days, loaded with 0.1 times RCWV or the maximum working voltage whichever is lower. The change of the resistance value should be within ±(5.0%+0.05 Ω) as compared with the value before the test.

6) Load Life Test

IEC 60115-1, 4.25: 25±2°C at RCWV or the maximum working voltage whichever is lower for 1,000+48/-0 Hr. (1.5Hr. on, 0.5Hr. off). The resistors shall be arranged not much effected mutually by the temperature of others and the excessive ventilation shall not be performed. The change of the resistance value should be within ±(5.0%+0.05 Ω) as compared with the value before the test.

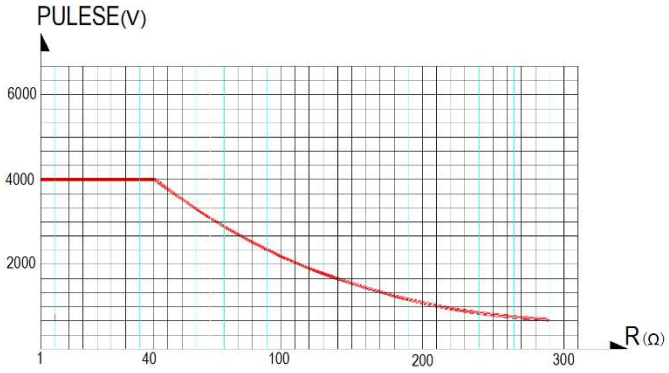
7) Accidental Overload Test

IEC 60115-1, 4.26: 4 times RCWV for 1 Minute. No evidence of flaming or arcing

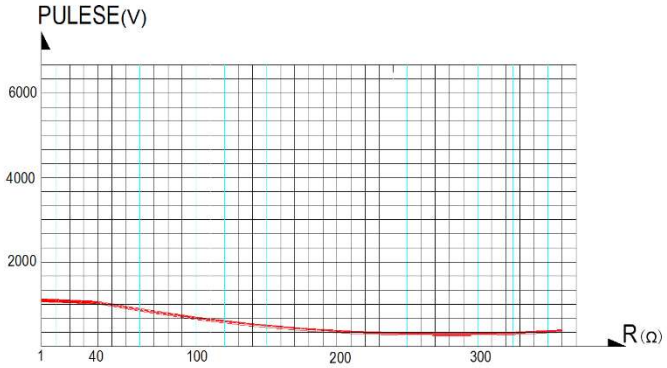
8) High voltage high pulse overload

Apply 10 pulses with voltage via resistance ruled by the following curve to the resistor, the pulses parameter is 1.2/50μs. The change of the resistance shall be within ±(3%+0.05Ω) as compared with the value before the load.

Apply 10 pulses with voltage via resistance ruled by the following curve to the resistor, the pulses parameter is 10μs/700μs. The change of the resistance shall be within ±(3%+0.05Ω) as compared with the value before the load.



Pulse load rating in accordance with IEC 60115-1,4.27; ***1.2μs/50μs***;
10 pulses loaded, for permissible resistance change <±(3%+0.05Ω)
Typical value is <0.4%



Pulse load rating in accordance with IEC 60115-1,4.27; ***10μs/700μs***;
10 pulses loaded, for permissible resistance change <±(3%+0.05Ω)
Typical value is <0.4%

Disclaimer

All products, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise. Thunder Precision Resistors makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product to the maximum extent permitted by applicable law.