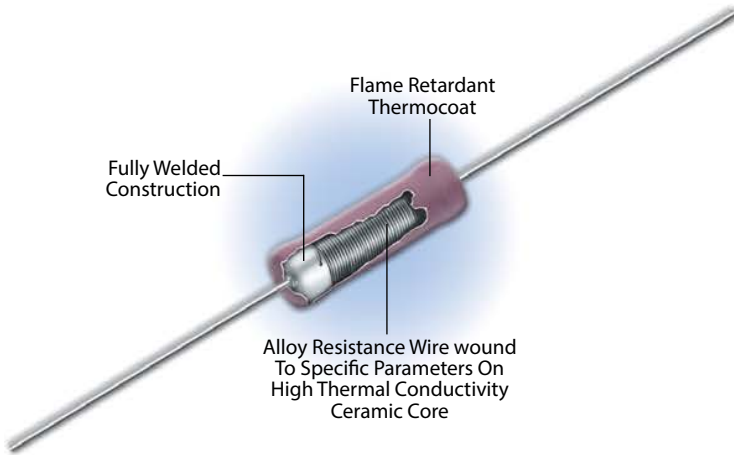




## APPLICABLE STANDARDS

JSS - 50402 [Pattern RFHT - 1], IS - 8909 [Type FRP3]  
IEC-Pub 266 and Pub 266 A [Type - 2E].



## WIRE WOUND RESISTORS SILICONE COATED TYPE

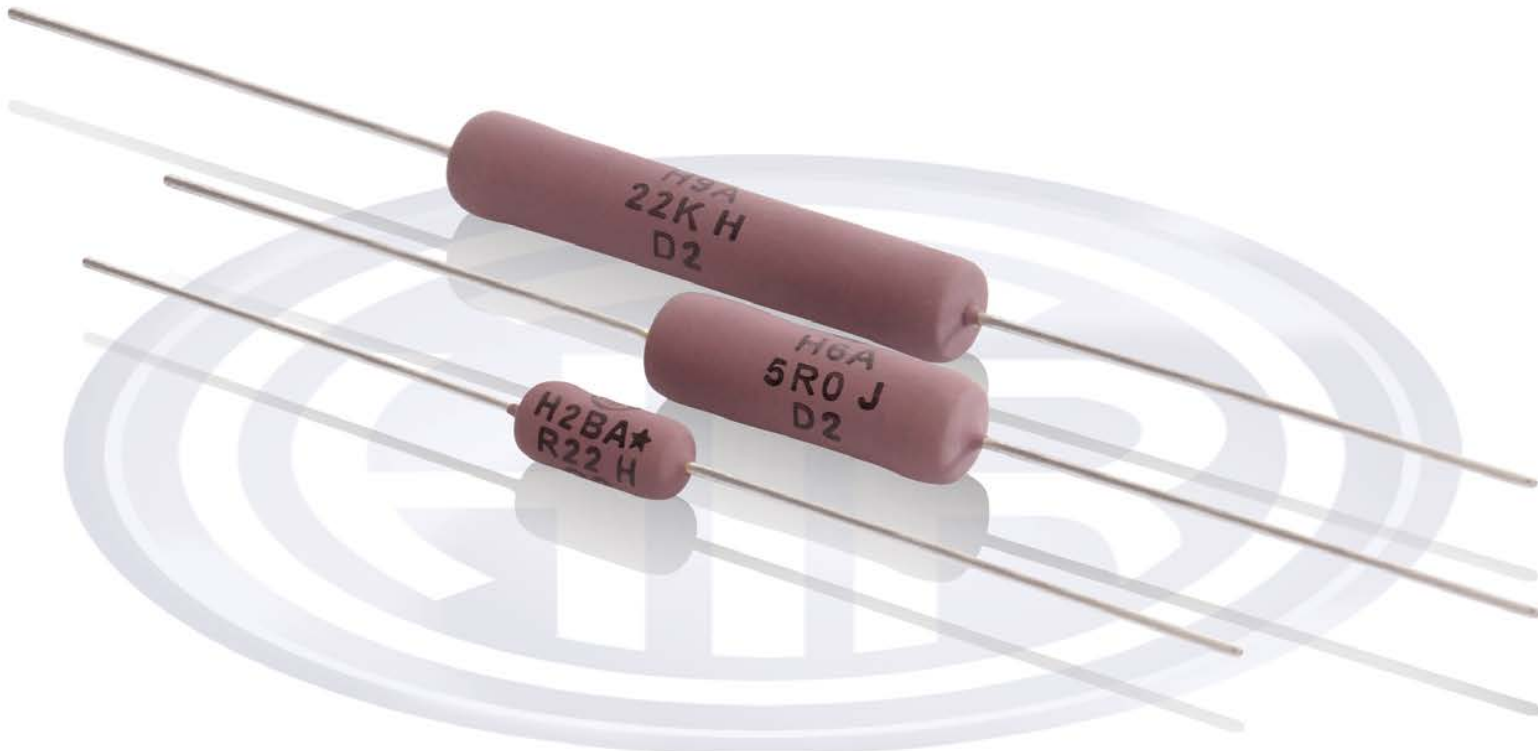
### HTA SERIES

**HIGH SURFACE TEMPERATURE**  
**Power Silicone "Thermo Coat"**

**Wire Wound Resistors**  
**Industrial / Professional Applications**

- Axial Termination
- Flame retardant coating compatible with UL standards
  - 0.75 W to 12 W
- Tolerances as close as 1%
- TCR as low as  $\pm 20\text{ppm} / ^\circ\text{C}$  [on request]
- Pulse types available as per IEC-61000-4-5
  - R01 to 100K

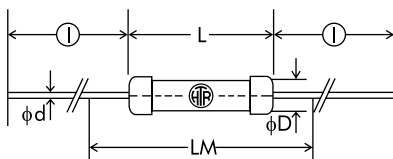
**As per AEC-Q200**





WIRE WOUND  
RESISTORS  
SILICONE  
COATED TYPE  
**HTA**

## PHYSICAL CONFIGURATION



HTR TYPE	POWER RATING at 70°C (Ambient)	DIMENSIONS (mm)					RESISTANCE RANGE		TYPICAL WEIGHT PER PC (gms)
		L (max)	D (max)	d +0.08 -0.05	l ±1.5	* LM ±1	min	max	
H-1BA	0.75W	9.0	3.5	0.8	38	30	R01	2K2	0.6
H-2BA	2.5W	13.0	5.5	0.8	38	35	R01	10K	1.1
H-6A	6W	23.0	8.0	0.8	38	45	R01	33K	2.9
H-9A	9W	39.0	8.0	0.8	38	60	R05	68K	3.8
H-12A	12W	53.0	8.0	0.8	38	75	R05	100K	5.8

- \* For resistance values less than R10 and tolerances less than ±2% please measure resistance over centered length LM.
- Special resistive values available on request.

## NON INDUCTIVE RESISTORS

Low inductance Aryton - Perry winding type resistors are available in this series. For non-inductive types reduce maximum resistance values shown to 50% and the continuous working voltage to 70% (please refer to note (2) of ordering information for placing orders).

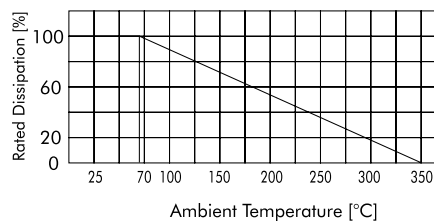
## PRE-FORMED LEADS

The resistor terminations can be bent and cut as per requirements for quick PCB mounting. Please send detailed drawings of specific type of preforming required. Depending on application the resistors leads may be tin plated Copper Weld\* instead of tin plated copper.

## TAPING

Types H-1BA, H-2BA, H-6A, H-9A, H-12A can be supplied in taped form. Please refer Tape / Ammo pack specifications. Tape / Reel on request. Type H6A, H-9A, H-12A in taped form will be supplied with tin plated copper clad steel (copper weld\*) terminations.

## DERATING CURVE



## ELECTRICAL CHARACTERISTICS/ DATA

PARAMETER/PERFORMANCE TEST & TEST METHOD	PERFORMANCE REQUIREMENTS
<b>Power Rating</b> (Rated Ambient Temperature)	Full power dissipation at upto 70°C and linearly derated down to zero dissipation at 350°C. [see Derating Curve above]
<b>Resistance Tolerances Available</b> [Test method no. 13.2 of JSS - 50402 and 50400]	±10% [K]; ±5% [J]; ±3% [H]; ±2% [G]; ±1% [F]
<b>Voltage Rating / Limiting Voltage / Max. Working Voltage</b>	$V = \sqrt{P \times R}$
<b>Voltage Proof / Dielectric Withstanding Voltage</b> [applicable to insulated styles only] [Test No. 13.31 of JSS - 50400]	No breakdown or flashover
<b>Insulation Resistance</b> [Test No. 13.4 of JSS - 50402 and JSS - 50400]	1000 M [Dry]
<b>Short Time Overload</b> [Test No. 13.19 of JSS - 50402 and JSS - 50400]	Max. $\Delta R \pm (2\% + R05)$

## PULSE CAPABILITY

- Resistors for use under pulse conditions as per IEC - 61000 - 4 - 5 available. For further information please refer to **"Pulse / Surge capability of resistors"**.
- In-case a tailor made pulse resistor is required, please refer to **"Questionnaire of data required"** and provide data accordingly.
- Once power rating and resistance value are established by the design engineer, HTR can provide vital data in the form of charts/graphs for two important characteristics of the pulse version of these resistors -
  1. Pulse on a regular basis ; Max allowable peak pulse power (W) as a function of pulse duration (T).
  2. Pulse capability ; Energy (J) as a function of R (Ω).

**It is essential that this data must be validated in actual trials and HTR will be pleased to provide the necessary samples for validation and homologation.**



WIRE WOUND  
RESISTORS  
SILICONE  
COATED TYPE  
**HTA**

## ENVIRONMENTAL SPECIFICATIONS

PARAMETER/PERFORMANCE TEST & TEST METHOD	PERFORMANCE REQUIREMENTS
<b>Temperature Cycling</b> [Test No. 13.14 of JSS - 50402 and JSS - 50400]	Max. $\Delta R \pm (2\% + R05)$
<b>Life (Electrical)</b> [Test No. 13.17 of JSS - 50402 and JSS - 50400]	Max. $\Delta R \pm (\leq 5\% + R05)$
<b>Climatic and Damp Heat</b> [Test No.13.15 and 13.16 of JSS - 50402 & JSS - 50400] [Severity H - 13]	Max. $\Delta R \pm (<5\%)$ - No physical damage
<b>Flammability</b> [Test no. 10 of JSS - 50101]	Within the specified limits
<b>Temperature Characteristic of Resistance</b> [Test No. 13.24 of JSS - 50402 and JSS - 50400]	$\pm 100$ to $200$ ppm / $^{\circ}\text{C}$ (Can be significantly lowered on request)

## MECHANICAL SPECIFICATIONS

PARAMETER/PERFORMANCE TEST & TEST METHOD	PERFORMANCE REQUIREMENTS
<b>Pull Test / Robustness of Terminations</b> [Force supplied from 2 to 4.5Kgs depending on size]	No mechanical damage
<b>Solderability</b> [Test method no.19 of JSS 50101]	$\Delta R < \pm [1\% + R05]$ - Continuous and satisfactory

## TYPICAL APPLICATIONS

HTA Series is unique due to its special flame proof 'Thermocoat' which resists hot spot temperature of  $350^{\circ}\text{C}$  and uses specially selected resistance elements and substrates.

These unique features can be effectively used by the circuit designer in all industrial, electrical, electronic and telecommunication equipment where large power dissipation : size ratio are required and where the ambient operating temperature is elevated without sacrificing accuracy and reliability.

HTA series when wound by the Aryton-Perry method can be used effectively for high frequency applications, if required.

**Note :** The words "Applicable standards" do not necessary signify certification to that standard., however the tests mentioned are carried out on the broad based guidelines set out in these standards.

## ORDERING INFORMATION

Series	Type	Packing	Resistance Value	Tolerance
HTA	H-6A/H6A*	Bulk H-6A / H6A* Tape & Ammo H6AT / H6A*T Tape & Reel H6ATR / H6A*TR	50R	J

1. For RoHS version - H-6A \*
2. For Non Inductive type - N H-6A
3. For Pulse type - H-6A I
4. For Tape and Ammo packing - H-6A T
5. For Tape and Reel - H-6A TR