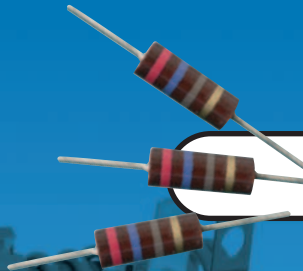
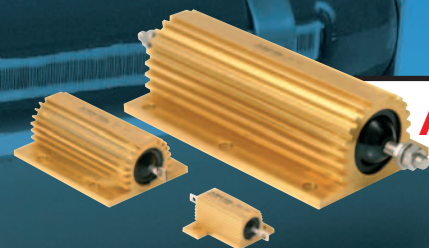


High Precision



High Energy



Aluminium Housed



Thick Film Power



High Voltage

The Products

About Us

Geographically speaking ...

For more than forty years the Arcol Resistor Company has manufactured fine quality resistors, from a strategic location in central Cornwall, in the western part of the United Kingdom. Housed in a modern 50000 sq foot facility, Arcol has consistently invested in whatever resource has been required to keep its business 'ahead of the game'.

Why Arcol? ...

Arcol Resistor's position as the world's number one power resistor manufacturer, is based on a simple formula – delighted customers.

Arcol's industry leadership means that no matter how hard your programme pushes at the boundaries of technology, you'll have a partner you can rely on to meet the challenge and deliver high quality, cost effective solutions .. on time.

What's behind it all? ...

Years of working with the world's leading power electronics OEM's has driven Arcol to constantly hone its manufacturing efficiency. This has created a flexible, integrated, lean production division, with a continuous improvement philosophy, short lead times, and with high quality and low costs being a way of life.

Technically speaking ...

Arcol designs, develops and precision engineers the finest



power resistor solutions available anywhere. Careful selection of the winding wires for both stability and pulse capability is combined with advanced winding skills onto high purity alumina cores. Encapsulation utilising latest insulating materials significantly improves dielectric breakdown voltages.

More than standard resistors, Arcol also delivers complete resistive solutions, requiring only the basic circuit performance and the real estate available to be defined.

Arcol understand your business ...

By using experience gained over more than 40 years in the industry, Arcol will quickly create resistor solutions, which exactly meet your cost and performance requirements and deliver them on time!

What's the secret? ...

People are the unique strength. You will find customer service prompt, informed, and reliable but this is only the front office. Right through the organisation, outstanding competence and commitment characterises everything Arcol does at every level.

Whether its technical product specification, low cost lean manufacturing, process engineering, sample design, long term schedule logistics (product when you want it) or customised testing.

Arcol people are the key!

Arcol across the World ...

For the convenience of customers, Arcol has appointed an international network of representatives who will be delighted to help you locally with a stock buffer or the specification of a resistor to meet your exact requirement.

Talk to Arcol Resistors today!

Arcol - The Problem Solver



Consistently in the front line of new applications technology, Arcol works closely with the leading developers of control electronics for wind energy turbines.

Frequent fluctuations in wind speed and intensity present Arcol designers with a challenge in supporting the generation of smooth and consistent system power download.

"At Arcol we have accumulated experience in all aspects of design, production and application of resistive solutions, and are dedicated to providing you the most complete customised service available anywhere.

At our headquarters, we maintain a flexible approach in terms of both design and the allocation of resource.

By consulting us early in your design process, we will, where possible, modify a standard product or process to meet your need at a minimum cost. If appropriate, we are competent and prepared to develop an entirely new solution, drawing on different technologies to ensure the best-fit solution.

We routinely then provide a prototype with little fuss or delay – normally free of charge.

We supply custom-designed resistive product to automotive, military aerospace, instrumentation, power transmission, traction and wind energy ... for use in both benign and extremely hostile working environments.

Our manufacturing and test systems are approved to ISO 9001.



We can generate a specification and then undertake type approval, to include functional, parametric and environmental testing.

This is what we call customer service!"



When faced with a unique challenge of converting conventional motorcycle filaments to high intensity LED's, ARCOL were able to develop a compact resistor kit that enables the user to select and install a ballast specific to the vehicle lighting requirements.



Description	ASP10	AP725	AP825	AP820
	 A non-inductive surface mount resistor pack capable of dissipating 10 watts with the use of a suitable thermal pcb pad. With low thermal resistance in each axis, this is a unique SOIC resistor package	 This novel surface mount power resistor in a TO263 style (D pak) will dissipate 20 watts subject to the case temperature being between, minus 55°C and +25°C. It can be soldered or clipped to the board	 A high quality, innovative T0126 style resistor pack designed for high frequency emitter circuits in switching power supplies or in snubber and pulse handling circuits.	 A high power T0220 style resistor pack designed for high frequency emitter circuits in switching power supplies. Also used in motor control and drive circuits
Power Dissipation	5 watts - consult us for power to 10 watts	20 watts with h/s 2.5 watts no h/s	20 watts with h/s (<200R – 10 watts)	20 watts with h/s 2.25 watts no h/s
Value Range	R01 to 100K	R01 – 51K	R01 – 51K	R01 – 51K
Tolerance Options	±1% or ±5%	±1% or ±5%	±1% or ±5%	±1% or ±5%
TCR Options	±100ppm/°C	±50 - 250ppm/°C (re ohmic value)	±50 - 250ppm/°C (re ohmic value)	±50 - 250ppm/°C (re ohmic value)
Maximum Voltage	500Vdc or √(P.R)	500Vdc or √(P.R)	500Vdc or √(P.R)	500Vdc or √(P.R)
Dielectric Strength	4000 Vdc	2000 Vdc	2000 Vdc	2000 Vdc (60 secs)
Special Features	Non inductive, ROHS compliant and suited to inrush current protection	The resistor will dissipate 20 watts subject to the case tab temperature being kept at 25°C max	This is a small thin package for high-density PCB mounting – current rating 25 amps max	Low thermal resistance 5.9°C/W resistor hotspot to metal tab



AP850



A really high power T0220 resistor pack with very low thermal resistance. New high technology materials and rapid heat transfer to heat sink via thermal grease is the secret.

AP140



A T0247 resistor pack with low thermal resistance and capable of dissipating 140 watts! High technology materials aid rapid heat transfer to heat sink via thermal grease

FCR



A novel thick film resistor on alumina, requiring tiny board real estate, but with excellent power dissipation and of course completely non inductive

FPA



Thick Film resistors in SOT 227 pack (100 watts) and the larger 250 watt pack. These are designed for high frequency and pulse load applications. 2 and 4 terminal versions with different circuits

FPA600



Designed for use as a snubber resistor to compensate the C-R peaks in traction power supplies, the FPA600 has a large creep distance and a special resistor element for perfect current yield over entire area

50 watts (tab temp max 25°C) 2.25 watts no h/s

140 watts (tab temp max 25°C) 5 watts no h/s

5 watts and 10 watts

100 watts and 250 watts

600 watts at max 85°C bottom case temp

R01 – 51K

R01 – 51K

1R to 200K

1R to 2 Meg

R5 to 100K

±1% or ±5%

±1% or ±5%

±5%

±5% or ±10%
±1% possible

±5% or ±10%

±50 - 250ppm/°C
(re ohmic value)

±50 - 250ppm/°C
(re ohmic value)

±100ppm/°C

±100ppm/°C

±150ppm/°C

500Vdc or
√(P.R)

700Vdc or
√(P.R)

300Vac/500Vac

100W 1000Vac
250W 5000Vac

5000Vdc

2000 Vdc
(60 secs)

2500 Vdc
(60 secs)

5000 Vdc

100W 4000Vac
250W 7000Vac

12000Vdc

Low thermal resistance at 2.3°C/W resistor hotspot to metal tab

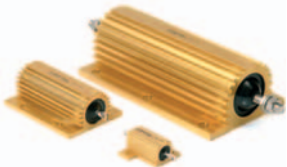
Extremely low thermal resistance at 0.9°C/W resistor hotspot to metal tab. Please consult with company re application areas

High power densities in two planar different sizes packages

Special very high power SOT227 available to order – please ask

Partial discharge 4Kvrms <10 pc up to 7kV. Please consult with company re application areas



Description	HS	HS200+	NHS	HSW
	 Globally the No 1 range of aluminium housed power resistors. They are manufactured to meet the requirements of MIL 18546 and IEC 115 and are of course RoHS compliant.	 For high power duties, Arcol have extended the conventional range to three new sizes above 200 watts. Each requires six mounting bolts and the terminals are solid nut, bolt, washer.	 Using the Ayrton Perry winding technique, the NHS offers a very low inductance together with a high power performance (on a suitable heatsink). Working voltage and ohmic values are derated accordingly	 Manufactured to meet the requirements of MIL 18546 and IEC 115, the HSW is mounted to a heat sink, then pipes connected to optimise water cooling, it dissipates a full 600 watts in a compact package
Power Dissipation	10 watts to 150 watts	200 watts to 300 watts	10 watts to 300 watts	600 watts
Value Range	R005 to 100K	R01 to 68K	R01 to 20K	R1 to 30K
Tolerance Options	Std $\pm 5\%$, $\pm 1\%$	Std $\pm 5\%$, $\pm 1\%$	$\pm 5\%$ or $\pm 1\%$	$\pm 5\%$
TCR Options	$\pm 25\text{ppm} - 100\text{ppm}/^\circ\text{C}$ (re ohmic value)	$\pm 25\text{ppm} - 100\text{ppm}/^\circ\text{C}$ (re ohmic value)	$\pm 25\text{ppm} - 100\text{ppm}/^\circ\text{C}$ (re ohmic value)	$\pm 25\text{ppm} - 100\text{ppm}/^\circ\text{C}$ (re ohmic value)
Maximum Voltage	160 to 2500 Vdc (ac-rms max)	1900 to 2500 Vdc (ac-rms max)	1300 to 1700 Vdc (ac-rms max)	2200 Vdc (ac-rms max)
Dielectric Strength	1400 to 6000 Vac peak re size	5000 Vac	3000 Vac peak	3000 Vac peak
Special Features	Special high pulse versions routinely available. Stocked extensively in distribution	Special high dielectric breakdown versions 3500 Vdc available. Stocked in distribution globally – please ask	Special high pulse versions 2500 Vdc available	Dissipates 600 watts on a 3750cm ² x 3mm aluminium plate with 25°C water flowing @ 2 litres a minute



ACS



Generally available from stock, this range of silicone coated axial resistors does not compromise quality to deliver a very low price. Having a high purity alumina core, the ACS, size for size, dissipates more power than most of its competitors.

1 watts to 10 watts

R1 to 100K

±5% to ±10%
(±5% standard)

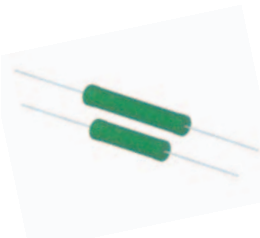
±20ppm - 90ppm/°C
(re ohmic value)

20 Vdc to 800 Vdc
(re size)

500 Vac

Non inductive windings are available – with reduced ohmic value range

V



A full range of classic axial vitreous enamel coated resistors covering both the European and North American sizes v power. The finest materials are fully encapsulated in a solid vitrified glass coating for ultimate humidity proofing

3 watts to 14 watts

R1 to 100K

±1% to ±10%
(±5% standard)

Typically
±75/200ppm/°C

200 Vdc to 750 Vdc
(re size)

500 Vac

Meets the requirements of JSS50402 and CECC40201. Special winding and high pulse versions available

PE



Where axial vitreous power resistors end, then the PE takes over. The nichrome winding is encapsulated with several coats of enamel allowing it to withstand the most extreme conditions. Faston terminals or ferrule ends can be specified to order

30 watts to 380 watts

2R2 to 125K

±5% or ±10%

Typically
±100/200ppm/°C

√ P.R.

3000 Vac peak
(relating to size)

These resistors are available with one or more tap bands making them fully adjustable

PT



The PT is similar to the PE but utilises edge wound tape to lift the power capability in a smaller body package. Resistor values are consequently lower than its PE wirewound sister

35 watts to 625 watts

R02 to 30R

±5% or ±10%

Typically
±100/200ppm/°C

√ P.R.

3000 Vac peak (relating to size)

Mounting horizontally, vertically or with ferrule ends clips

PB/PHD



The PHD is normally selected for dynamic braking where a high pulse load resistor is required. High energy absorption winding over 6 wattage sizes. Faston terminals or ferrule ends are available

200 watts to 750 watts

R45 to 3K1

±5% or ±10%

Typically
±100/200ppm/°C

√ P.R.

Relates to size. Please ask for spec.

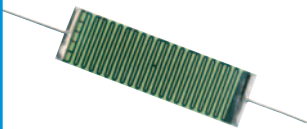
These resistors are available with one or more tap bands making them fully adjustable



Description	AP 5025	MSR	APR	ABL
	 A very high power current sense chip resistor capable of dissipating a stunning 8 watts with recommended thermal management architecture on the PCB. Measuring just 12.8mm by 6.4mm the chip has excellent pulse/surge performance.	 A flexible range of open frame, pluggable current sense shunts offered from stock, at very attractive prices. Full value range available in three popular power ratings. Stocked in distribution.	 A range of very high power, non inductive shunt resistors, ideally suited to metering and current detection in motors. ROHS compliant. These products are mostly custom designed. Please advise your requirements.	 A tough ceramic encased, low ohm current sense resistor with inductance less than 20 nH and with a low temperature rise. A well tried robust solution for current shunts in high frequency circuits
Power Dissipation	8 watts with 700 micron PCB thermal Pad	1, 2 or 5 watts	$W = I^2 \times R$	4 watts
Value Range	R005 to R01	R005 to R1	R001 to R05	R005 to R051
Tolerance Options	±1% or ±5%	±1%	±1% or ±5%	±1% or ±5%
TCR Options	±50ppm/°C	±20ppm/°C	±50ppm/°C	±160ppm - 600ppm/°C
Maximum Voltage	√ P.R.	√ P.R.	To 30 amps	√ P.R.
Dielectric Strength	5KVac	Contact Arcol	250% rated power 5 seconds	2KVdc
Special Features	An increase of 15°C or so in reflow temperature is required due to heat dissipation potential. Please request mounting guide	Inductance less than 10nH	The resistor should be kept at 200°C max via heatsink if necessary. Custom designs and SMD versions possible	Whilst value range is standard (see data sheet) we are able to produce any exact value where quantity justifies



967



These versatile, low cost planar resistor enables high-density packaging for high volume applications. RoHS compliant, 967 plate resistors can have lead wires attached radially or axially.

1 watt to 10 watt
depend on plate size

4K to 30G

±0.1% to ±10%

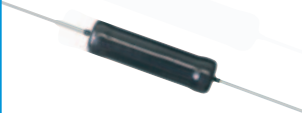
15ppm - 200ppm/°C

To 35KVdc
(largest size)

>1000 Vdc

Ten different plate sizes
allow power handling
up to 10 watts

HTS



A range of fine axial high voltage resistors within a tough epoxy coating. Non-inductive of course, these resistors combine very high stability with very high ohmic values, in a range of body sizes

0.2 watts to 9 watts

100K to 1G

±1% to ±10%

±75ppm/°C
(±20ppm/°C on request)

2.5KV to 48KVdc
(largest size)

>60KVdc (largest size)

These resistors are not
suitable for use in
aggressive atmospheres.
Consult us for special
coatings

HTE



Designed for applications such as voltage dividers, medical and measuring instruments and electrostatic and current limiting devices where high stability and high ohmic values are important

0.7 watts to 15 watts

1K to 700M

±1% to ±10%

±100ppm/°C

2.5KV to 48KVdc
(largest size)

>1000Vdc

Wide range of values
and body sizes.
Please ask about
customised solutions

969



These tubular resistors have screw terminals and combine very high precision with very high ohmic values and high voltage capability. Five convenient sizes ensure power handling between 11 watts and 105 watts.

11 watts to 105 watts

80R to 25G

±0.1% to ±10%

±15ppm - ±200ppm/°C

96KVdc

60KVdc

These resistors are not
suitable for use in
aggressive atmospheres.
Consult us for special
coatings

UT



The UT range of tubular, high voltage resistors are designed to handle impulse energy with high voltage and extreme resistor values. All sizes can be supplied with 10 terohms max ohmic value

20 watts to 150 watts

10R to 10T

±1% to ±10%

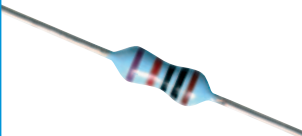
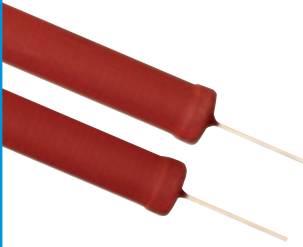
±100ppm/°C
(others on request)

40KVdc to 100KVdc
(largest size)

180KVdc (largest size)

Impulse energy 62000
joules in a 460mm
length. Please ask
about customised
solutions



Description	RN	SP	MRA	968
	 A very high precision nichrome thin film chip. Most popular is 08.05 size but 12.06 and 06.03 are available. Nickel chrome is sputtered onto high purity alumina substrates.	 The S types are a fully moulded SMD series. The SP is the high precision product, offering high power dissipation in a wide resistor value range, and tolerances down to 0.0005%	 Europe's No 1 selling axial thin film high precision resistor. Stable films are sputtered on to high purity alumina rods, then covered in tough epoxy to protect from any environmental extremes	 These are precision very high voltage resistors, with wire leads for PCB mounting. A combination of tight TCR, low resistor tolerance and high ohmic value make this almost unique in the market
Power Dissipation	0.063 watts to 0.125 watts	0.5 watts to 4 watts	0.25 watts	3.8 watts to 17 watts
Value Range	5R to 3M3	R01 to 50K	10R to 1M	400R to 30G
Tolerance Options	±0.1% or ±0.5%	±0.005% or ±0.1%	±0.1%	±0.1% to ±10%
TCR Options	±5ppm - 100ppm/°C	±20ppm/°C above 100 ohms	±15ppm/°C	±15ppm - 200ppm/°C
Maximum Voltage	100, 150 or 200 Vdc Re chip size	100 Vdc to 400 Vdc Re chip size	350 Vac	54KVdc
Dielectric Strength	200, 300, 400 Vdc Re chip size	500 Vac	500 Vdc	60KVdc
Special Features	Taped 5000 per reel to EIJ specification	Supplied loose or taped and reeled	Selection series E48 or E96 (E96 stocked)	Very high voltage for use in air. For aggressive environments please consult with company re application areas



RCC



Solid carbon resistors designed for high energy dissipation. These small leaded resistors are non inductive and combine high pulse characteristics with excellent stability

0.25 watts or 0.5 watts

2R2 to 22M

±5% to ±10%

See product data sheet

250 and 350 Vdc

500 and 700 Vdc

Peak pulse voltage is 6kv on 0.25w size and 10kv on 0.5 watt size. Available in distribution

PK



Careful selection of materials has created a film resistor tolerant of high pulses yet essentially non inductive. Special processing of the film gives excellent pulse to size capability over a wide value range

2 watts to 15 watts

1R to 2M

±10% also ±5% and ±2% on request

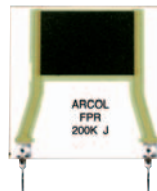
±100ppm/°C

3.5KV to 12KVdc (re size)

>1000 Vdc

Up to 2500 joules – single impulse in largest body size subject to ohmic value

FPR



A thick film inrush protective resistor, having a power rating up to 50 watts (2" long substrate) and strengthened terminals to inhibit vibration. Range of sizes to 50 watts available

3 watts to 50 watts

R1 to 200K

±5% (±1% possible)

Typically ±100ppm/°C

500 Vdc

5KVdc min

Withstands vibration at 20G, 10Hz to 2Hz, no change in resistance. Power ratings are in free air

TFB



This resistor utilises a 0.9mm stainless steel plate which is insulated by the deposition of several layers of glass. A serpentine track is printed in a special silver ink and the whole encapsulated in a protective silicone coat

300 watts

R5 – 270R

±10%

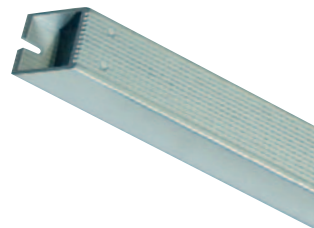
±500ppm/°C

√ P.R.

2500 Vdc

Inductance is less than 5uH. Resistor withstands 16000 watt pulse for 1ms. Custom designs are expected

ABR



A new range of dynamic braking resistors encased in a solid aluminium extrusion offered in a range of power ratings ,dependent on body footprint. The element is encapsulated in silicone cement for ultimate environmental protection.

60 to 500 watts

1R to 60R

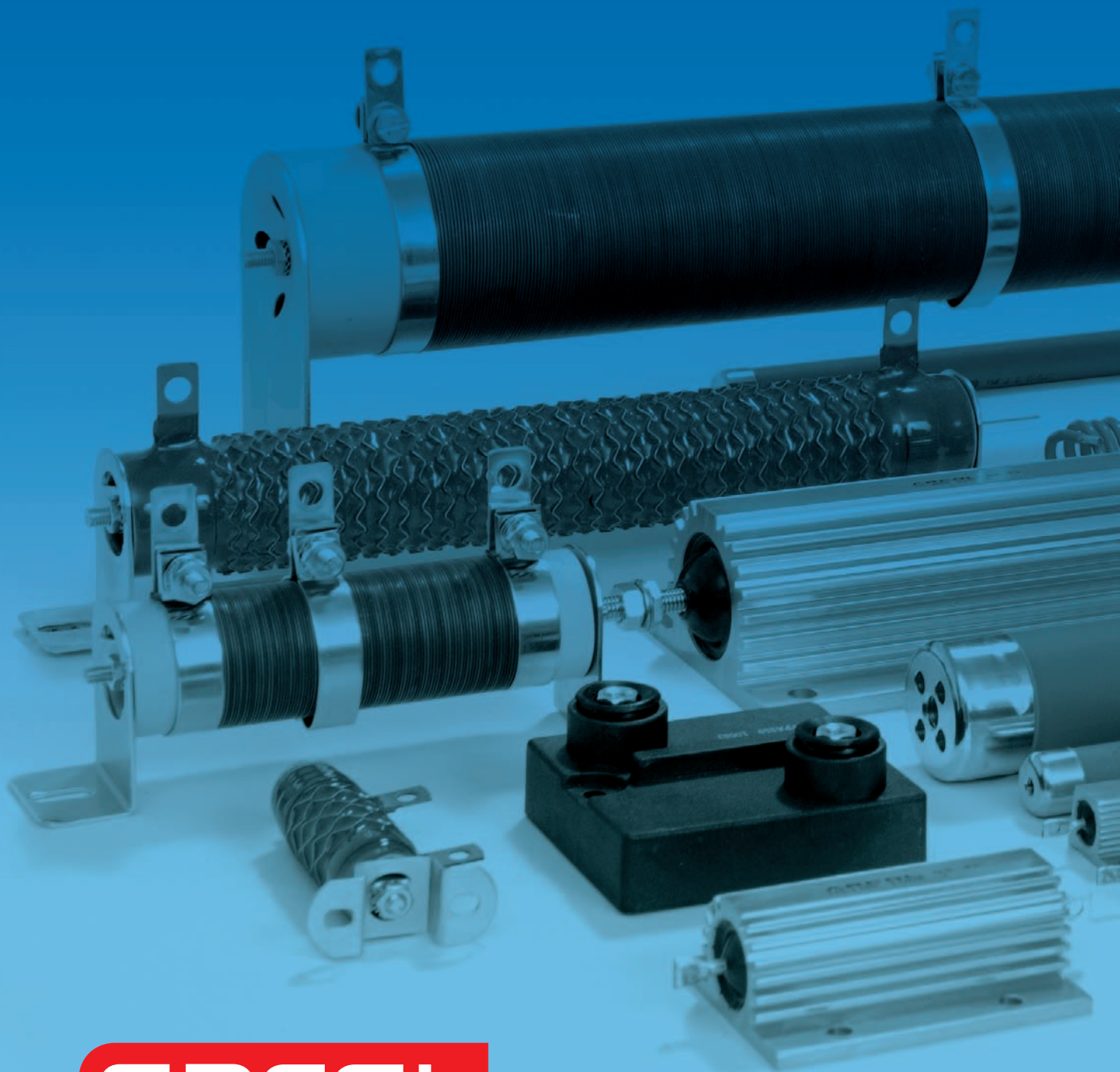
±5% or ±10%

±260ppm/°C

√ P.R.

2500 Vac

Six popular body sizes between 115mm and 335mm long with a 20mm height in the smaller sizes and 30 mm in the remainder



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Arcol operate a policy of continual product development, therefore, specifications may change.