



RHOPOINT

COMPONENTS



ELECTRONIC COMPONENTS

SENSORS

CONNECTORS

Company Directory
on Page 8

About Rhopoint Components

Rhopoint Components is a specialist distributor of precision electronic components, sensors and connectors. As an authorised partner for more than 25 industry leading manufacturers from around the world including Caddock, Isabellenhütte and Ohmcraft, we have been meeting the high demands of the UK and international marketplaces since 1975.

With over 150 years of combined experience working at Rhopoint, our friendly and professional team offers a high level of technical and logistical support.

We at Rhopoint Components can offer you, our customers, fully customised solutions to meet your specific technical requirements. Additionally, an extensive range of standard products is readily available from our stock. All of this is supported by an efficient sales and distribution operation, covering our entire product range, from our main office in Sussex.

We take pride in the fact that our level of product knowledge is the same as that of our manufacturing partners. Our office and field-based engineers located around the UK and in Europe will be pleased to offer advice and provide you with the best possible solutions for your design.

We are happy to discuss your requirements by phone, email or in person. You can even reach us via Live Chat. Whichever way you decide to contact us, we look forward to assisting you with any commercial and technical queries you may have.

Product Support

Our decades of experience, working closely with our manufacturing partners, puts us in a unique position to advise on projects which require special customisation. As a result, we are able to cover a broad range of areas such as resistance, TCR, VCR or tolerance values outside the standard ranges, specialised lead lengths and terminations, unique package sizes, and even the colour of components. Please have a look at the company directory on page 8 of this brochure for an indication of which manufacturers we can offer customisations for. If you require something that isn't there please contact us, we are up for a challenge.

Commercial Support

Our sales team will also assist with pricing and quotations, plus:

- Delivery options such as Kanban, scheduled orders, call-off orders and buffer stock agreements
- Multi-currency invoicing (GBP, USD, Euro)
- Single or scheduled deliveries within the UK, to Europe and overseas
- Ancillary services including tape & reeling (SMD, radial, axial), component preforming and barcoding

Quality Management System

Rhopoint Components is ISO 9001:2015 certified.

Full traceability back to the manufacturer as part of Rhopoint's own Certificate of Conformance system.

Verification by in-house testing to meet additional stringent requirements, where requested.

RoHS, REACH and Conflict Minerals compliance statements produced in partnership with product line manufacturers.

Many of our products can also be supplied to order with specific military and aerospace certifications.



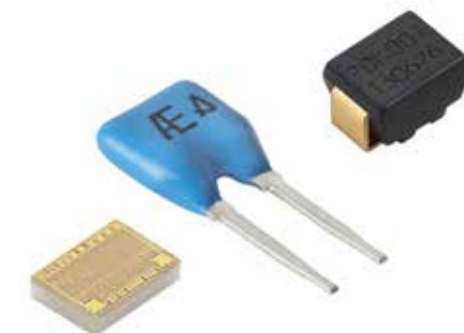
FS 695372



Ultra-high precision Bulk Metal® Foil resistors for current sensing and power applications, resistor networks and standard calibration resistors

- Selection of SMD and through-hole resistors and resistor networks
- Tolerance of $\pm 0.005\%$, typical TCR of $0.14\text{ppm}/^\circ\text{C}$ and excellent long-term stability of $5\text{ppm}/\text{year}$

Applications: Rhopoint Components helped design in Alpha resistors in a range of medical instrumentation such as modern MRI scanners, offering considerable space-saving compared to the traditional solutions.



High energy inrush current limiters and thermistor solutions for temperature measurement, compensation and control

- Inrush current limiters with a wide range of initial resistance levels and current carrying capabilities
- Standard and custom NTC & PTC thermistors and probe assemblies available

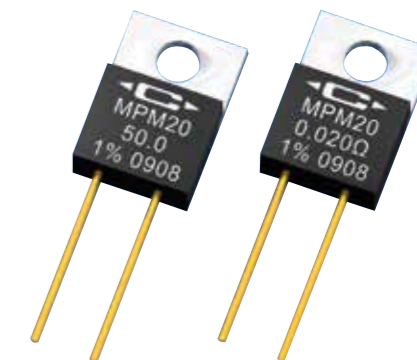
Applications: When a customer experienced an issue with an off-the-shelf component, Ametherm were able to offer a custom thermistor with extra-long leads and resin coating to cope with thermal shock and the corrosive environment in the pipes of cooled beverage storage equipment, regularly cleaned by flushing with hot chemicals.



Wide range of high performance, high stability film resistors including precision, low and high ohmic, high voltage, high temperature and non-inductive high power resistors

- Surface-mount, axial and radial through-hole precision resistor and resistor network packages
- Their own Micronox® and Tetrinox® film technologies offer very low TCR characteristics and excellent performance

Applications: Caddock's range of resistors with heat sinks have been used in CCTV security cameras to regulate ambient temperatures and prevent freezing of sensitive electronics as well as the camera lens over the winter months.



Semiconductor solutions for signal conditioning, power management and conversion designed for harsh environments and high temperatures of up to +225°C

- Standard and custom solutions of linear voltage regulators, DC-DC converters, gate & motor drivers, amplifiers and timers
- Automotive range offering capabilities beyond AEC-Q100 Grade 0

Applications: Cissoid components are used for SiC power devices in new energy vehicles.





Cynergy3 Components is a world leading manufacturer of switch and sensor products with developed knowledge & expertise across a range of different industries in the manufacturing, engineering, technology & supply chain sectors



- Industrial Level Sensors
- Reed Relays
- Liquid Level Sensors
- Liquid Flow Sensors
- Pressure Sensors
- Temperature Sensors
- Control & Instrumentation



- Alternative Energy
- Oil & Gas
- Process & Chemicals
- Food & Beverages
- HVAC
- Industrial
- Medical
- Military & Aerospace
- Security & Safety
- Communications
- Test & Measurement
- Utilities & Smart Grid



Cynergy3 Components Ltd. 7 Cobham Road, Ferndown Industrial Estate, Wimborne, Dorset, BH21 7PE, UK
 Tel. +44 (0) 1202897969 • Email. sales@cynergy3.com



High reliability small signal relay, reed switch and magnetic sensor products

- RedRock™ ultra-miniature TMR switches and sensors offering magnetic technology superior to traditional Hall effect
- Wide range of SMD and through-hole standard and custom options available

Applications: Coto's TMR sensors are popular with manufacturers of IoT devices, for applications such as enabling power on/off or sleep mode upon opening or closing the cover of the device.



Fully customisable solutions across the range of relays, switches and sensors, including ATEX/IECEx approved models

High voltage and RF reed relays

- Offering isolation of up to 15kV, made in the state-of-the-art manufacturing facility in the UK for over 40 years

Float and flow switches and sensors for liquid level management

- A variety of horizontal, vertical, cable-end and optical level sensors in a range of materials suitable for any liquid media utilising Cynergy3's own reed switch technology

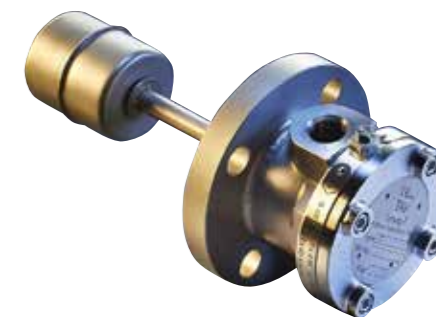
Pressure and temperature sensors

- A selection of industrial, hydrostatic, programmable and wireless sensors and a range of submersible dual level-temperature or level-pressure transducers

Other products

- Signal conditioners capable of handling a wide range of input and output signals
- Solenoid valves for use in liquids or gases

Application: The Cynergy3 float switches can be found in domestic appliances where it is important to know if the liquid level rises above or falls under a certain level, such as washing machines. The heavy-duty ATEX models are a popular choice for fuel tanks.



Easy to use, reliable data acquisition modules for data logging and process monitoring and control applications

- Range of single and multi-channel, digital and analogue modules supporting a wide selection of inputs
- Modular solution – mix and match various modules to build a custom data acquisition system

Applications: DGH modules are popular for remote monitoring, batch processing, product testing and other applications.



Struggling with power converter thermal design?
High Temp, SiC, Gate Drivers

Take a rest!
 & more ...



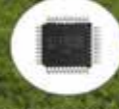
125°C (Ta)
 SiC MOSFET
 Gate Driver



SiC MOSFET & IGBT
 Power Modules



Automotive
 Adjustable
 Voltage
 Regulator



SiC MOSFET
 Gate Driver
 Chipset



Automotive
 Configurable
 Logic Gates



Rated > 125°C



High Voltage



High Current



Safe & Reliable

CISSOID
 www.cissoid.com



**YOU CAN'T
 COPY
 EXPERIENCE**



PRECISION AND POWER RESISTORS



We invented the MANGANIN® resistance alloy 125 years ago. To this day, we produce the MANGANIN® used in our resistors by ourselves.

material of Cu-MANGANIN®-Cu). We were the first to use this method to manufacture resistors. And for a long time, we were the only ones, too.

advancement of our BVx resistors. For years, we have also been leveraging this experience to develop successful industrial applications.

More than 20 years ago, we patented the use of electron-beam welding for the production of resistors, laying the foundation for the ISA-WELD® manufacturing technology (composite

Today, we have a wealth of expertise based on countless projects on behalf of our customers. The automotive industry's high standards were the driving force behind the continuous

The result: resistors that provide unbeatable excellent performance, outstanding thermal characteristics and impressive value for money.

Isabellenhütte Heusler GmbH & Co. KG · Eibacher Weg 3-5 · 35683 Dillenburg, Germany
 Phone +49 (0) 2771 934-0 · Fax +49 (0) 2771 23030 · sales.components@isabellenhuetten.de · www.isabellenhuetten.de



High precision, high stability wirewound resistors – traditional technology in the best quality

- Axial and radial through-hole packages
- Standard and custom resistance values with low MOQs available

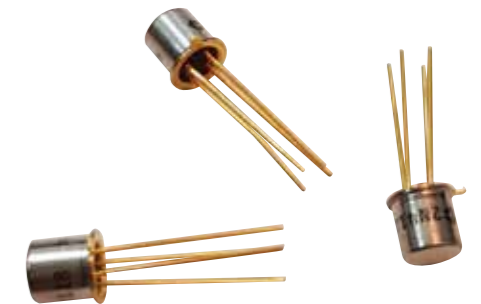
Applications: General Resistance resistors are a popular choice with manufacturers of hi-fi systems and other audio equipment, but they are also currently designed into battery management systems for electric vehicles.



Standard and Custom Discrete Junction Field Effect Transistors (JFETs)

- Wide range of standard and customised JFET options include high volume, low noise, radiation tolerant, matched pairs and arrays
- SMD, die and wafer options possible

Applications: InterFET JFETs are a good option for audio applications, such as for transistors in condenser microphones.



Specialist in low ohmic, precision and power resistor technology, further utilised in the range of precision measurement modules. Their own precision alloys are also available as raw materials

Precision and power resistors

- SMD and through-hole resistors in various packages and designs including 4-terminal options for current sensing offering excellent characteristics

Precision measurement

- Plug-and-play current and voltage measurement modules in compact packages, popular for energy storage applications from automotive (EVs) to renewable energy industries

Precision alloys

- Range of non-ferrous precision alloys available in the form of wire (including flat, stranded and enamelled), ribbons or rods for temperature and current measurement, heat generation as well as soldering

Applications: Isabellenhütte resistors are most popular in the automotive industry, whether traditional, EV or motorsport. Their PW marked components are 'EEE' certified for space use in European Space Agency projects.



Range of electrolytic and ceramic capacitors for general purpose and specialist applications

- Available in a variety of radial, axial, snap-in/screw-in and surface mount packages
- High reliability, low leakage current, non-polarised and multi-layer (MLC) options available

Application: Jackcon's high voltage capacitors are a popular choice for use in power supplies.

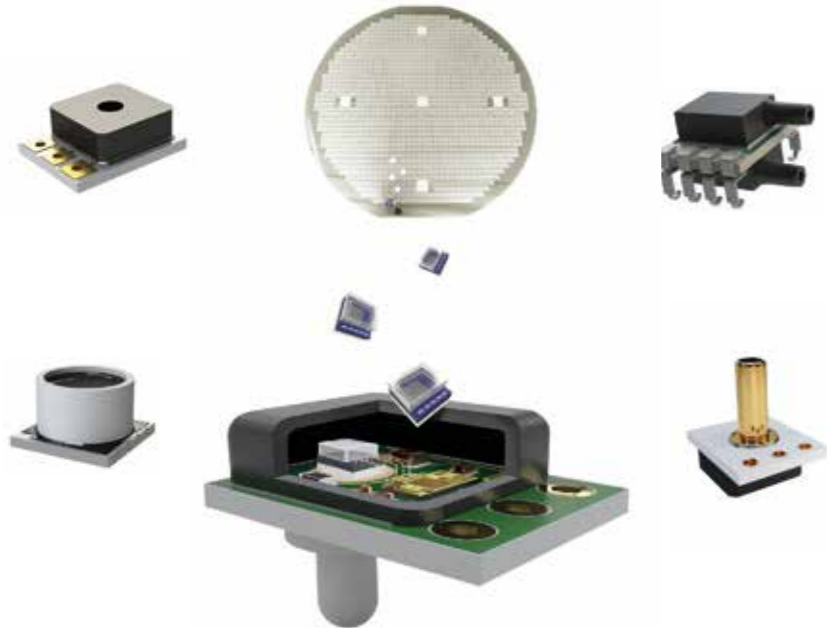


	Current sensing/Low resistance resistors	Resistor networks/Voltage dividers	Non-magnetic resistors	Power resistors and shunts	Precision/Ultra precision resistors	Standard resistors	Thermosensitive resistors	Attenuators	Capacitors	Digital isolators	Inrush current limiters	JFETs	Relays	Semiconductors	Switches	Terminators and power splitters	Thermistors
Alpha Electronics	✓	✓		✓	✓	✓	✓										
Ametherm											✓						✓
Caddock Electronics	✓	✓		✓	✓												
Cissoid														✓			
Coto Technology													✓		✓		
Cynergy3													✓		✓		
DGH																	
General Resistance					✓												
InterFET Corporation												✓					
Isabellenhütte Heusler	✓			✓		✓											
Jackcon									✓								
Lord Sensing Stellar Technology																	
Merit Sensor																	
NVE Corporation										✓				✓			
Ohmcraft		✓			✓												
Paine by Emerson																	
Powertron	✓			✓													
RARA				✓													
RdF																	
Rhopoint Instruments																	
Riedon	✓			✓	✓												
SRT Microcéramique									✓								
SRT Resistor Technology			✓		✓												
SUSUMU	✓	✓	✓	✓	✓			✓								✓	
Vishay Foil Resistors	✓	✓			✓												
Weidmüller																	
Electronic components																	

	Load cells	Magnetic sensors - TMR	Magnetic sensors - GMR	Pressure sensors	Flow and float switches	Temperature sensors and RTDs	Connectors	Data acquisition modules	Current/Voltage measurement modules	Resistance meters	Precision alloys	Signal conditioners	Solenoid valves	Automotive	Aerospace and military	Customisable product	High temperature	High voltage	
																✓	✓		Alpha Electronics
																✓	✓		Ametherm
															✓	✓	✓		Caddock Electronics
															✓	✓	✓		Cissoid
		✓														✓			Coto Technology
				✓	✓	✓						✓	✓			✓	✓	✓	Cynergy3
								✓											DGH
																✓			General Resistance
																✓			InterFET Corporation
								✓		✓				✓	✓	✓	✓		Isabellenhütte Heusler
																		✓	Jackcon
	✓															✓			Lord Sensing Stellar Technology
				✓										✓	✓	✓			Merit Sensor
		✓	✓													✓			NVE Corporation
				✓											✓	✓	✓		Ohmcraft
															✓	✓	✓		Paine by Emerson
																✓			Powertron
																✓			RARA
						✓									✓	✓	✓		RdF
										✓									Rhopoint Instruments
																✓	✓	✓	Riedon
															✓	✓	✓	✓	SRT Microcéramique
																✓	✓	✓	SRT Resistor Technology
														✓		✓	✓		SUSUMU
															✓	✓	✓		Vishay Foil Resistors
							✓												Weidmüller
Sensors							Other products							Special applications					

MEMS PIEZORESISTIVE PRESSURE SENSORS

AEROSPACE AUTOMOTIVE CONSUMER INDUSTRIAL MEDICAL



ABOUT US

- We design and manufacture piezoresistive pressure sensors (a type of MEMS).
- Our sensors measure pressure from 0 to 1000 bar in sensing environments from -40 to 150 °C.
- Our sensors are available in absolute, gage, vacuum, and differential configurations.
- We can design customized products to meet the specific needs of our customers (e.g., sensitivity, resistance, calibration).
- We operate a wafer fab on site, which allows us to ensure high quality. All of our products are RoHS, REACH, and AEC-Q100 compliant.
- We are committed to quality and customer service.

sales@meritsensor.com



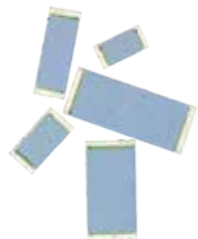
MERIT SENSOR™

www.meritsensor.com

Ohmcraft is a leader in thick film, high voltage, high precision resistor design and manufacturing. Ohmcraft utilizes a proprietary Micropen electronic printing system to “print” precise, narrow, serpentine resistor traces producing higher performance resistors over a wider range on a smaller surface area than is possible with conventional film resistor technology.

Ohmcraft Advantages:

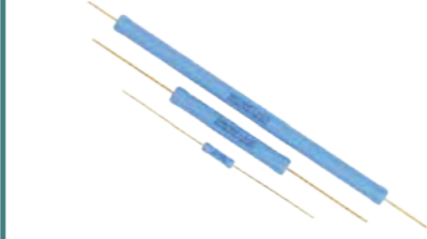
- Ultra high voltage ratings
- Exceptional stability
- Low TCR
- Low VCR
- Low current noise
- Tight absolute & ratio tolerances
- Excellent pulse handling
- Custom Configurations



Surface Mount



Radial



Axial

Custom

Ohmcraft a division of Micropen Technologies Corporation
Address: 93 Paper Mill Street, Honeoye Falls, NY 14472

Phone: (585) 624-2610 • Fax: (585) 624-2692
Email: sales@ohmcraft.com



ohmcraft®
A DIVISION OF MICROPEN TECHNOLOGIES

www.ohmcraft.com



High capacity, high accuracy load cells and torque sensors for a broad range of applications and industries

- Compact and general-purpose load cells in a range of packages including beam, canister, miniature and pancake
- Hazardous area certified and custom options available

Applications: Lord's high capacity miniature load cells are being used in heavy duty conveyor belts used in the mining industry for carrying tons of broken up ore.



High yield piezoresistive pressure sensor solutions for aerospace, automotive, industrial and medical industries

- Through-hole and PCB mountable, die/chips, uncompensated and compensated packages available
- Customisations available including sensitivity, bridge configurations, pressure ranges and packages

Applications: Merit pressure gauges are used in scuba-oxygen and depth measurement for fishing or altitude measurement for hiking equipment.



High performance digital isolators, GMR and TMR magnetic sensors and IC's

- Wide range of analog and digital, angle, tooth gear, smart and other sensor options, available with evaluation boards
- Active and passive digital input isolators offer the ideal alternative to optocouplers

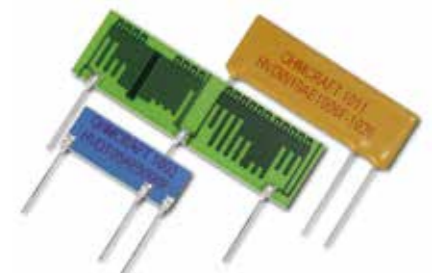
Applications: NVE's AD (digital) and AA (analog) magnetic sensors are a popular choice for Arduino boards for operating LED light and other applications. Their tooth-gear sensor, on the other hand, works as a highly precise rotation meter.



High performance, high voltage and high ohmic thick film resistors, resistor networks and dividers, offering some of the highest voltage ratings on the market

- SMD and through-hole packages available with various size options. Standard and military grade parts are available
- Utilises Micropenning® to offer highly precise and stable resistors

Applications: Ohmcraft's technology is ideal for creating custom resistor networks for power supply and instrumentation applications such as mass spectrometry, signal generators etc.



Paine™ Measurement Solutions

Emerson's Paine™ portfolio of high pressure and temperature sensors provide solutions to critical measurement challenges in the harshest environments for the best performance, accuracy and reliability.

PAINE™



Rosemount Specialty Products | 5545 Nelpar Drive, East Wenatchee, WA 98802, USA | Telephone: (509) 881-2100 | Fax: (509) 881-2115 | Email: Paine.Products@emerson.com
www.emerson.com/paine



Paine™ extreme environment pressure and temperature sensors offering peace of mind where accuracy and reliability are the key requirements

- High pressure, high temperature sensors designed for the measurement challenges in the harshest of environments
- Slimline, miniature and custom options available

Applications: Paine pressure sensors are used in blowout preventers on the oil and gas wellbores, preventing uncontrolled leakage of crude oil into the water in case the drilling crew loses control of the oil reservoir, ensuring safety for the environment, crew and any nearby rigs.



Precision high power and low ohmic precision foil resistors, including 4-terminal modules

- Foil Technology offers precision, high power, low TCR and exceptional long-term stability
- Thick film technology offers a wide range of higher power resistors in various package types

Applications: Powertron's GST 4020 series resistor has been successfully used for multimeter and insulation test equipment calibration verification up to 4000V.



State-of-the-art high-power metal clad resistors

- Specialise in a wide variety of high power, metal clad, wirewound resistors and resistor assemblies, including custom options
- Inductive and non-inductive designs, UL approved and IP65 rated products available in various package types

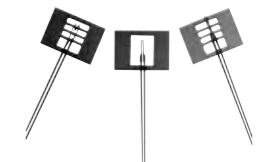
Applications: RARA breaking resistors are popular in the renewable energy industry, for example in wind turbines. They also have their use for material handling multi-axial robots.



Specialists in the production and development of innovative RTDs, thermocouples and heat flux sensors

- Various surface mountable, insertion, thread-in and immersion temperature sensors, including custom options
- Optimal choice for demanding aerospace, military, nuclear, OEM and industrial applications

Applications: RdF temperature sensors are used in motorsport for accurately detecting fast temperature changes where this information is crucial for winning the race.



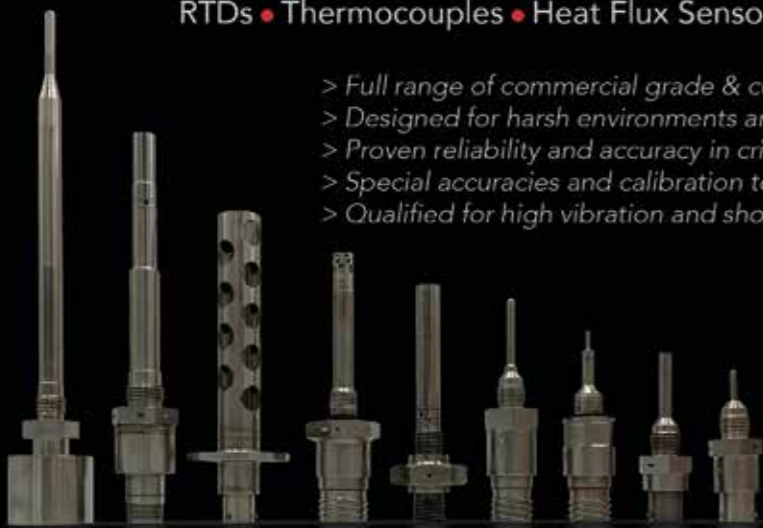
RdF Making sense of sensing temperature since 1955.
www.rdfcorp.com sales@rdfcorp.com

Aerospace Defense Energy R&D Process Control

Design. Quality. Manufacture.

RTDs • Thermocouples • Heat Flux Sensors • Calorimeters • Radiometers

- > Full range of commercial grade & custom sensors
- > Designed for harsh environments and extreme temperatures
- > Proven reliability and accuracy in critical applications
- > Special accuracies and calibration to deep cryogenic
- > Qualified for high vibration and shock use



AS 9100
 ISO 9001
 REGISTERED COMPANY



Portable, low resistance digital meter M210

- Made in the UK by a member of the Rhopoint group
- Replacement 4-terminal spring clip connector test leads and probe and clip connector leads available

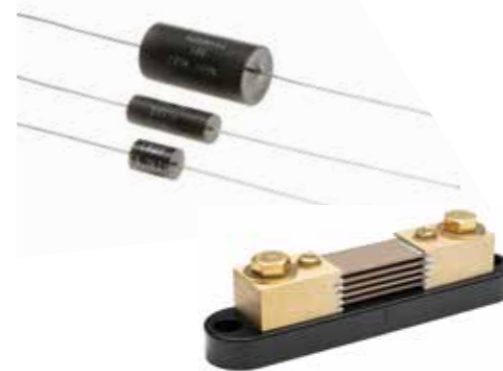
Applications: Wherever reliable measurement of low resistances is required on-the-go, such as for relay, switch and connector contacts, ring circuit testing and network cabling.



Specialist high power, wirewound and precision resistors and shunts for a range of industrial applications, including high temperature, bare metal element models and custom options

- Precision current and DC current base mounted shunts up to 1200A available
- Excellent high pulse, high temperature resistors in a wide range of tight TCR and tolerance options

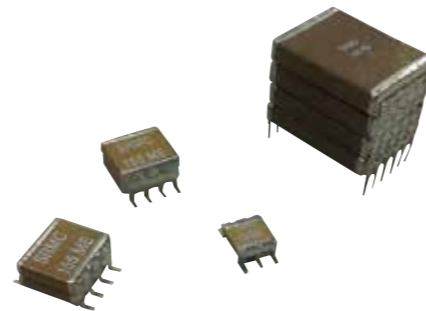
Applications: Riedon's UB-3C series is currently used in the Tesla Powerwall – a top-of-the-range energy storage solution, thanks to its robust construction and outstanding performance.



High quality ceramic capacitors and electromagnetic filters

- Wide range of ceramic capacitors including high and low voltage, high and low frequency, high temperature, low inductance, non-magnetic and other solutions
- Specialists in manufacturing for critical industries such as defence, medical, aeronautics and oil & gas

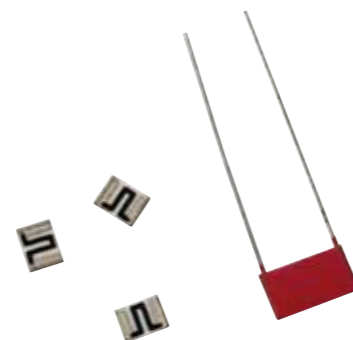
Applications: SRT Micro Céramique's high voltage capacitors are a popular choice for industries such as medical, requiring non-standard terminations offered by SRT as a value-added service.



High voltage, high ohmic, high temperature thick film resistors, custom resistor networks and voltage dividers

- High ohmic resistors, up to 10TΩ, and high voltage resistors in both SMD and through-hole packages
- High temperature variants available with operating temperatures up to +300°C

Applications: SRT's non-magnetic range of resistors is a popular choice for applications where strong magnetic fields are present, such as magnetoencephalography (brain scanners).



Ultra-high precision, thin film SMD resistors and resistor networks including high temperature models, and low ohmic resistors for current sensing applications

- Wide range of resistance values and applications
- Automotive approved, high frequency RF components and sample kits also available

Applications: Susumu RG and KRL resistor ranges are a popular choice in the automotive industry for use within the car and motorbike LED light units.



Ultra-high precision and stability Bulk Metal® Foil resistors in a wide range of standard and custom resistance values, voltage dividers and networks

- Excellent characteristics: very low TCR and exceptional long-term stability even in extreme temperatures
- New generation Z1 foil technology with a TCR to 0.05ppm/°C (0 to +60°C), stability of 0.0025% and tolerance as low as 0.005%

Applications: The Vishay Foil Resistors' S and VAR series resistors are used in the high-end audio equipment to achieve improvement in the "dark background", allowing music to be heard as originally mastered.



OMNIMATE® PCB terminals and connectors among the highest quality on the market, with a focus on industrial applications

- OMNIMATE® ranges of Signal, Data and Power connectors
- Modular design with endless options supported by a service offering design help or matching an equivalent connector

Applications: With over 35000 variations available, Weidmüller can offer a connector solution for virtually every PCB, regardless of application.



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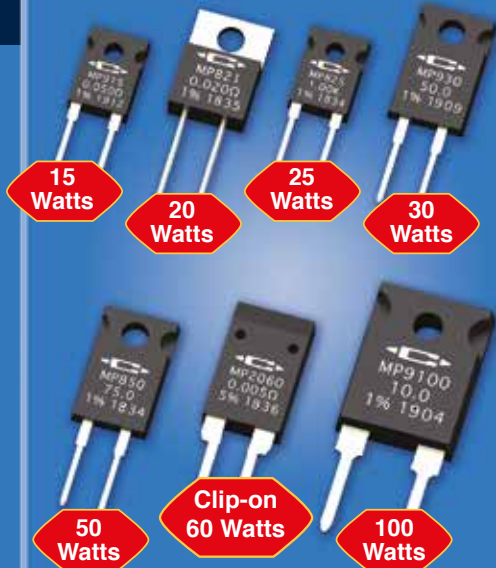
www.rhopointcomponents.com

Power Film Resistors

Caddock's Power Film Resistor Technology brings unique power resistor packaging options to the power system designer. The non-inductive designs of these power resistor products provide outstanding low reactance for power switching systems, high frequency circuits and other reactance sensitive applications.

Heat Sink Mountable *with Non-Inductive Design*

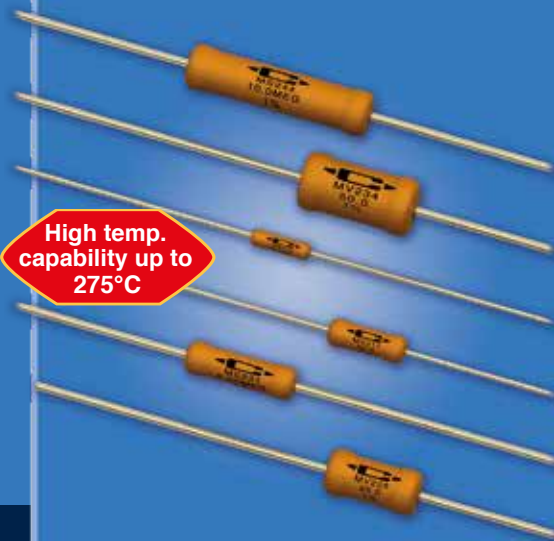
Power rating is based on a +25°C case temperature. The thermal mounting issues are the same as with power semiconductors.



Resistor Style	Model No.	Power Rating at +25°C Case Temp.	Resistance Range	Comments
TO-126 Style Package	MP915	15 Watts	0.02 Ω to 1K	Low Cost Design Standard Resistance Values
	MP825	25 Watts	0.02 Ω to 10K	Copper Heat Sink Integral in the Molded Package
TO-220 with Metal Mounting Tab	MP820	20 Watts	10 Ω to 10K	Metal Mounting Tab
	MP821	20 Watts	0.02 Ω to 9.99 Ω	Metal Mounting Tab
TO-220 Style Package	MP916	16 Watts	0.01 Ω to 0.019 Ω	Low Cost Design Low Resistance Range
	MP925	25 Watts 500V max.	5K to 100K	Low Cost Design Standard Resistance Range
	MP930	30 Watts	0.02 Ω to 4.99K	Low Cost Design Extended Resistance Range
	MP850	50 Watts	0.2 Ω to 10K	Copper Heat Sink Integral in the Molded Package
TO-220 Style Package	MP2060	60 Watts*	0.005 Ω to 1K	Clip Mount, Values to 0.005Ω *60 amps max. for 0.015Ω and below
TO-247 Style Package	MP9100	100 Watts	0.05 Ω to 100 Ω	Highest Power Rating

Axial Lead - High Power *with Non-Inductive Design*

Power rating is based on +25°C ambient, derated to zero at +275°C.



Resistor Style	Caddock Type	Power Rating	Resistance Range	Comments
Axial Lead	Type MS 18 Models to choose from	0.5 Watt up to 22 Watts	20 Ω up to 30 Meg	These non-inductive resistors are about as inductive as a straight piece of wire the length of the resistor body.
Axial Lead Low Resistance	Type MV 5 Models to choose from	1.5 Watts up to 10 Watts	0.1 Ω up to 20 Ω	Low Resistance with EXTREMELY low inductance. Best price at 5% and 10% tolerance (1% available).

High Performance
Film Resistors
from

CADDOCK
ELECTRONICS, INCORPORATED

Caddock Electronics, Inc.
17271 N. Umpqua Hwy.
Roseburg, Oregon 97470 USA
www.caddock.com
Tel: (+1) 541-496-0700
email: caddock@caddock.com

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