

Introduction of C&B RESI & Key Products

C&B Electronics was established in 2006 and located in Shenzhen with four subsidiaries engaged in R&D and manufacture of high end resistors, high precision current sensor, high precision alloy and electron beam welding equipment.

- Precision Resistor
 - Alloy Current Sensing Resistor
 - High-Voltage Resistor
 - Shunt-Based Current Sensor
 - Shunt Current Sensing Module
 - TO Package Non-Inductive High-Power Resistor
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Introduction

Long-term stability is a very important parameter, because tight tolerance is meaningless without stability. The long-term stability of resistors is related to time, power, and temperature. The higher the loaded power, the higher the temperature, and the longer the time, the greater the change of resistance. Resi precision resistors have excellent long-term stability. Larger dimensions, higher rated power, higher resistance, and lower TCR can be customized.

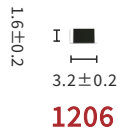
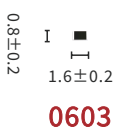


Foil resistor

PZFR

Resistance: 5Ω-125KΩ
Rated Power: 0.1W-0.75W

Tolerance: ±0.01%
TCR: ±2ppm/°C

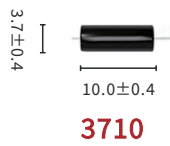
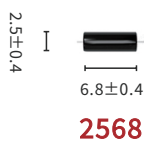


Metal film resistor

MMFR

Resistance: 10Ω-1MΩ
Rated Power: 0.25W-1W

Tolerance: ±0.05%
TCR: ±5ppm/°C

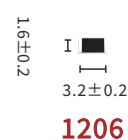
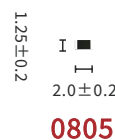
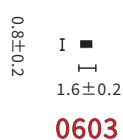
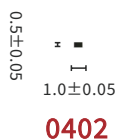


Thin film resistor

PTFR

Resistance: 10Ω-5.1MΩ
Rated Power: 0.06W-0.25W

Tolerance: ±0.01%
TCR: ±5ppm/°C



Alloy Current Sensing Resistor

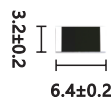
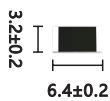


Introduction

C&B Resi alloy current sensing resistors and shunts are made of precision low-TCR alloys which are independently developed and produced. After precision processing, alloys are welded by a specialized electron beam welding equipment independently designed and manufactured by C&B Electronics. Due to the improvement of welding quality, the thermal EMF of the product has been significantly reduced and the stability of the product has been improved. The products have achieved independent control, stable quality, and timely delivery from raw materials, core equipment, to core processes.

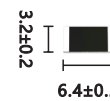
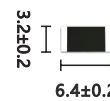


AEC-Q200



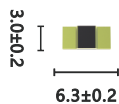
PCSR2512

Resistance: 10mΩ-100mΩ
 Rated Power: 1W
 Tolerance: ±0.1%
 TCR: ≤±15ppm/°C
 (-55°C~+125°C, +20°C Ref)
 Load Life: ±0.2%



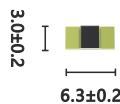
PCSK2512

Resistance: 10mΩ-100mΩ
 Rated Power: 1W
 Tolerance: ±0.5%
 TCR: ≤±25ppm/°C
 (-55°C~+125°C, +20°C Ref)
 Load Life: ±0.2%



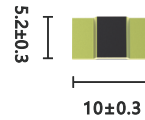
EBWK2512

Resistance: 2mΩ-3mΩ
 Rated Power: 4W-5W
 Tolerance: ±0.5%
 TCR: ≤±100ppm/°C
 (-55~+170°C, +20°C Ref)
 Load Life: ±0.5%



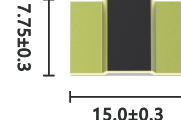
SEWF2512

Resistance: 3mΩ
 Rated Power: 4W
 Tolerance: ±0.5%
 TCR: ≤±25ppm/°C
 (-55~+170°C, +20°C Ref)
 Load Life: ±0.5%



SEWF3920

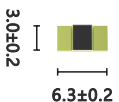
Resistance: 1mΩ-3mΩ
 Rated Power: 5W-8W
 Tolerance: ±0.5%
 TCR: ≤±25ppm/°C
 (-55~+170°C, +20°C Ref)
 Load Life: ±0.5%



SEWF5930

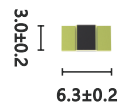
Resistance: 1mΩ
 Rated Power: 10W
 Tolerance: ±0.5%
 TCR: ≤±25ppm/°C
 (-55~+170°C, +20°C Ref)
 Load Life: ±0.5%

Trimming Free



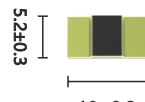
EBWM2512

Resistance: 0.5mΩ-1mΩ
 Rated Power: 6W
 Tolerance: ±0.5%
 TCR: ≤±200ppm/°C
 (-55~+170°C, +20°C Ref)
 Load Life: ±0.5%



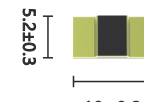
PEWF2512

Resistance: 2mΩ
 Rated Power: 5W
 Tolerance: ±0.5%
 TCR: ≤±50ppm/°C
 (-55~+170°C, +20°C Ref)
 Load Life: ±0.5%



PEWM3920

Resistance: 0.5mΩ-1mΩ
 Rated Power: 8W-9W
 Tolerance: ±0.5%
 TCR: ≤±100ppm/°C
 (+20~+170°C, +20°C Ref)
 Load Life: ±0.5%



PEWK3920

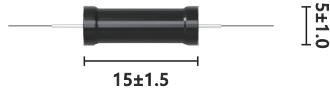
Resistance: 2mΩ-3mΩ
 Rated Power: 5W-6W
 Tolerance: ±0.5%
 TCR: ≤±50ppm/°C
 (-55~+170°C, +20°C Ref)
 Load Life: ±0.5%

Introduction

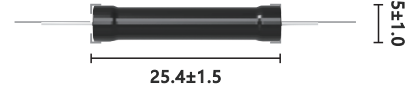
To produce a high-voltage resistor, we must choose suitable coating materials, which balance heat dissipation capacity and insulation performance. Generally speaking, the heat dissipation capacity of silicone resin is better than that of epoxy resin, but the insulating capacity is not as good as epoxy resin. RESI selected a high-level epoxy resin coating material to produce our high-voltage resistor that is good at both insulation and heat dissipation capabilities. There is no air bubbles on the surface after the encapsulation, and the insulation ability is significantly better than silicone resin and other epoxy resins. The heat dissipation capacity is also better than other types of epoxy resin.



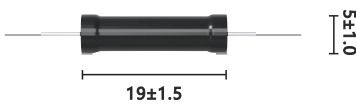
HVLR1505
0.7W 2.5KV



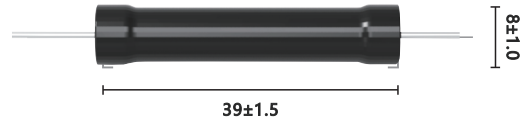
HVLR2505
1.2W 5.5KV



HVLR1905
1W 3.5KV



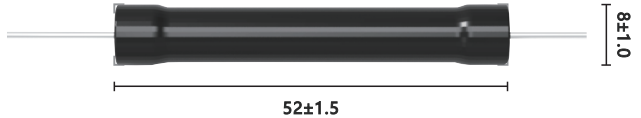
HVLR3908
3W 10KV



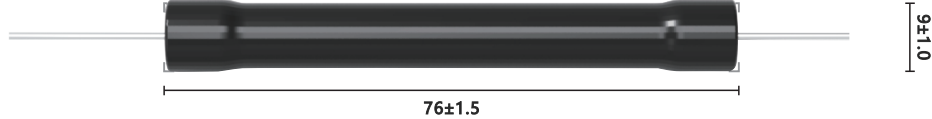
HVLR2408
2W 5.5KV



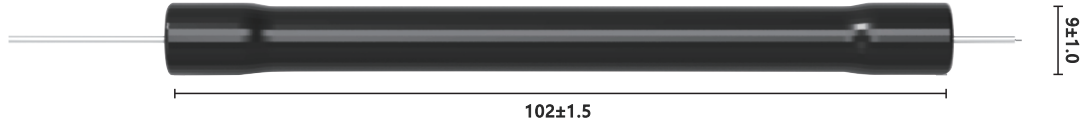
HVLR5208
5W 15KV



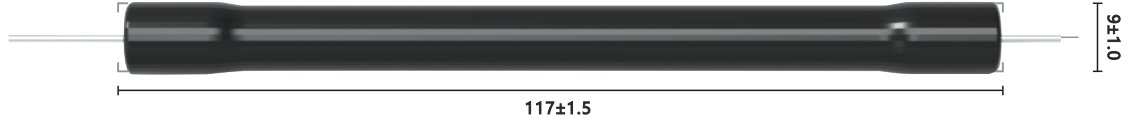
HVLR7609
7.5W 22.5KV



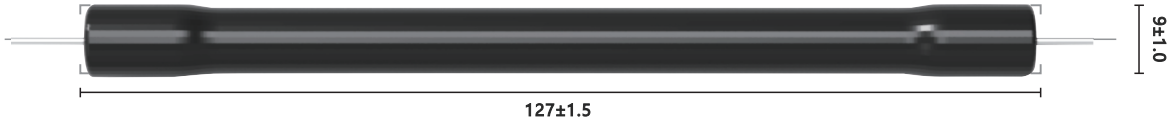
HVLR1029
10W 32KV



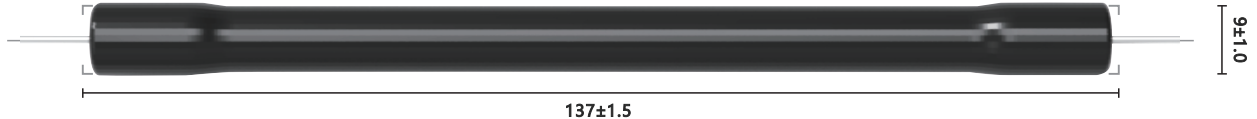
HVLR1179
11W 35KV



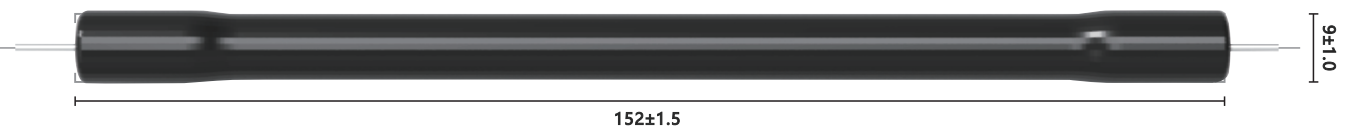
HVLR1279
12W 40KV



HVLR1379
13W 45KV



HVLR1529
15W 48KV



Shunt-Based Current Sensor

Introduction

Resi current sensor is an automotive grade current sensing module that can measure bidirectional DC current and is high accuracy, low power consumption, wide operating temperature range, excellent response speed, temperature stability, and anti-interference ability. This sensor is designed based on a low-TCR shunt and has functions such as electrostatic discharge protection, temperature compensation, and current calibration. The sensor achieves complete high and low voltage isolation, which can be applied to the main positive or negative electrodes of the battery system.



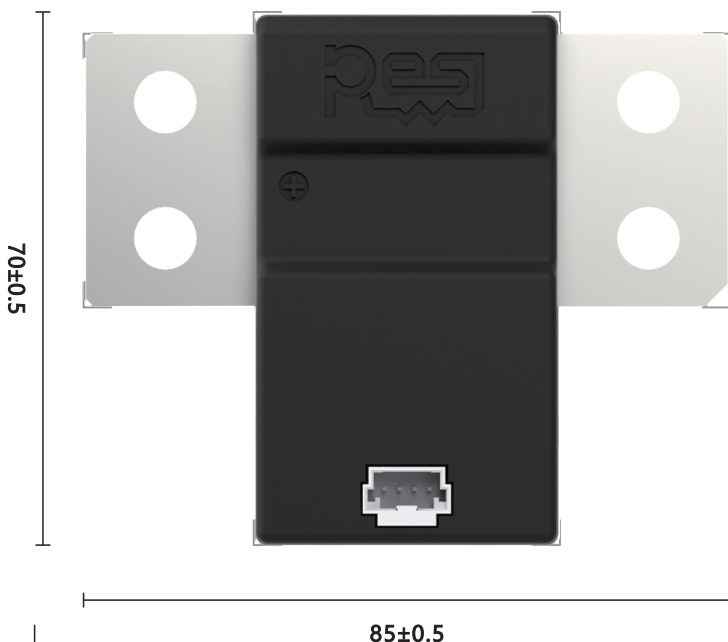
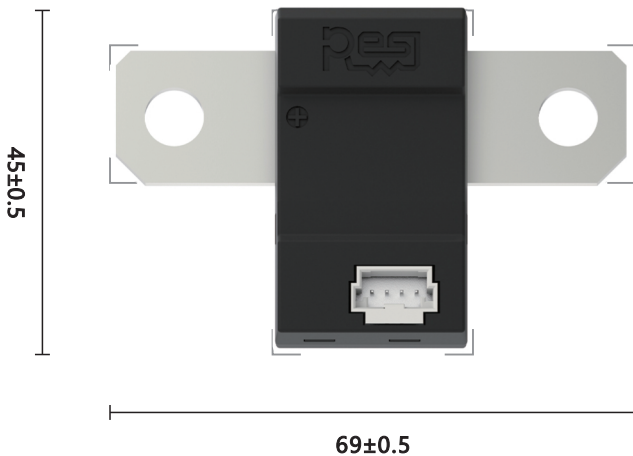

AEC-Q200

CB-350

- Current Sensing:
 - Measurement Range: -8000A~+8000A
 - Continuous Operating Range: -350A~+350A
 - 20A~350A or -350A~-20A
 - Measurement Accuracy: $\pm 0.5\%$
 - -350A~+350A Resolution: 10mA
- Temperature Sensing:
 - Measurement Range: -50°C~+150°C
 - Measurement Error: $\pm 3^\circ\text{C}$
 - Resolution: 0.1°C
- Supply Voltage: 6V~18V
- Operating Temperature: -40°C~+105°C
- Power Consumption: $\leq 216\text{mW}$ @12VDC
- Ingress Protection: 3000VAC

CB-600

- Current Sensing:
 - Measurement Range: -20000A~+20000A
 - Continuous Operating Range: -600A~+600A
 - 50A~600A or -600A~-50A
 - Measurement Accuracy: $\pm 0.1\%$
 - -600A~+600A Resolution: 1mA
- Temperature Sensing:
 - Measurement Range: -50°C~+150°C
 - Measurement Error: $\pm 3^\circ\text{C}$
 - Resolution: 0.1°C
- Supply Voltage: 6V~18V
- Operating Temperature: -40°C~+105°C
- Power Consumption: $\leq 384\text{mW}$ @12VDC
- Ingress Protection: 3000VAC



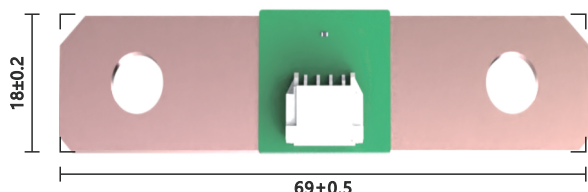
Shunt Current Sensing Module

Introduction

The precision Mn-Cu alloy shunt for automotive applications has the characteristics of low thermal RMF and low inductance. It adopts a four-terminal Kelvin connection, is processed by electron beam welding. It achieves high-precision Trimming Free through exclusive alloy material heat treatment process and high-quality welding process. It has rich structures of voltage output: PIN, M3 hole, standard type, and standard nickel plated type.



This module is based on a low-TCR shunt, which is welded with a PCBA and can be installed on the tested circuit through bolts. It collects bus current and shunt temperature, and sends the measured signal to the signal processing side of the user-defined module. Customization is available according to the specific technical requirements.



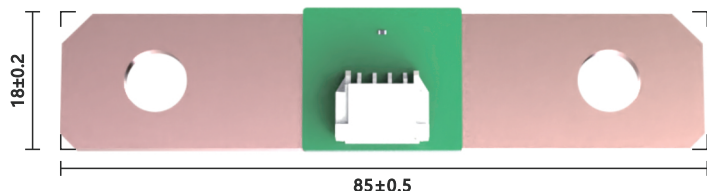
PCBS6918

Resistance: 100μΩ
Tolerance: ±5%
Operating Temperature: -40°C~ +105°C
Continuous Operating Current: ±350A



ARCS6918

Resistance: 50μΩ, 100μΩ
TCR: ±50ppm/°C
Output Voltage: 35mV, 50mV
Rated Current: 500A, 700A



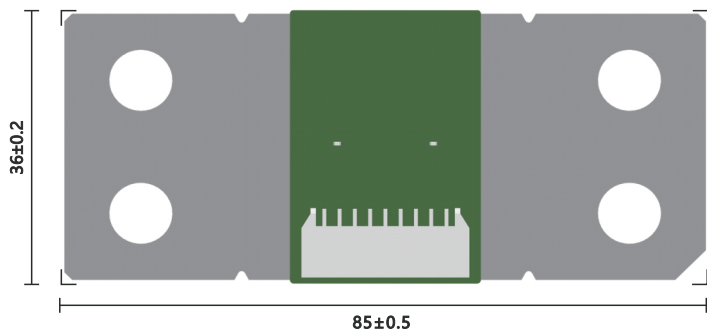
PCBS8518

Resistance: 50μΩ
Tolerance: ±5%
Operating Temperature: -40°C~ +105°C
Continuous Operating Current: ±350A



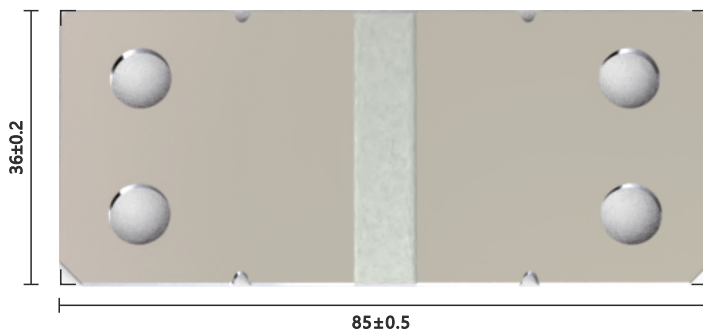
ARCS8518

Resistance: 50μΩ, 100μΩ
TCR: ±50ppm/°C
Output Voltage: 40mV, 60mV
Rated Current: 600A, 840A



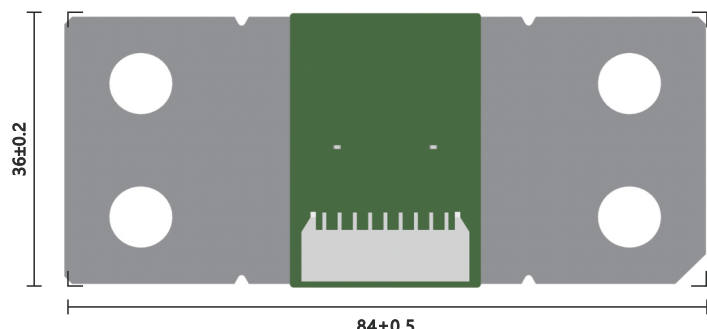
PCBS8536

Resistance: 50μΩ
Tolerance: ±5%
Operating Temperature: -40°C~ +105°C
Continuous Operating Current: ±600A



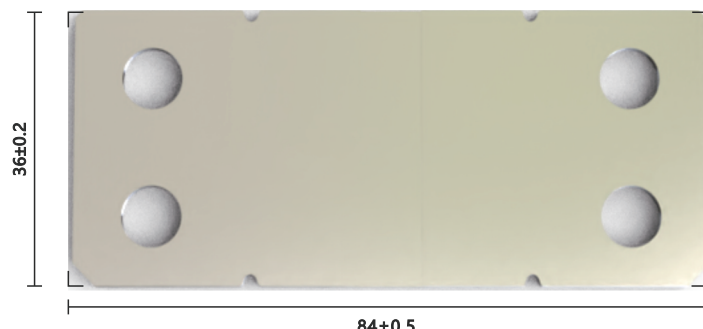
ARCS8536

Resistance: 25μΩ, 50μΩ
TCR: ±50ppm/°C
Output Voltage: 50mV
Rated Current: 1000A, 1410A



PCBS8436

Resistance: 25μΩ
Tolerance: ±5%
Operating Temperature: -40°C~ +105°C
Continuous Operating Current: ±800A



ARCS8436

Resistance: 25μΩ
TCR: ±150ppm/°C
Output Voltage: 50mV
Rated Current: 1410A

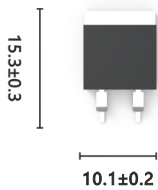
Non-Inductive High-Power Resistor

Introduction

The TO package non-inductive high-power resistor adopts a heat dissipation flange at the bottom, increasing its heat dissipation to balance the thermal characteristics of the circuit. It has excellent heat dissipation effect, long-term stability, low TCR, low thermal resistance, low current noise, etc., achieving wide application range. It is usually designed for high-frequency transmission circuits in SMPS, also commonly used for voltage regulation and low energy pulse loads. The products have achieved independent control, stable quality, and timely delivery from raw materials, core equipment, to core processes.

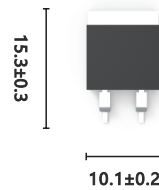


TPAN0263



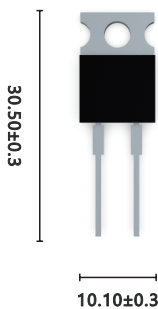
Size: TO-263
Resistance: 0.5Ω~10KΩ
Rated Power: 50W
Tolerance: ±0.5%
TCR: ±100ppm/°C
Max. Operating Voltage: 500V
Thermal Resistance: 2.1°C/W

TPAL0263



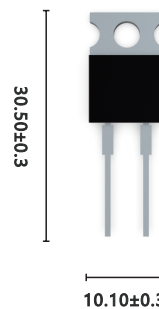
Size: TO-263
Resistance: 0.5Ω~10KΩ
Rated Power: 35W
Tolerance: ±0.5%
TCR: ±100ppm/°C
Max. Operating Voltage: 500V
Thermal Resistance: 3°C/W

TPAN0220



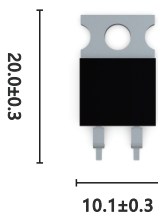
Size: TO-220
Resistance: 0.5Ω~10KΩ
Rated Power: 50W
Tolerance: ±0.5%
TCR: ±100ppm/°C
Max. Operating Voltage: 500V
Thermal Resistance: 2.1°C/W

TPAL0220



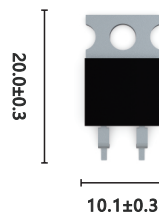
Size: TO-220
Resistance: 0.5Ω~10KΩ
Rated Power: 35W
Tolerance: ±0.5%
TCR: ±100ppm/°C
Max. Operating Voltage: 500V
Thermal Resistance: 3°C/W

TPAN220S



Size: TO-220
Resistance: 0.5Ω~10KΩ
Rated Power: 50W
Tolerance: ±0.5%
TCR: ±100ppm/°C
Max. Operating Voltage: 500V
Thermal Resistance: 2.1°C/W

TPAL220S



Size: TO-220
Resistance: 0.5Ω~10KΩ
Rated Power: 35W
Tolerance: ±0.5%
TCR: ±100ppm/°C
Max. Operating Voltage: 500V
Thermal Resistance: 3°C/W



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