Automotive Grade Manganese Copper Alloy Shunt Resistor
Applied to high current, with low thermal EMF and current coefficient

Introduction

The ARCS series which targets auto motive market can cover from hundreds to thousands of amperes.Duetospecialalloymaterials,the ARCS series has good long-term stabilityandis capable to withstand pulse current several times, which is higher than the rated current.

Shunt resistance value and surface temperature will keep changing when loaded. The factors that cause the change in resistance include TCR and dimensional change caused by thermal expansion, etc. Shunt resistancetendsto be stable when self- heating and heat dissipation reachdynamicbalance,buthigh current coefficient will cause the changeof shunt resistance greater than nominal tolerance. The special heat treatment process of the ARCSseriesmakeitalowcurrentcoefficientwithverygoodcompensationcharacteristics.

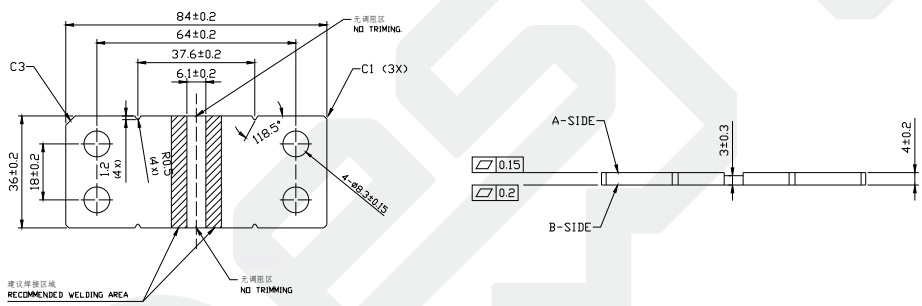
Becausethere is always a distance betweenthe voltage sampling point andthe resistor heating center,temperature difference is appeared,so a lower thermal EMF Is particularly important.The ARCS series has thermal EMF of less than 0.5μV/℃ to copper, and has little effect on the voltage output of the millivolt level. The flat structure of the ARCS series makes the inductance less than 3nH, which also performs perfect at high frequency applications.

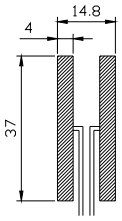
AEC-Q200 qualified 3D Model

Application

- Battery Management System
- Current Sensing
- Frequency Converter
- UPS
- Motor Control
- Electronic LoadEquipment

Dimensions (Unit: mm)





Recommended Solder Pad

Specifications

Model	Tolerance	Resistance	TCR	Rated Current	Current Coefficient*	Rated Power	Structure	Weight
ARCS8436JL025S4	±5%	25μΩ	150ppm/℃(+20℃~+175℃) 200ppm/℃(-55℃~+20℃)	1410A	<10ppm/A	50W	Standard	<110g
ARCS8436FL025S4	±1%							

*(R1-R2)/[(I1-I2)*R0](R1:2/3times rated current,10min;R2:1/10 times rated current, 10 min;R0:Initial resistance;I1:2/3times ratedcurrent;I2:1/10time srated current.)

*Full nickel plating is the whole nickel plating, including the resistive alloy part, can completely prevent resistive alloy part from the oxidation,but the TCR performance is slightly reduced; half nickel plating type is partial nickel plating, the resistive alloy part is not nickel plated but only the copper terminal.

Part Number Information

Example:ARCS8436JL025S4 (ARCS 8436 ±5% 25μΩ Standard Nickel Plated)

A	R	C	S	8	4	3	6	J	L	0	2	5	S	4

- Series: ARCS
- Size: 8436
- Tolerance: J=±5%, F=±1%
- Resistance: L025=25μΩ
- Structure: S=Standard
- Packaging: 4=Nickel plated