HI-TECH RESISTORS PVT. LTD.

OVERVIEW OF ELECTRON BEAM WELDED LOW OHM CURRENT SENSE RESISTORS FROM HTR

As per AEC-Q200

RoHS COMPLIANT

LOW OHM CURRENT SENSE SHUNT RESISTORS ELECTRON BEAM WELDED

HEB SERIES

Power rating : 6W to 50W
Package size : 6315/6918/6018/5216/7036/5520/8518/8420
Resistance range : R000035 To R001
Tolerances available :
1%, 3%, 5% and 10%
Applications:

- Current sensing resistor for electronic battery management in electric vehicles & solar inverters

Features:

- Continuous current load upto 400A (0.5 m-ohm)
- Maximum fastening torque 12Nm
- Shunt available with tinned or without tinned terminals
- Alignment pins to prevent the resistor from moving during the soldering process can be provided
- Measurement pins to measure the voltage can be provided

HEB Series datasheet

aldinet electronic components

HTR'S TESTING CAPABILITIES

HTR's testing lab is equipped with **advanced infrastructure** to ensure high-precision **TCR Characterization and Shunt Calibration**. Our testing equipment's include **climatic chamber, cold chamber,8½ digit MultiMate(fluke make)** etc.

Key Tests Performed at HTR's Lab:

- Load Life Cycle Test
- Thermal Shock Test
- Drift Under Load Test

These test are part of a Validation plan and are conducted in line with the AECQ200 requirements and as a part of the Production part approval(PPAP) process.

aldinet
electronic components

ELECTRON BEAM WELDED RESISTORS

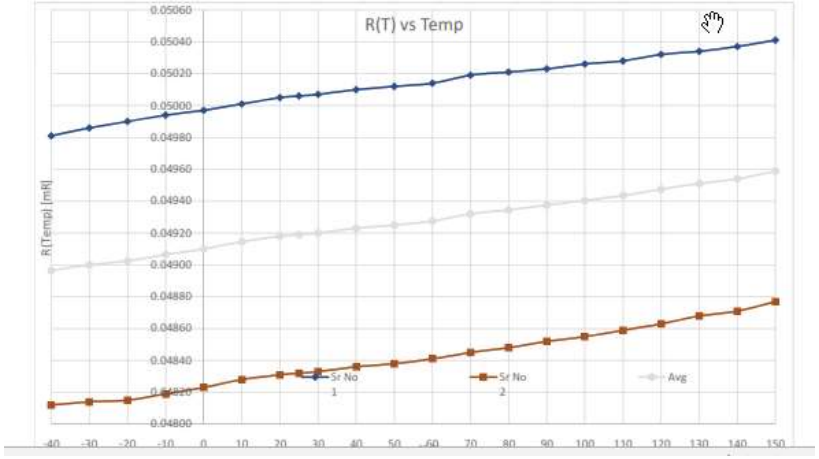
HTR offers a **wide range of Electron Beam Welded (EBW) Resistors**, designed to meet various application needs:
Compact Sizes – Starting from **2512** package
Larger Variants – Available up to **1(20-40)**
Custom Sizes – Resistors up to **140mm in length**
Tolerances available :
1%, 3%, 5% and 10%
Resistance Range Available:

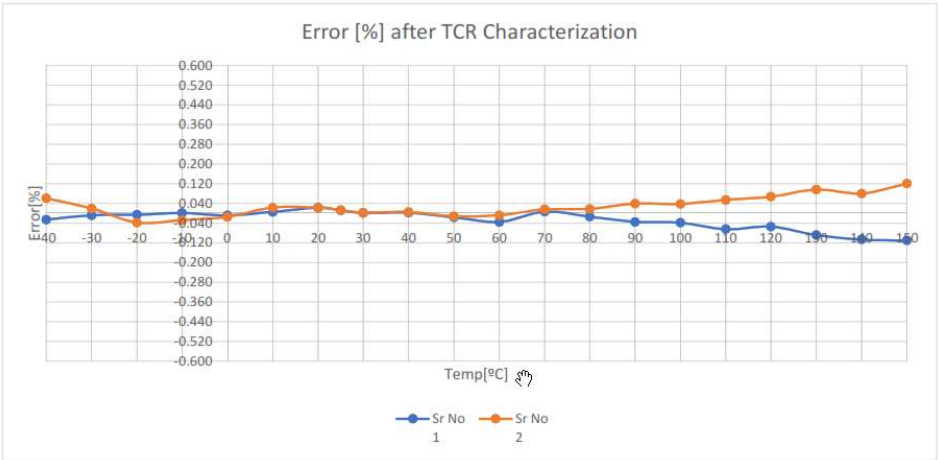
Our EBW resistors ensure **high precision, reliability, and durability**, making them ideal for **power electronics and automotive applications**.
Explore Our EBW Shunt Resistor Range:
Electron Beam Welded Resistors

TCR CHARCTERIZATION

TCR Characterization HTR provides **TCR (Temperature Coefficient of Resistance) Characterization** to ensure precise calibration of shunts.

Meas Points	Steps	Temp (°C)	Resistance Value (mΩ) @10A			dR(T) [fration 1]				Expe [F
			Sr No 1	Sr No 2	Avg	Sr No 1	Sr No 2	Avg	Std Dev	E
	1	-40	0.04981	0.04812	0.048965	-0.0050	-0.0041	-0.0046	0.0006	
	2	-30	0.04986	0.04814	0.049000	-0.0040	-0.0037	-0.0039	0.0002	
	3	-20	0.04990	0.04815	0.049025	-0.0032	-0.0035	-0.0034	0.0002	
	4	-10	0.04994	0.04819	0.049065	-0.0024	-0.0027	-0.0025	0.0002	
	5	0	0.04997	0.04823	0.049100	-0.0018	-0.0019	-0.0018	0.0000	
	6	10	0.05001	0.04828	0.049145	-0.0010	-0.0008	-0.0009	0.0001	
	7	20	0.05005	0.04831	0.049180	-0.0002	-0.0002	-0.0002	0.0000	
	8	25	0.05006	0.04832	0.049190	0.0000	0.0000	0.0000	0.0000	
	9	30	0.05007	0.04833	0.049200	0.0002	0.0002	0.0002	0.0000	
	10	40	0.05010	0.04836	0.049230	0.0008	0.0008	0.0008	0.0000	
	11	50	0.05012	0.04838	0.049250	0.0012	0.0012	0.0012	0.0000	
	12	60	0.05014	0.04841	0.049275	0.0016	0.0019	0.0017	0.0002	
	13	70	0.05019	0.04845	0.049320	0.0026	0.0027	0.0026	0.0001	
	14	80	0.05021	0.04848	0.049345	0.0030	0.0033	0.0032	0.0002	
	15	90	0.05023	0.04852	0.049375	0.0034	0.0041	0.0038	0.0005	
	16	100	0.05026	0.04855	0.049405	0.0040	0.0048	0.0044	0.0005	
	17	110	0.05028	0.04859	0.049435	0.0044	0.0056	0.0050	0.0008	
	18	120	0.05032	0.04863	0.049475	0.0052	0.0064	0.0058	0.0009	
	19	130	0.05034	0.04868	0.049510	0.0056	0.0075	0.0065	0.0013	
	20	140	0.05037	0.04871	0.049540	0.0062	0.0081	0.0071	0.0013	
	21	150	0.05041	0.04877	0.049590	0.0070	0.0093	0.0082	0.0016	





aldinet electronic components

SURFACE TREATEMNT OPTIONS

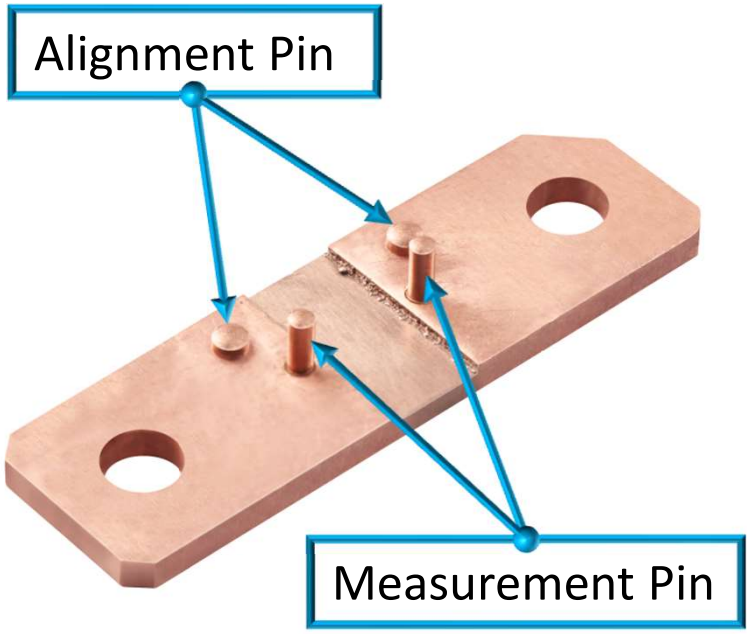
HTR offers shunt resistors with two **surface treatment options**, ensuring optimal performance and durability:

1. **Organic Solder Protection (OSP Treatment)**
Cost-effective solution
Provides **excellent solder ability**
Acts as an **economic alternative** to traditional coatings
2.**Tin Plated Option**
Ensures **enhanced durability and corrosion resistance**
Provides a **strong and reliable soldering surface**

Our **surface treatment options** are designed to meet **various industry requirements**, offering both **affordability and reliability**.

As per AEC-Q200

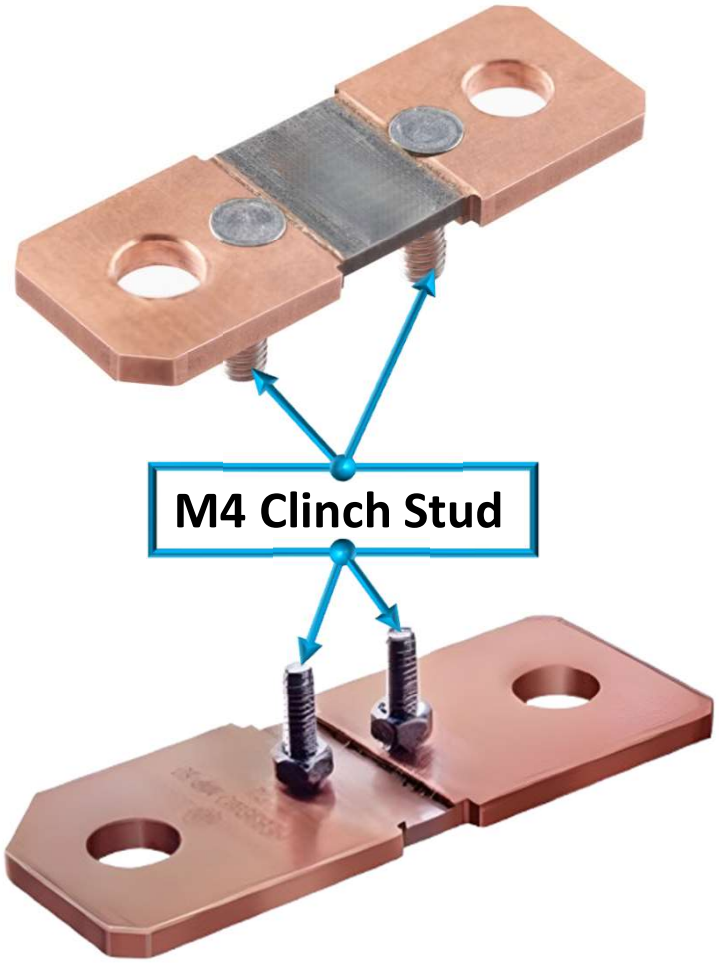
Pb RoHS COMPLIANT



CUSTOMIZED SHUNT RESISTOR

THROUGH HOLE TYPE –

- HEB Series – Voltage Sensing & Alignment Pins
- Includes measurement pins for precise voltage sensing.
- Features alignment pins for accurate PCB fitment and stability.



CUSTOMIZED SHUNT RESISTOR

THROUGH HOLE TYPE –

•HEB Series With SS Clinch Stud For Voltage Sensing

As per AEC-Q200

Pb RoHS COMPLIANT

CUSTOMIZED SHUNT RESISTOR

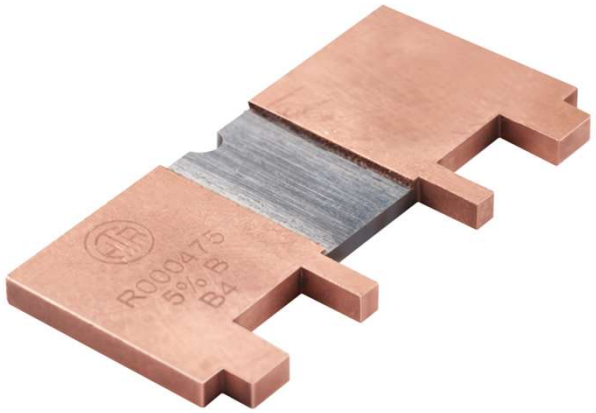
THROUGH HOLE TYPE WITH CUSTOMIZE MOUNTING –

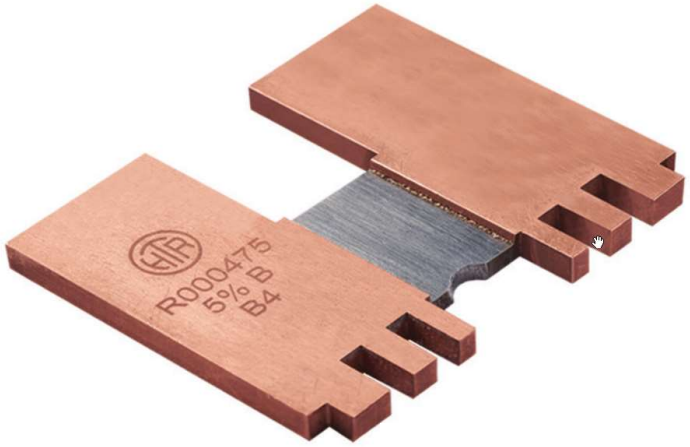
- Supports high-current applications.
- Offers customized bending shapes for unique mounting requirements.

aldinet electronic components

As per AEC-Q200

RoHS COMPLIANT





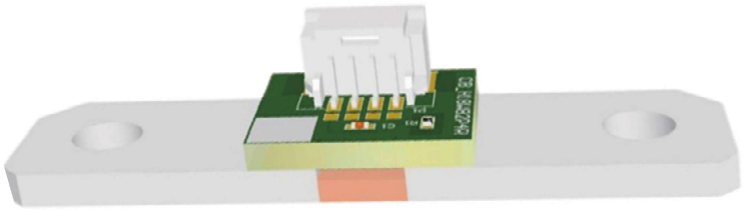
CUSTOMIZED SHUNT RESISTOR

PCB MOUNTING TYPE–

- Power rating : 6W to 50W
- Resistance range : R000035 To R001
- Tolerances available :
- 1%, 3%, 5%

aldinet electronic components

CUSTOMIZED SHUNT RESISTOR



THROUGH HOLE MOUNTING TYPE WITH PCB –

- Custom connectors with 4-pin voltage sensing.
- Integrated NTC for temperature monitoring.

HTR'S CERTIFICATIONS.

HTR is an IATF 16949:2016 certified company, serving numerous automotive customers across the globe.

At HTR, we perform tests in accordance with **AEC-Q200 standards**, and in certain cases, based on customer-requested standards.

These tests are part of the **Validation Process** followed in the **PPAP (Production Part Approval Process)** program.

Follow the link below to explore HTR's certifications:

https://www.htr-india.com/certifications/