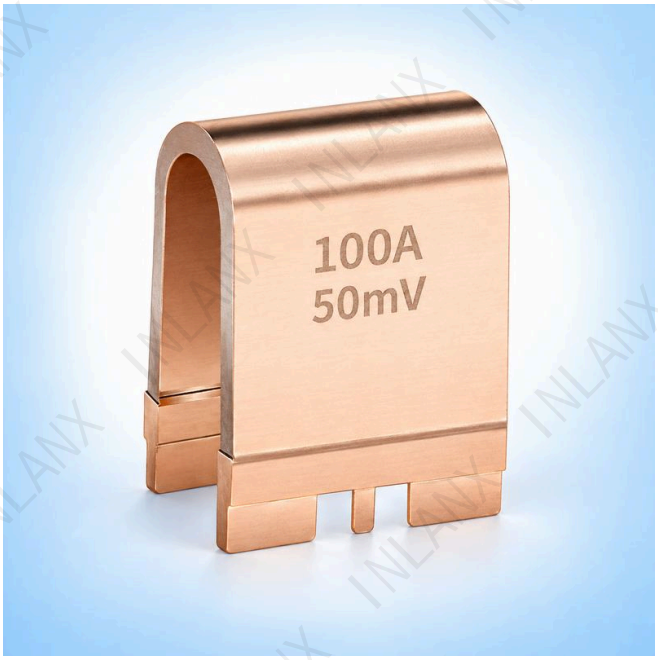
USR / UBH Shunt Resistors

Features

- Tolerance: ±1%, ±0.5%
- High-current capability; electron-beam welding
- Inductance <5 nH; solderable tinned leads
- RoHS; AEC-Q200; customizable



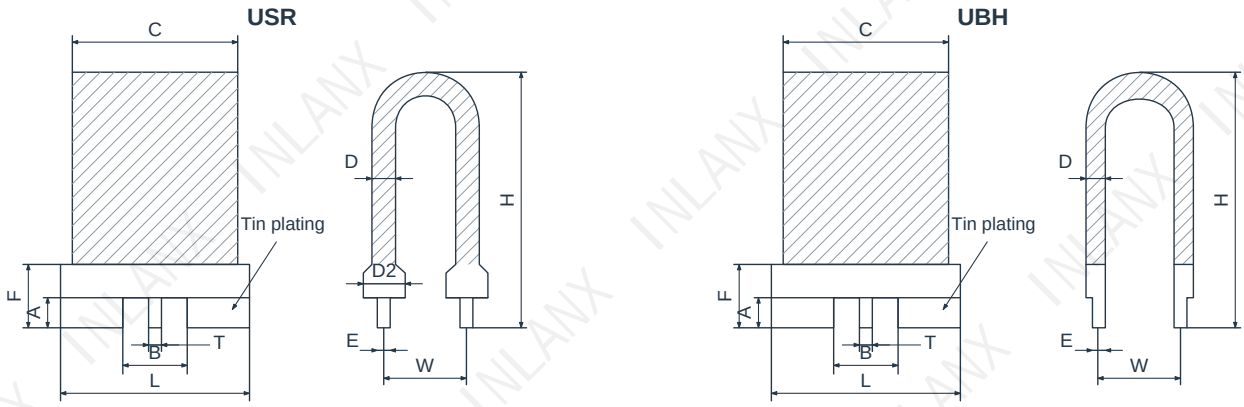
Applications

Current sensing; drive technology; power electronics; home appliances; automotive electronics; communication systems.

Endurance and Test Requirements

Test item	Test conditions	Reference	Limit
Temperature cycling	1000 cycles (-55°C to +125°C)	JESD22 Method JA-104	±0.5%
High temperature exposure	170°C, 100 h, unpowered.	MIL-STD-202 Method 108	±0.5%
Biased humidity	85°C / 85% RH, 1000 h; 10% of operating power.	MIL-STD-202 Method 103	±0.5%
Operational life	Condition D; steady-state ambient temperature 125°C at rated power.	MIL-STD-202 Method 108	±0.5%
Solderability	245°C ±5°C, 5 s ±0.5 s	MIL-STD-202 Method 208H	Coverage ≥95%
Vibration	5 g, 20 min, 12 cycles in each of 3 orientations; 10-2000 Hz. Use an 8 × 5 inch PCB, 0.031 inch thick; 7 securing points on one long side and 2 at the corners of the opposite side. Mount parts within 2 inches of a securing point.	MIL-STD-202 Method 204	±0.5%
Resistance to soldering heat	260°C ±5°C, 10 s ±1 s	MIL-STD-202 Method 210	±0.5%
Short-time overload	5 × rated power for 5 s	MIL-STD-202 Method 301	±0.5%

USR and UBH Outline Dimensions (mm)



USR Dimensional Data (mm)

Type	Data	L±0.2	W±0.5	D±0.1	C±1	H±2	A±0.2	B±0.1	T±0.1	E±0.1	F±1	D2±0.1
USR	40A 150mV	12	25	1	7	24	3	5.8	1.2	1.3	6	3
USR	40A 100mV	18	8.4	1.0	10	33	3	5.8	1.2	1.3	6	3
USR	50A 75mV	18	8.4	1.5	11	33	3	5.8	1.2	1.3	6	3
USR	50A 100mV	18	8.4	1.0	12.5	33	3	5.8	1.2	1.3	6	3
USR	65A 50mV	18	8.4	1.5	15.5	25	3	5.8	1.2	1.3	6	3
USR	75A 50mV	18	8.4	1.7	15.5	25	3	5.8	1.2	1.3	6	3
USR	100A 50mV	18	8.4	1.5	15.5	17	3	5.8	1.2	1.3	6	3
USR	100A 75mV	18	8.4	1.5	15.5	25	3	5.8	1.2	1.3	6	3
USR	100A 100mV	18	8.4	1.5	16.5	33	3	5.8	1.2	1.3	6	3
USR	200A 100mV	18	10.5	3.0	16.5	34	3	5.5	1.4	1.5	6	4

Marking

100A 50mV: rated current 100A, corresponding voltage 50mV.

Packaging and Storage

Bulk or blister packing. Material: Manganin. Material codes in the dimensional data: M=Manganin, K=Karma.

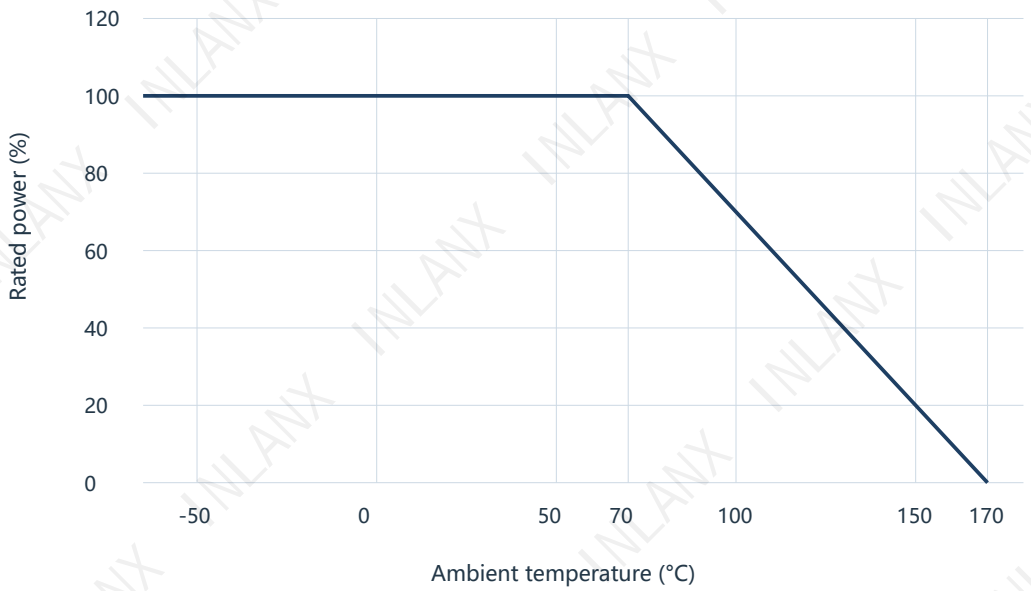
UBH Dimensional Data (mm)

Type	Data	L±0.2	W±0.5	D±0.1	C±1	H±0.5	A±0.2	B±0.1	T±0.1	E±0.1	F±1
UBH	45A 45mV	12	8.4	1.2	11	20	3	5.8	1.4	1.2	6
UBH	80A 40mV	15	6.4	2.0	14	22	3	5.8	1.4	1.5	6
UBH	100A 50mV	18	10.5	2.0	17.2	24	3	6	1.4	1.4	6
UBH	100A 100mV	18	8.4	1.0	18	22	3	6	1.2	1.0	6
UBH	200A 75mV	18	8.4	3.0	15.5	26	3	5.5	1.4	1.5	6
UBH	300A 75mV	18	10.5	3.0	18	26	3	5.8	1.4	1.5	6

Electrical Specifications

Type	USR/UBH
Resistance (mΩ)	0.3~30
Tolerance	±0.5%、±1%、±2%、±5%
Recommended operating temperature	-65°C to +170°C
Rated current (A)	5~300
Temperature coefficient (20°C to 120°C), ppm/°C	±50
Material	Manganin

Power Derating



Ordering Information

Field	Codes and description
Type	USR / UBH
Shape	U: U-shape; M: M-shape
Current	100 (A)
Voltage	50 (mV)
Tolerance	J: ±5%; G: ±2%; F: ±1%; D: ±0.5%
Other	X1: Pin tinning

Standard measuring conditions: 20±2°C, 65±5% RH. When the judgment is unambiguous, measurements may be made at 5-35°C and 45-85% RH.