



Power Metal Strip® Battery Shunt Resistor Very Low Value (Down to 25 $\mu\Omega$)



FEATURES

- High power to resistor size ratio
- Proprietary processing technique produces extremely low resistance values
- All welded construction
- Solid metal manganese-copper alloy resistive element with low TCR ($< 20 \text{ ppm}/^\circ\text{C}$)
- Very low inductance ($< 5 \text{ nH}$)
- Low thermal EMF ($< 3 \mu\text{V}/^\circ\text{C}$)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

LINKS TO ADDITIONAL RESOURCES



3D Models



Design Tools

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	SIZE	POWER RATING $P_{70^\circ\text{C}}$ W	TOLERANCE $\pm \%$	RESISTANCE VALUE RANGE Ω	RESISTANCE VALUES CURRENTLY AVAILABLE ⁽¹⁾ Ω	WEIGHT (typical) g
WSBS8536	8536	50	5, 10	25 μ to 125 μ	25 μ , 50 μ , 100 μ , 125 μ	25 μ = 77, 50 μ = 75, 100 μ / 125 μ = 71

Note

⁽¹⁾ Other values may be available, contact factory

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Temperature coefficient	ppm/ $^\circ\text{C}$	± 200 for 25 $\mu\Omega$
		± 175 for 50 $\mu\Omega$
		± 165 for 100 $\mu\Omega$ / 125 $\mu\Omega$
Temperature coefficient (element material)	ppm/ $^\circ\text{C}$	± 20
Operating temperature range	$^\circ\text{C}$	-65 to +170
Maximum current rating	A	$(P/R)^{1/2}$

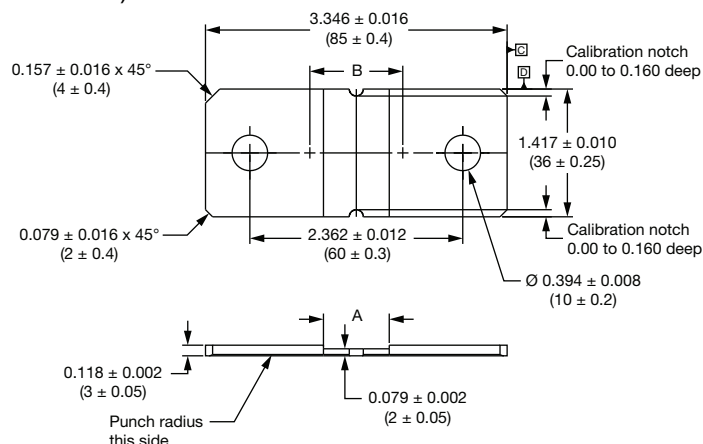
GLOBAL PART NUMBER INFORMATION

Global Part Numbering: WSBS8536L1000JK (WSBS8536, 0.000100 Ω , $\pm 5 \%$, bulk pack)

W	S	B	S	8	5	3	6	L	1	0	0	0	J	T		
GLOBAL MODEL				RESISTANCE VALUE				TOLERANCE CODE		PACKAGING CODE		SPECIAL				
WSBS8536				L = m Ω L0500 = 0.000050 Ω L1000 = 0.000100 Ω L1250 = 0.000125 Ω L2500 = 0.000250 Ω				J = $\pm 5 \%$ K = $\pm 10 \%$		T = tray pack K = bulk pack		(dash number) (up to 2 digits) from 1 to 99 as applicable				



DIMENSIONS in inches (millimeters)

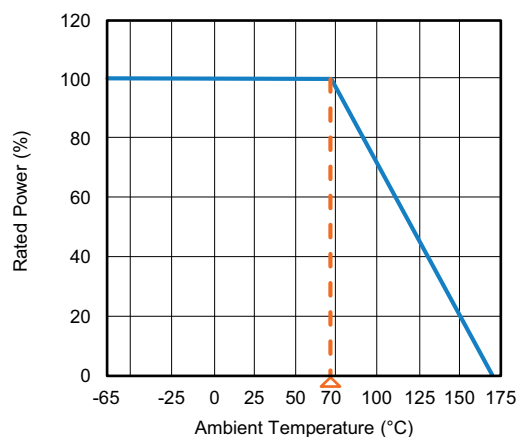


RESISTANCE VALUE ($\mu\Omega$)	ELEMENT MATERIAL	A REFERENCE	B ± 0.005 (± 0.13)
25	Mn-Cu	0.145 (3.683)	0.270 (6.858)
50	Mn-Cu	0.360 (9.144)	0.492 (12.496)
100	Mn-Cu	0.730 (18.542)	0.862 (21.894)
125	Mn-Cu	0.900 (22.860)	1.032 (26.212)

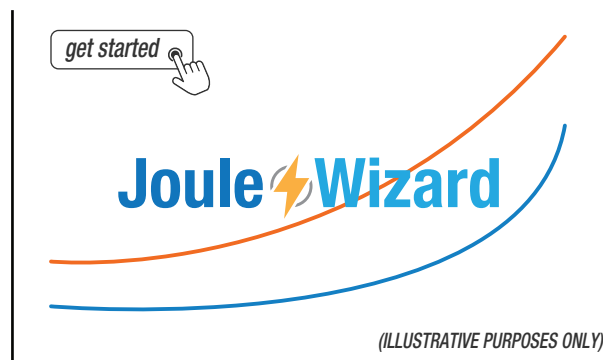
TOLERANCES ON DECIMALS
.xxx ± 0.005 (.x ± 0.1)

UNLESS OTHERWISE LISTED

DERATING



PULSE CAPABILITY



www.vishay.com/en/resistors/joulewizard/

PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal shock	-55 °C to +150 °C, 1000 cycles, 15 min at each extreme	± 0.5 % ΔR
Short time overload	5 x rated power for 5 s	± 0.5 % ΔR
Low temperature storage	-65 °C for 24 h	± 0.5 % ΔR
High temperature exposure	1000 h at +170 °C	± 1.0 % ΔR
Bias humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	± 0.5 % ΔR
Mechanical shock	100 g's for 6 ms, 5 pulses	± 0.5 % ΔR
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	± 0.5 % ΔR
Load life	1000 h at +70 °C, 1.5 h "ON", 0.5 h "OFF"	± 1.0 % ΔR
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7b not required	± 0.5 % ΔR

**AVAILABLE CATALOG OPTIONS**

GLOBAL MODEL	SPECIAL	
WSBS8536	Cu terminals	www.vishay.com/doc?30395
WSBS8536...14	Sn plated	www.vishay.com/doc?30396
WSBS8536...20	Two sense pins	www.vishay.com/doc?30397
WSBS8536...40	Three sense pins	www.vishay.com/doc?30398
WSBS8536...60	Two sense pins, Sn plated	www.vishay.com/doc?30411
WSBS8536...80	Three sense pins, Sn plated	www.vishay.com/doc?30414

LINKS TO RELATED DOCUMENTS

TECHNICAL NOTES	
The Benefit of Using a Three Sense Pin Design on Battery / Meter Shunt Resistors	www.vishay.com/doc?30381
WHITE PAPERS	
Temperature Coefficient of Resistance for Current Sensing	www.vishay.com/doc?30405



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