



Power Metal Strip® Battery Shunt Resistor, Very Low Value (50 $\mu\Omega$, 100 $\mu\Omega$, 125 $\mu\Omega$, and 250 $\mu\Omega$)

RoHS
COMPLIANTHALOGEN
FREEGREEN
(5-2008)

FEATURES

- High power to resistor size ratio
- Proprietary processing technique produces extremely low resistance values
- All welded construction
- Very low inductance (< 5 nH)
- Low thermal EMF (as low as < 1 $\mu\text{V}/^\circ\text{C}$)
- AEC-Q200 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

LINKS TO ADDITIONAL RESOURCES



STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	SIZE	POWER RATING $P_{70^\circ\text{C}}$ W	TOLERANCE $\pm \%$	RESISTANCE VALUE RANGE ⁽¹⁾ Ω	RESISTANCE VALUES CURRENTLY AVAILABLE ⁽²⁾ Ω	WEIGHT (typical) g
WSBS8518	8518	36	5, 10	50 μ to 1000 μ	50 μ , 100 μ , 125 μ , 250 μ	50 μ = 37.9, 100 μ / 125 μ = 36.5, 250 μ = 33.7

Notes

⁽¹⁾ Please reference WSBS8518...34 datasheet (www.vishay.com/doc?30354) for resistance values 500 $\mu\Omega$ to 1000 $\mu\Omega$

⁽²⁾ Other values may be available, contact factory

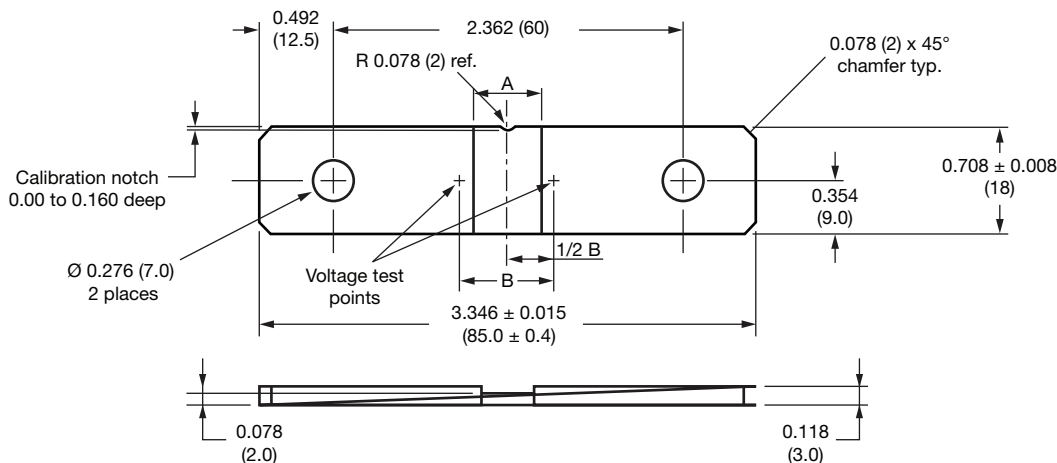
TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Temperature coefficient	ppm/ $^\circ\text{C}$	± 200 for 50 $\mu\Omega$
		± 175 for 100 $\mu\Omega$, 125 $\mu\Omega$
		± 110 for 250 $\mu\Omega$
Temperature coefficient (element material)	ppm/ $^\circ\text{C}$	± 20
Operating temperature range	$^\circ\text{C}$	-65 to +170
Thermal EMF	$\mu\text{V}/^\circ\text{C}$	< 1 for 50 $\mu\Omega$ and < 3 for 100 $\mu\Omega$, 125 $\mu\Omega$, 250 $\mu\Omega$
Maximum current rating	A	$(P/R)^{1/2}$

GLOBAL PART NUMBER INFORMATION

Global Part Numbering: WSBS8518L1250JK (WSBS8518, 0.000125 Ω , $\pm 5 \%$, bulk pack)

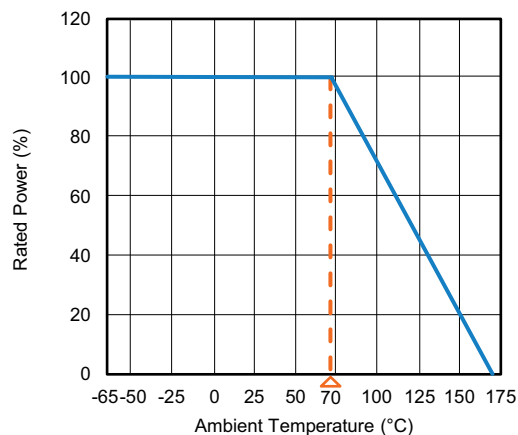
W	S	B	S	8	5	1	8	L	1	2	5	0	J	K		
GLOBAL MODEL		RESISTANCE VALUE				TOLERANCE CODE		PACKAGING CODE				SPECIAL				
WSBS8518		L = mΩ L0500 = 0.000050 Ω L1000 = 0.000100 Ω L1250 = 0.000125 Ω L2500 = 0.000250 Ω				J = ± 5 % K = ± 10 %		K = bulk pack T = tray pack				(dash number) (up to 2 digits) from 1 to 99 as applicable				

**DIMENSIONS** in inches (millimeters)

RESISTANCE VALUE ($\mu\Omega$)	ELEMENT MATERIAL	A REFERENCE	B ± 0.005 (± 0.13)
50	Mn-Cu	0.145 (3.68)	0.270 (8.71)
100	Mn-Cu	0.370 (9.40)	0.495 (12.57)
125	Mn-Cu	0.480 (12.19)	0.605 (15.37)
250	Mn-Cu	0.900 (22.86)	1.025 (26.04)

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	
WSBS8518	Cu terminals	www.vishay.com/doc?30134
WSBS8518...14	Sn plated	www.vishay.com/doc?30340
WSBS8518...20	Two sense pins	www.vishay.com/doc?30341
WSBS8518...34	Low TCR	www.vishay.com/doc?30354
WSBS8518...35	Sense pins, low TCR	www.vishay.com/doc?30355
WSBS8518...40	Three sense pins	www.vishay.com/doc?30350
WSBS8518...60	Two sense pins, Sn plated	www.vishay.com/doc?30390
WSBS8518...80	Three sense pins, Sn plated	www.vishay.com/doc?30391
WSBS8518...M3	M3 tapped holes	www.vishay.com/doc?30374
WSBS8518...M4	M4 tapped holes	www.vishay.com/doc?30375
WSBS8518...P3	M3 tapped holes, Sn plated	www.vishay.com/doc?30392
WSBS8518...P4	M4 tapped holes, Sn plated	www.vishay.com/doc?30393

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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