

Power Metal Strip® Battery Shunt Resistor, Very Low Value (50 μΩ, 100 μΩ, 125 μΩ, and 250 μΩ)



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 μV/°C)
- AEC-Q200 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

 AUTOMOTIVE
GRADE

RoHS
COMPLIANT

 HALOGEN
FREE
GREEN
(5-2008)

ADDITIONAL RESOURCES



3D Models

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

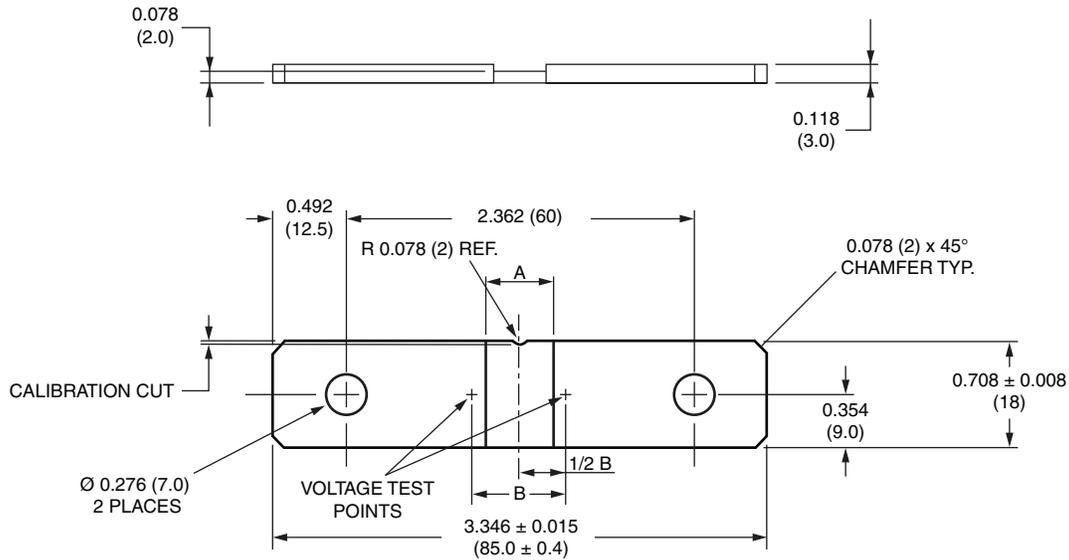
Notes

- (1) Please reference WSBS8518...34 datasheet (www.vishay.com/doc?30354) for resistance values 500 μΩ to 1000 μΩ
- (2) Other values may be available, contact factory

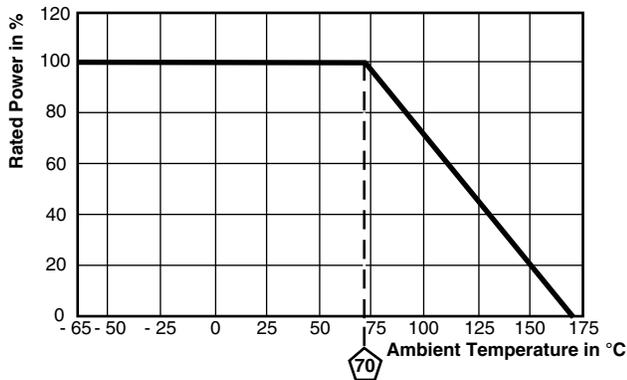
TECHNICAL SPECIFICATIONS		
PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Temperature coefficient	ppm/°C	± 200 for 50 μΩ
		± 175 for 100 μΩ, 125 μΩ
		± 110 for 250 μΩ
Temperature coefficient (element material)	ppm/°C	± 20
Operating temperature range	°C	-65 to +170
Thermal EMF	μV/°C	< 1 for 50 μΩ and < 3 for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

GLOBAL PART NUMBER INFORMATION																
GLOBAL PART NUMBERING: WSBS8518L1250JK (WSBS8518, 0.000125 Ω, ± 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)



DERATING



TOLERANCES ON DECIMALS
 .xxx ± 0.005 [.x ± 0.1]
 UNLESS OTHERWISE LISTED

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]

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



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