



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



### FEATURES

- High power to resistor size ratio
- Sn plating assists with PCB mounting and corrosion protection
- 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](http://www.vishay.com/doc?99912)



**DESIGN TOOLS** (click logo to get started)



### STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	SIZE	POWER RATING $P_{70^\circ\text{C}}$ W	TOLERANCE $\pm \%$	RESISTANCE VALUE RANGE $\Omega$	RESISTANCE VALUES CURRENTLY AVAILABLE <sup>(1)</sup> $\Omega$	WEIGHT (typical) g
WSBS8518...14	8518	36	5, 10	50 $\mu$ to 1000 $\mu$	50 $\mu$ , 100 $\mu$ , 125 $\mu$ , 250 $\mu$	50 $\mu$ = 37.9, 100 $\mu$ / 125 $\mu$ = 36.5, 250 $\mu$ = 33.7

**Note**

(1) Other values may be available, contact factory

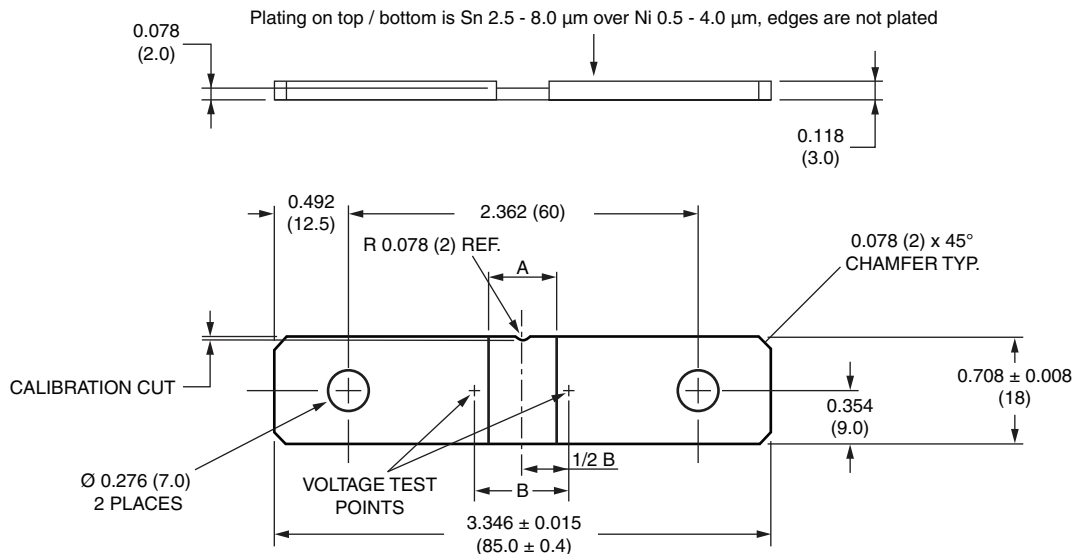
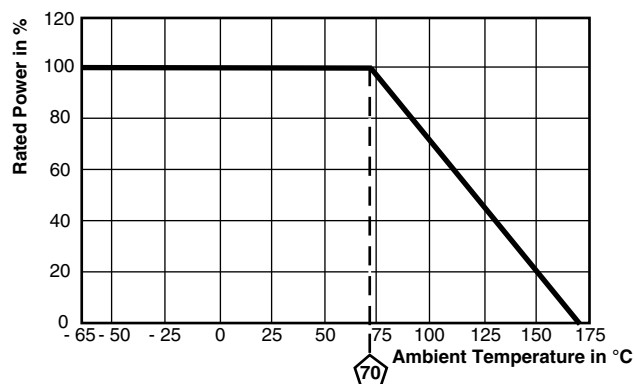
### TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Temperature coefficient	ppm/ $^\circ\text{C}$	$\pm 200$ for 50 $\mu\Omega$
		$\pm 175$ for 100 $\mu\Omega$ / 125 $\mu\Omega$
		$\pm 110$ for 250 $\mu\Omega$
Temperature coefficient (element material)	ppm/ $^\circ\text{C}$	$\pm 20$
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: WSBS8518L1250JK14 (WSBS8518...14, 0.000125  $\Omega$ ,  $\pm 5 \%$ , bulk pack)

W	S	B	S	8	5	1	8	L	1	2	5	0	J	K	1	4
GLOBAL MODEL				RESISTANCE VALUE				TOLERANCE CODE				PACKAGING CODE				SPECIAL
WSBS8518				L = m $\Omega$ L0500 = 0.000050 $\Omega$ L1000 = 0.000100 $\Omega$ L1250 = 0.000125 $\Omega$ L2500 = 0.000250 $\Omega$				J = $\pm 5 \%$ K = $\pm 10 \%$				K = bulk pack T = tray pack				14 = Sn plated

**DIMENSIONS** in inches (millimeters)

**DERATING**

TOLERANCES ON DECIMALS  
.xxx  $\pm$  0.005 [.x  $\pm$  0.1]

UNLESS OTHERWISE LISTED

RESISTANCE VALUE ( $\mu\Omega$ )	ELEMENT MATERIAL	A REFERENCE	B $\pm$ 0.005 [ $\pm$ 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	$\pm$ 0.5 % $\Delta R$
Short time overload	5x rated power for 5 s	$\pm$ 0.5 % $\Delta R$
Low temperature storage	-65 °C for 24 h	$\pm$ 0.5 % $\Delta R$
High temperature exposure	1000 h at +170 °C	$\pm$ 1.0 % $\Delta R$
Bias humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	$\pm$ 0.5 % $\Delta R$
Mechanical shock	100 g's for 6 ms, 5 pulses	$\pm$ 0.5 % $\Delta R$
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	$\pm$ 0.5 % $\Delta R$
Load life	1000 h at +70 °C, 1.5 h "ON", 0.5 h "OFF"	$\pm$ 1.0 % $\Delta R$
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7b not required	$\pm$ 0.5 % $\Delta R$



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