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Vishay Dale

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



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



#### **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)</li>
- Low thermal EMF (as low as < 1 μV/°C)</li>
- AEC-Q200 qualified
- · Material categorization: for definitions of compliance please see www.vishay.com/doc?99912







HALOGEN FREE

**GREEN** 

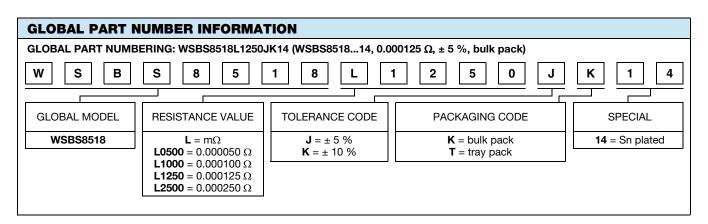
(5-2008)

STANDARD	ELEC	TRICAL SPEC	IFICATIONS	3		
GLOBAL MODEL	SIZE	POWER RATING  P <sub>70 °C</sub> W	TOLERANCE ± %	RESISTANCE VALUE RANGE $\Omega$	RESISTANCE VALUES CURRENTLY AVAILABLE (1) Ω	WEIGHT (typical) g
WSBS851814	8518	36	5, 10	50μ to 1000μ	50µ, 100µ, 125µ, 250µ	$50\mu = 37.9,$ $100\mu / 125\mu = 36.5,$ $250\mu = 33.7$

#### Note

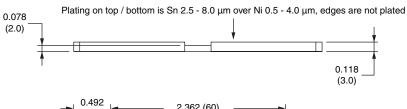
(1) Other values may be available, contact factory

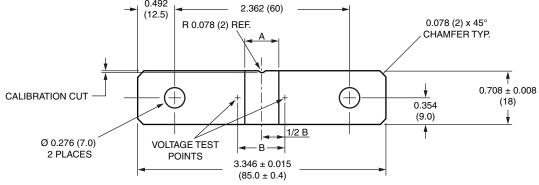
TECHNICAL SPECIFICATIONS				
PARAMETER	UNIT	RESISTOR CHARACTERISTICS		
		$\pm$ 200 for 50 μ $\Omega$		
Temperature coefficient	ppm/°C	$\pm$ 175 for 100 μ $\Omega$ / 125 μ $\Omega$		
		± 110 for 250 μΩ		
Temperature coefficient (element material)	ppm/°C	± 20		
Operating temperature range	°C	-65 to +170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



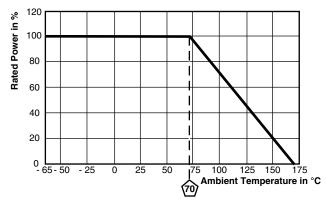


### **DIMENSIONS** in inches (millimeters)





#### **DERATING**



<b>TOLERANCES ON DECIMALS</b>
$.xxx \pm 0.005 [.x \pm 0.1]$

UNLESS OTHERWISE LISTED

RESISTANCE VALUE (μΩ)	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	5x 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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