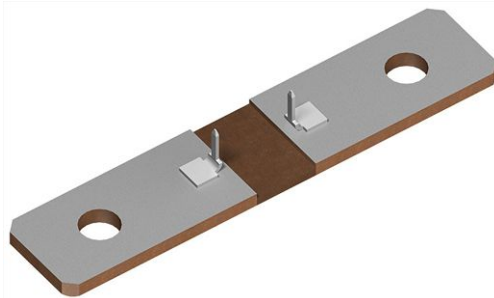


# Power Metal Strip® Shunt Resistor With Two Sense Pins and Sn Plated Terminals, Very Low Value (50 μΩ, 100 μΩ, 125 μΩ, and 250 μΩ)


**DESIGN SUPPORT TOOLS AVAILABLE**

**FEATURES**

- High power to resistor size ratio
- Sense pins allow for consistent contact location
- Sn plating assists with PCB mounting and corrosion protection
- Proprietary processing technique produces extremely low resistance values
- Welded terminal to element construction
- Solid metal manganese-copper alloy resistive element with low TCR (< 20 ppm/°C)
- 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](http://www.vishay.com/doc?99912)



STANDARD ELECTRICAL SPECIFICATIONS						
GLOBAL MODEL	SIZE	POWER RATING $P_{70^{\circ}\text{C}}$ W	TOLERANCE ± %	RESISTANCE VALUE RANGE <sup>(1)</sup> Ω	RESISTANCE VALUES CURRENTLY AVAILABLE <sup>(2)</sup> Ω	WEIGHT (typical) g
WSBS8518...60	8518	36	5, 10	50μ to 1000μ	50μ, 100μ, 125μ, 250μ	50μ = 38.4, 100μ / 125μ = 36.9, 250μ = 34.2

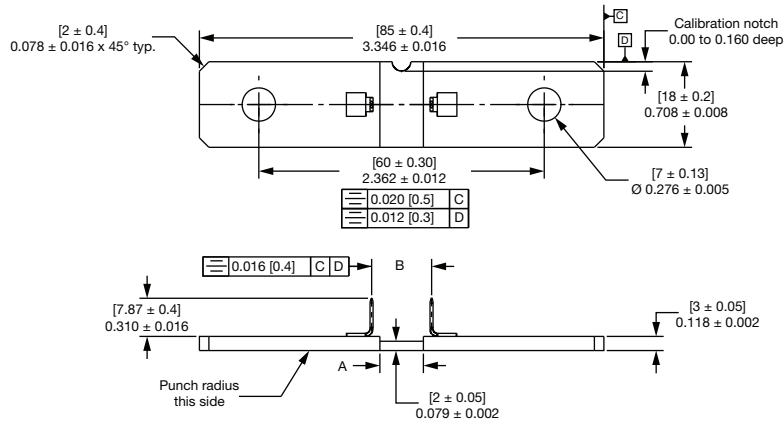
**Notes**

- <sup>(1)</sup> Please reference WSBS8518...35 datasheet ([www.vishay.com/doc?30355](http://www.vishay.com/doc?30355)) for resistance values 500 μΩ to 1000 μΩ  
<sup>(2)</sup> 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
Inductance	nH	< 5
Maximum current rating	A	$(P/R)^{1/2}$

GLOBAL PART NUMBER INFORMATION															
GLOBAL PART NUMBERING: WSBS8518L1000JT60 (WSBS8518...60, 0.0001 Ω, ± 5 %, tray pack)															
W	S	B	S	8	5	1	8	L	1	0	0	J	T	6	0
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			60 = two sense pins attached with plated terminals				

**DIMENSIONS** in inches (millimeters)



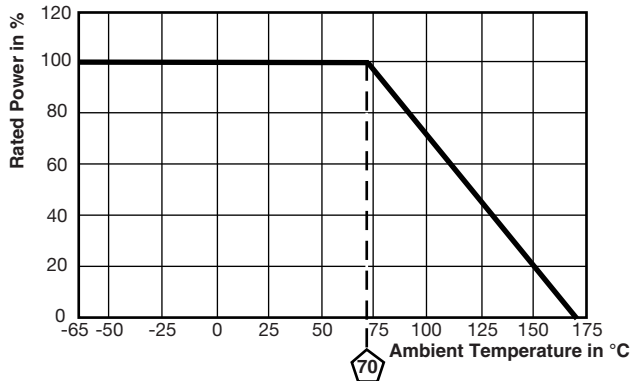
**Notes**

- Plating on top / bottom is Sn 2.5 μm to 8.0 μm over Ni 0.5 μm to 4.0 μm, edges are not plated
- Minimum pull strength of sense pins is 200 N

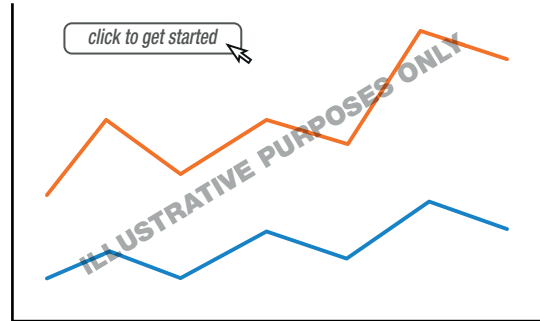
RESISTANCE VALUE (μΩ)	ELEMENT MATERIAL	A REFERENCE	B ± 0.005 (± 0.13)
50	Mn-Cu	0.145 (3.68)	0.135 (3.43)
100	Mn-Cu	0.360 (9.14)	0.495 (12.57)
125	Mn-Cu	0.480 (12.19)	0.585 (14.86)
250	Mn-Cu	0.900 (22.86)	1.028 (26.11)

TOLERANCES ON DECIMALS  
 .xxx ± 0.005 (.x ± 0.1)  
 UNLESS OTHERWISE LISTED

**DERATING**



**PULSE CAPABILITY**



[www.vishay.com/resistors/large-shunt-power-metal-strip-calculator/](http://www.vishay.com/resistors/large-shunt-power-metal-strip-calculator/)

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
	10 x rated power for 5 s	± 1.0 % 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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