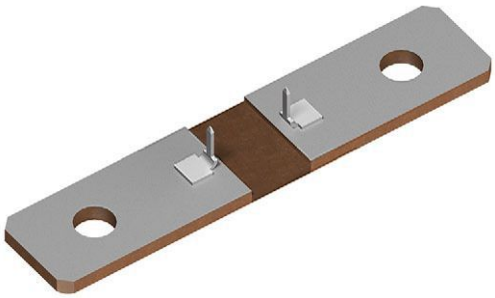
Power Metal Strip® Shunt Resistor With Two Sense Pins and Sn Plated Terminals, Very Low Value (50 µΩ, 100 µΩ, 125 µΩ, and 250 µΩ)



LINKS TO ADDITIONAL RESOURCES

3D Models Design Tools

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

Pb-free

e3

RoHS COMPLIANT

HALOGEN FREE GREEN (5-2008)

STANDARD ELECTRICAL SPECIFICATIONS

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

Notes

(1) Please reference WSBS8518…35 datasheet (www.vishay.com/doc?30355) 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
Inductance	nH	< 5
Maximum current rating	A	$(P/R)^{1/2}$

GLOBAL PART NUMBER INFORMATION

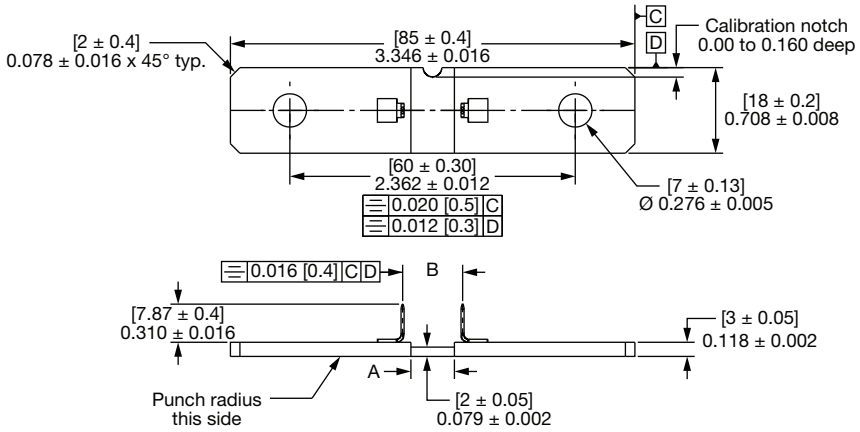
GLOBAL PART NUMBERING: WSBS8518L1000JT60 (WSBS8518…60, 0.0001 Ω, ± 5 %, tray pack)

W	S	B	S	8	5	1	8	L	1	0	0	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

For technical questions, contact: ww2cresistors@vishay.com

DIMENSIONS in inches (millimeters)



Notes

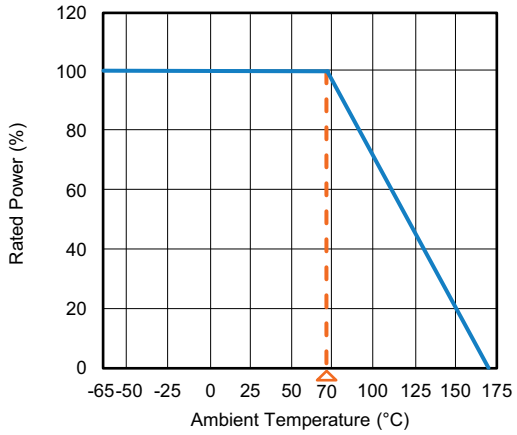
- Plating on top / bottom is Sn 2.5 µm to 8.0 µm over Ni 0.5 µm to 4.0 µm, edges are not plated
- Minimum pull strength of sense pins is 200 N

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)

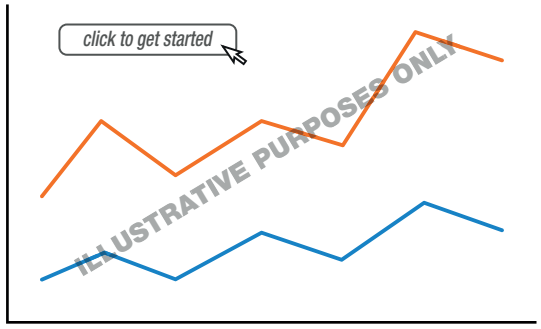
TOLERANCES ON DECIMALS
.xxx ± 0.005 (.x ± 0.1)

UNLESS OTHERWISE LISTED

DERATING



PULSE CAPABILITY



www.vishay.com/resistors/large-shunt-power-metal-strip-calculator/

PERFORMANCE		
TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal shock	-55 °C to +150 °C, 1000 cycles, 15 min at each extreme	± 0.5 % Δ*R*
Short time overload	5 x rated power for 5 s	± 0.5 % Δ*R*
Low temperature storage	-65 °C for 24 h	± 0.5 % Δ*R*
High temperature exposure	1000 h at +170 °C	± 1.0 % Δ*R*
Bias humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	± 0.5 % Δ*R*
Mechanical shock	100 *g*'s for 6 ms, 5 pulses	± 0.5 % Δ*R*
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	± 0.5 % Δ*R*
Load life	1000 h at +70 °C, 1.5 h "ON", 0.5 h "OFF"	± 1.0 % Δ*R*
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7b not required	± 0.5 % Δ*R*

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