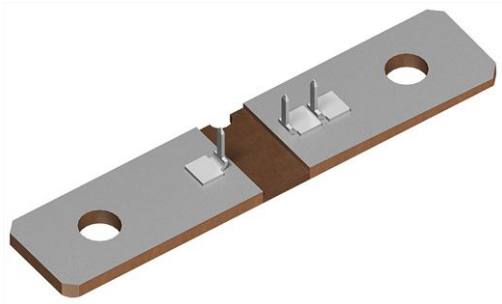
Power Metal Strip® Shunt Resistor With Three Sense Pins, Sn Plated Terminals, Very Low Value (50 µΩ, 100 µΩ, and 125 µΩ)



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 (< 1 µV/°C available)
- 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)

DESIGN SUPPORT TOOLS AVAILABLE

3D Models

Design Tools

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	SIZE	POWER RATING $P_{70\,°C}$ W	TOLERANCE ± %	RESISTANCE VALUE RANGE Ω	RESISTANCE VALUES CURRENTLY AVAILABLE (1) Ω	WEIGHT (typical) g
WSBS8518...80	8518	36	5, 10	50µ to 1000µ	50µ, 100µ, 125µ	50µ = 38.6, 100µ / 125u = 37.1

Note

(1) 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
Temperature coefficient (element material)	ppm/°C	± 20
Thermal EMF	µV/°C	< 1 for 50 µΩ and < 3 for 100 µΩ, 125 µΩ
Inductance	nH	< 5
Operating temperature range	°C	-65 to +170
Maximum current rating	A	$(P/R)^{1/2}$

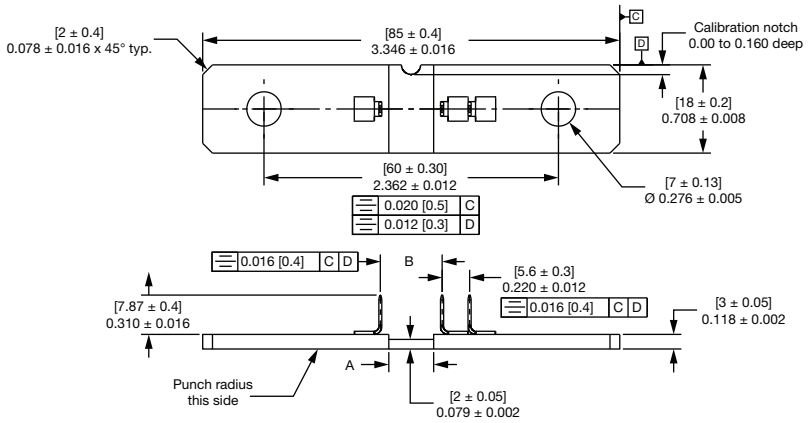
GLOBAL PART NUMBER INFORMATION

GLOBAL PART NUMBERING: WSBS8518L1000JT80 (WSBS8518...80, 0.000100 Ω, ± 5 %, tray pack)

W	S	B	S	8	5	1	8	L	1	0	0	0	J	T	8	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	**J** = ± 5 % **K** = ± 10 %	**K** = bulk pack **T** = tray pack	**80** = three sense pins attached with plated terminals

DIMENSIONS in inches (millimeters)



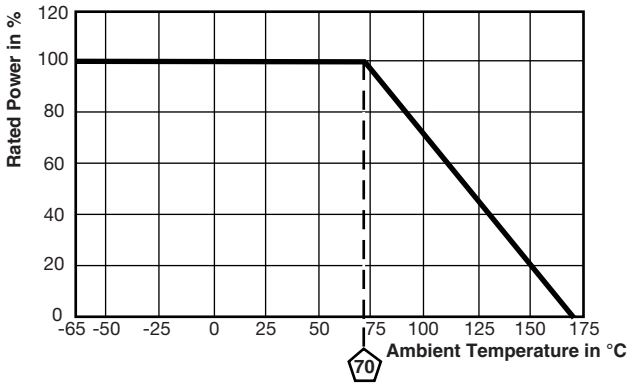
Notes

- 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

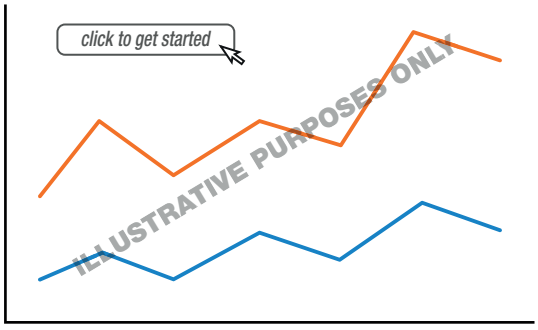
RESISTANCE VALUE (µΩ)	ELEMENT MATERIAL	A REFERENCE	B ± 0.005 (± 0.13)
50	Mn-Cu	0.145 (3.68)	0.135 (3.43)
100	Mn-Cu	0.360 (9.14)	0.495 (12.57)
125	Mn-Cu	0.480 (12.19)	0.585 (14.86)

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*
	10 x rated power for 5 s	± 1.0 % 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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