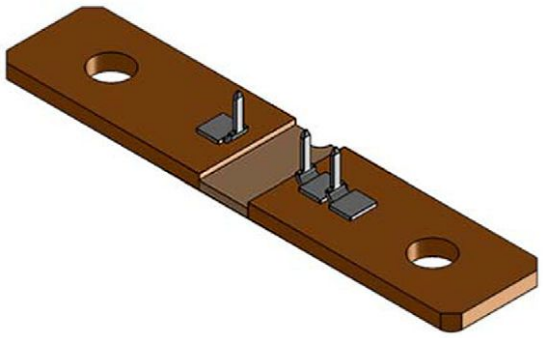
Power Metal Strip® Shunt Resistor With Three Sense Pins, Very Low Value (50 µΩ, 100 µΩ, and 125 µΩ)



FEATURES

- High power to resistor size ratio
- Sense pins allow for consistent contact location
- 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)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free RoHS COMPLIANT HALOGEN FREE GREEN (5-2008)

DESIGN TOOLS (click logo to get started)

3D Models Available

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...40	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: WSBS8518L1000JT40 (WSBS8518...40, 0.000100 Ω, ± 5 %, tray pack)

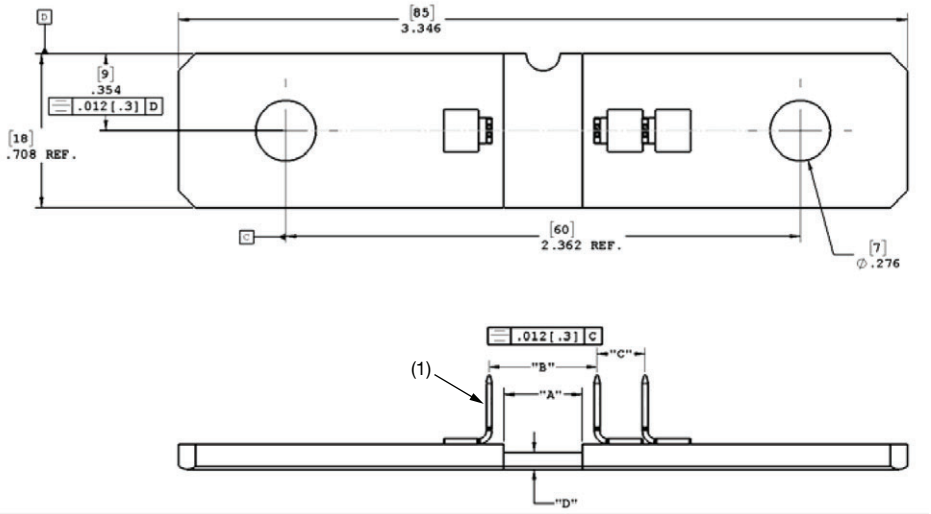
W	S	B	S	8	5	1	8	L	1	0	0	0	J	T	4	0

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	**40** = three sense pins attached

For technical questions, contact: ww2cresistors@vishay.com

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DIMENSIONS in inches (millimeters)

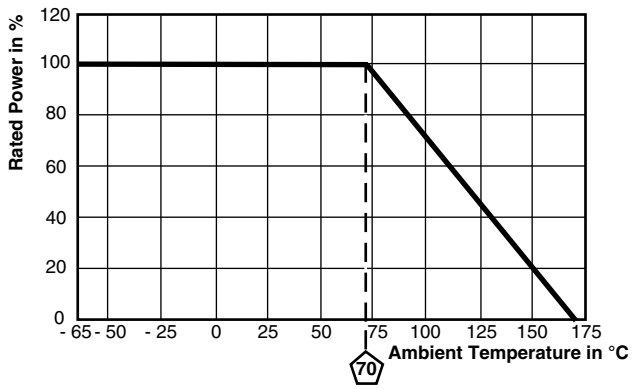


RESISTANCE VALUE (μΩ)	ELEMENT MATERIAL	A REFERENCE	B ± 0.005 [± 0.13]	C ± 0.005 [± 0.13]	D ± 0.002 [± 0.05]
50	Mn-Cu	0.145 [3.68]	0.135 [3.43]	0.220 [5.59]	0.079 [2.00]
100	Mn-Cu	0.370 [9.40]	0.495 [12.57]	0.220 [5.59]	0.079 [2.00]
125	Mn-Cu	0.480 [12.19]	0.585 [14.86]	0.220 [5.59]	0.079 [2.00]

Note

(1) Minimum pull strength of 200 N

DERATING



TOLERANCES ON DECIMALS
.xxx ± 0.005 [.x ± 0.1]

UNLESS OTHERWISE LISTED

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	5x 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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