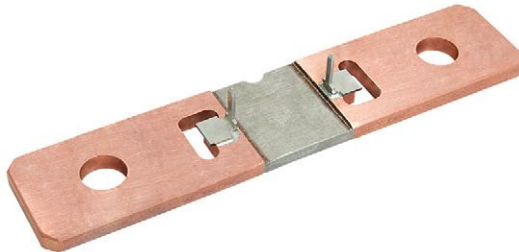




# Power Metal Strip® Shunt Resistor With Sense Pins, Low TCR (Down to $< \pm 10 \text{ ppm}/^\circ\text{C}$ ), Very Low Value ( $100 \mu\Omega$ , $500 \mu\Omega$ , and $1000 \mu\Omega$ )



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

## FEATURES

- High power to resistor size ratio
- Proprietary processing technique produces extremely low resistance values
- Welded terminal to element construction
- Solid metal nickel-chrome alloy resistive element with unique design for low TCR (down to  $\pm 10 \text{ ppm}/^\circ\text{C}$ )
- Very low inductance ( $< 5 \text{ nH}$ )
- Low thermal EMF (as low as  $< 1.25 \mu\text{V}/^\circ\text{C}$ )
- AEC-Q200 qualified
- PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

## LINKS TO ADDITIONAL RESOURCES



## STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	SIZE	POWER RATING $P_{70^\circ\text{C}}$ W	TOLERANCE $\pm \%$	RESISTANCE VALUE RANGE $\Omega$	RESISTANCE VALUES CURRENTLY AVAILABLE <sup>(1)</sup> $\Omega$	WEIGHT (typical) g
WSBS8518...35	8518	36	5, 10	$100\mu$ to $1000\mu$	$100\mu$	36.5
WSBS8518...35	8518	25	5, 10	$100\mu$ to $1000\mu$	$500\mu$	33.9
WSBS8518...35	8518	20	5, 10	$100\mu$ to $1000\mu$	$1000\mu$	31.8

### Note

<sup>(1)</sup> Other values may be available, contact factory

## TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Temperature coefficient	$\text{ppm}/^\circ\text{C}$	$\pm 65$ for $100 \mu\Omega$
		$\pm 10$ for $500 \mu\Omega$
		$\pm 25$ for $1000 \mu\Omega$
Operating temperature range	$^\circ\text{C}$	-65 to +170
Thermal EMF	$\mu\text{V}/^\circ\text{C}$	$< 1.25$
Inductance	nH	$< 5$
Maximum current rating	A	$(P/R)^{1/2}$

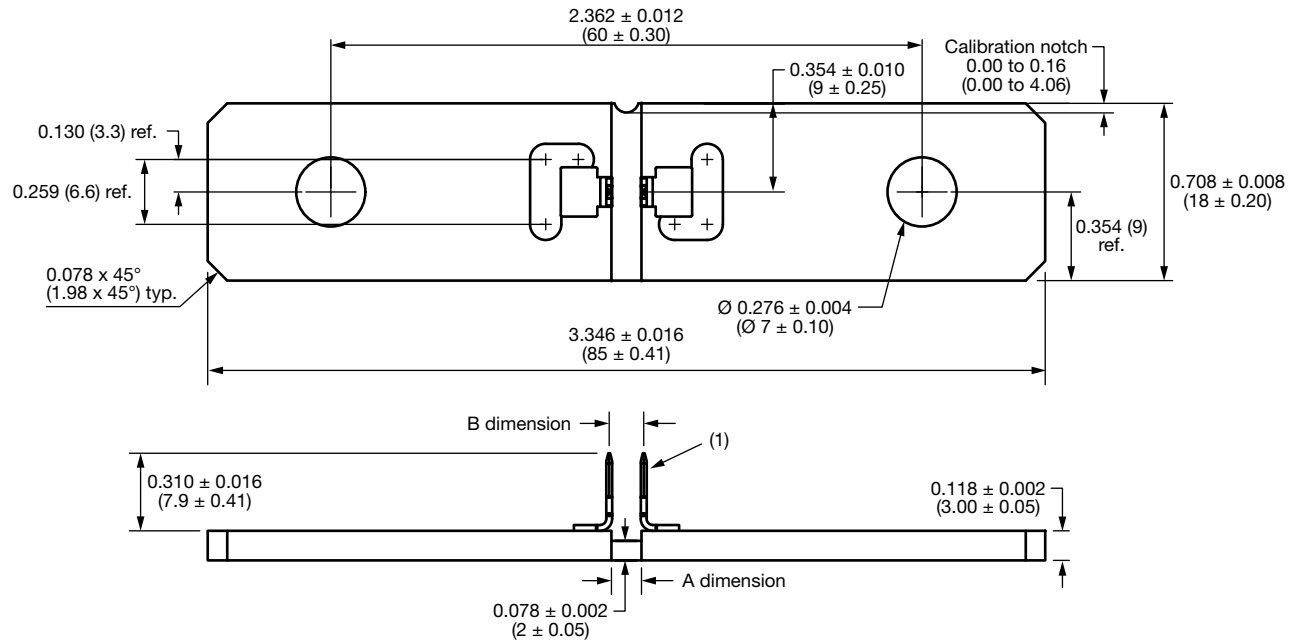
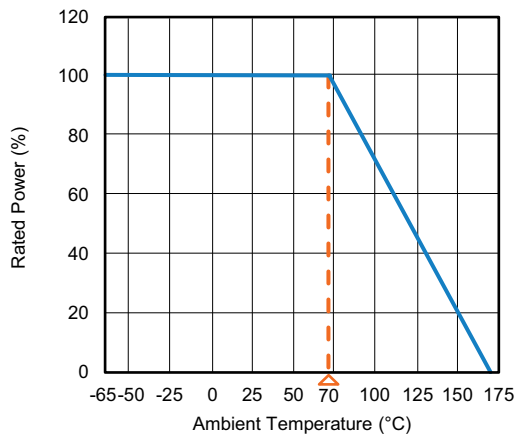
## GLOBAL PART NUMBER INFORMATION

Global Part Numbering: WSBS8518L5000JT35 (WSBS8518...35,  $0.0005 \Omega$ ,  $\pm 5 \%$ , tray pack)

W	S	B	S	8	5	1	8	L	5	0	0	0	J	T	3	5	
GLOBAL MODEL				RESISTANCE VALUE				TOLERANCE CODE				PACKAGING CODE				SPECIAL	
WSBS8518				L = mΩ L1000 = 0.000100 Ω L5000 = 0.000500 Ω 1L000 = 0.001000 Ω				J = ± 5 % K = ± 10 %				K = bulk pack T = tray pack				35 = low TCR and sense pins attached	

PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)

This Vishay product is protected by one or more United States and international patents.

**DIMENSIONS** in inches (millimeters)**DERATING**

TOLERANCES ON DECIMALS  
.xxx  $\pm$  0.005 (.x  $\pm$  0.1)

UNLESS OTHERWISE LISTED

RESISTANCE VALUE ( $\mu\Omega$ )	ELEMENT MATERIAL	A REFERENCE	B $\pm 0.005$ ( $\pm 0.13$ )
100	Ni-Cr	0.120 (3.05)	0.135 (3.43)
500	Ni-Cr	0.615 (15.62)	0.695 (17.65)
1000	Ni-Cr	0.900 (22.86)	0.980 (24.89)

**Note**

(1) Minimum pull strength of 200 N

**PERFORMANCE**

TEST	CONDITIONS OF TEST	TEST LIMITS
Thermal shock	-55 °C to +150 °C, 1000 cycles, 15 min at each extreme	$\pm 0.5\% \Delta R$
Short time overload	5 x rated power for 5 s	$\pm 0.5\% \Delta R$
Low temperature storage	-65 °C for 24 h	$\pm 0.2\% \Delta R$
High temperature exposure	1000 h at +170 °C	$\pm 1.0\% \Delta R$
Bias humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	$\pm 0.5\% \Delta R$
Mechanical shock	100 g's for 6 ms, 5 pulses	$\pm 0.2\% \Delta R$
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	$\pm 0.2\% \Delta R$
Load life	1000 h at +70 °C, 1.5 h "ON", 0.5 h "OFF"	$\pm 1.0\% \Delta R$
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7b not required	$\pm 0.2\% \Delta R$



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