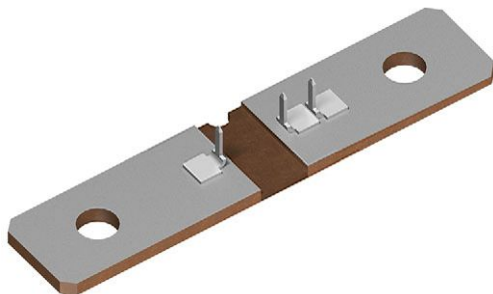




Power Metal Strip® Shunt Resistor With Three Sense Pins, Sn Plated Terminals, Very Low Value (50 $\mu\Omega$, 100 $\mu\Omega$, and 125 $\mu\Omega$)



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 $\mu\text{V}/^\circ\text{C}$ available)
- AEC-Q200 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

LINKS TO ADDITIONAL RESOURCES



STANDARD ELECTRICAL SPECIFICATIONS

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

Note

(1) Other values may be available, contact factory

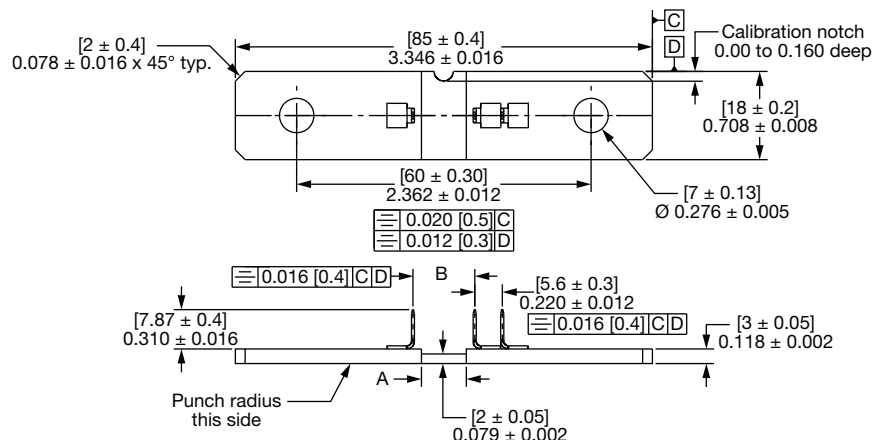
TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Temperature coefficient	ppm/°C	± 200 for 50 $\mu\Omega$ ± 175 for 100 $\mu\Omega$, 125 $\mu\Omega$
Temperature coefficient (element material)	ppm/°C	± 20
Thermal EMF	$\mu\text{V}/^\circ\text{C}$	< 1 for 50 $\mu\Omega$ and < 3 for 100 $\mu\Omega$, 125 $\mu\Omega$
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 , $\pm 5 \%$, tray pack)

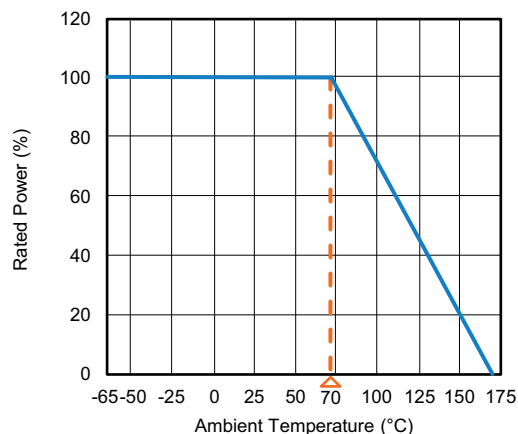
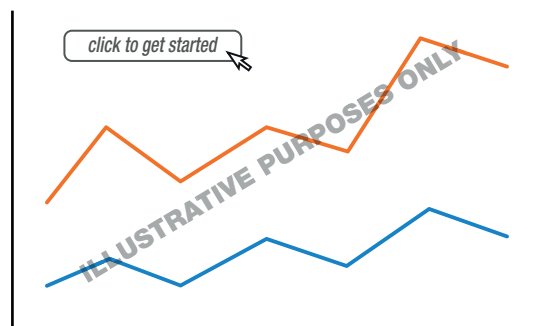
W	S	B	S	8	5	1	8	L	1	0	0	0	J	T	8	0	
GLOBAL MODEL				RESISTANCE VALUE				TOLERANCE CODE				PACKAGING CODE				SPECIAL	
WSBS8518				L = mΩ L0500 = 0.000050 Ω L1000 = 0.000100 Ω L1250 = 0.000125 Ω				J = ± 5 % K = ± 10 %				K = bulk pack T = tray pack				80 = three sense pins attached with plated terminals	

**DIMENSIONS** in inches (millimeters)**Notes**

- Plating on top / bottom is Sn $2.5 \mu\text{m}$ to $8.0 \mu\text{m}$ over Ni $0.5 \mu\text{m}$ to $4.0 \mu\text{m}$, edges are not plated
- Minimum pull strength of sense pins is 200 N

RESISTANCE VALUE ($\mu\Omega$)	ELEMENT MATERIAL	A REFERENCE	B $\pm 0.005 (\pm 0.13)$
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
 $.xxx \pm 0.005$ ($.x \pm 0.1$)
 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	$\pm 0.5 \% \Delta R$
Short time overload	5 x rated power for 5 s	$\pm 0.5 \% \Delta R$
	10 x rated power for 5 s	$\pm 1.0 \% \Delta R$
Low temperature storage	-65 °C for 24 h	$\pm 0.5 \% \Delta R$
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	$\pm 0.5 \% \Delta R$
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	$\pm 0.5 \% \Delta R$
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	$\pm 0.5 \% \Delta R$



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