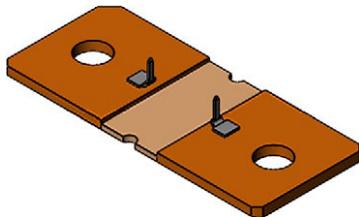


## Power Metal Strip® Battery Shunt Resistor With Two Sense Pins Very Low Value (25 $\mu\Omega$ , 50 $\mu\Omega$ , 100 $\mu\Omega$ , and 125 $\mu\Omega$ )



### FEATURES

- High power to resistor size ratio
- Proprietary processing technique produces extremely low resistance values
- All welded construction
- Solid metal manganese-copper alloy resistive element with low TCR (< 20 ppm/ $^{\circ}\text{C}$ )
- Very low inductance (< 5 nH)
- Low thermal EMF (< 3  $\mu\text{V}/^{\circ}\text{C}$ )
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



### LINKS TO ADDITIONAL RESOURCES



3D Models



Design Tools

### 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
WSBS8536...20	8536	50	5, 10	25 $\mu$ to 125 $\mu$	25 $\mu$ , 50 $\mu$ , 100 $\mu$ , 125 $\mu$	25 $\mu$ = 77.5, 50 $\mu$ = 75.5, 100 $\mu$ / 125 $\mu$ = 71.5

#### Note

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

### TECHNICAL SPECIFICATIONS

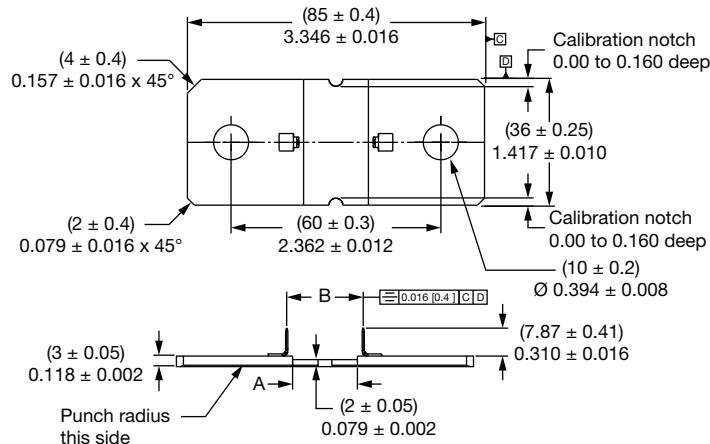
PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Temperature coefficient	ppm/ $^{\circ}\text{C}$	$\pm$ 200 for 25 $\mu\Omega$
		$\pm$ 175 for 50 $\mu\Omega$
		$\pm$ 165 for 100 $\mu\Omega$ / 125 $\mu\Omega$
Temperature coefficient (element material)	ppm/ $^{\circ}\text{C}$	$\pm$ 20
Operating temperature range	$^{\circ}\text{C}$	-65 to +170
Maximum current rating	A	$(P/R)^{1/2}$

### GLOBAL PART NUMBER INFORMATION

Global Part Numbering: WSBS8536L1000JT20 (WSBS8536...20, 0.000100  $\Omega$ ,  $\pm$  5 %, tray pack)

W	S	B	S	8	5	3	6	L	1	0	0	0	J	T	2	0	
GLOBAL MODEL				RESISTANCE VALUE				TOLERANCE CODE				PACKAGING CODE				SPECIAL	
WSBS8536				$L = \text{m}\Omega$ L0500 = 0.000050 $\Omega$ L1000 = 0.000100 $\Omega$ L1250 = 0.000125 $\Omega$ L2500 = 0.000250 $\Omega$				$J = \pm 5\%$ $K = \pm 10\%$				T = tray pack K = bulk pack				20 = two sense pins attached	

**DIMENSIONS** in inches (millimeters)

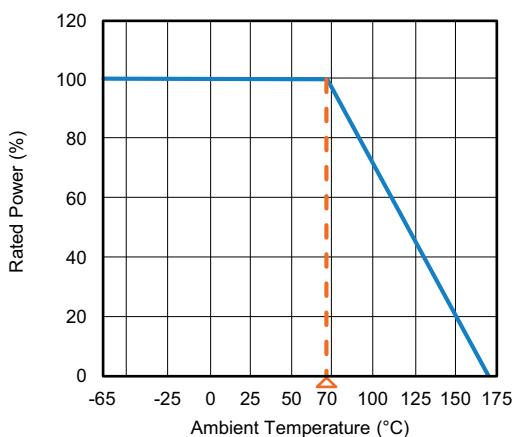


RESISTANCE VALUE ( $\mu\Omega$ )	ELEMENT MATERIAL	A REFERENCE	B $\pm 0.005$ ( $\pm 0.13$ )
25	Mn-Cu	0.145 (3.683)	0.135 (3.429)
50	Mn-Cu	0.360 (9.144)	0.492 (12.496)
100	Mn-Cu	0.730 (18.542)	0.862 (21.894)
125	Mn-Cu	0.900 (22.860)	1.032 (26.212)

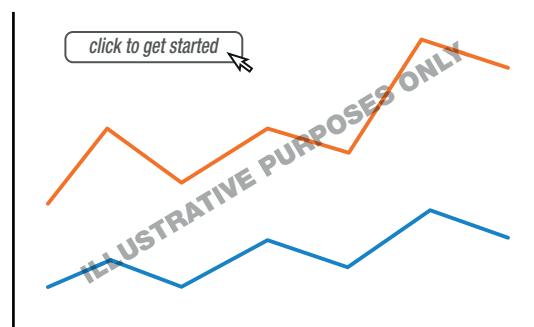
## TOLERANCES ON DECIMALS

UNLESS OTHERWISE LISTED

## DETERATING



## **PULSE CAPABILITY**



[www.vishay.com/resistors/large-shunt-power-metal-strip-calculator/](http://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 % ΔR
Short time overload	5 x rated power for 5 s	± 0.5 % ΔR
Low temperature storage	-65 °C for 24 h	± 0.5 % ΔR
High temperature exposure	1000 h at +170 °C	± 1.0 % ΔR
Bias humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	± 0.5 % ΔR
Mechanical shock	100 g's for 6 ms, 5 pulses	± 0.5 % ΔR
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	± 0.5 % ΔR
Load life	1000 h at +70 °C, 1.5 h "ON", 0.5 h "OFF"	± 1.0 % ΔR
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7b not required	± 0.5 % ΔR

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