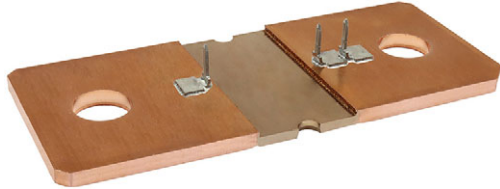




Power Metal Strip® Battery Shunt Resistor With Three Sense Pins Very Low Value (25 $\mu\Omega$, 50 $\mu\Omega$, 100 $\mu\Omega$, and 125 $\mu\Omega$)



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/°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



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
WSBS8536...40	8536	50	5, 10	25 μ to 125 μ	25 μ , 50 μ , 100 μ , 125 μ	25 μ = 77.7, 50 μ = 75.7, 100 μ / 125 μ = 71.7

Note

⁽¹⁾ Other values may be available, contact factory

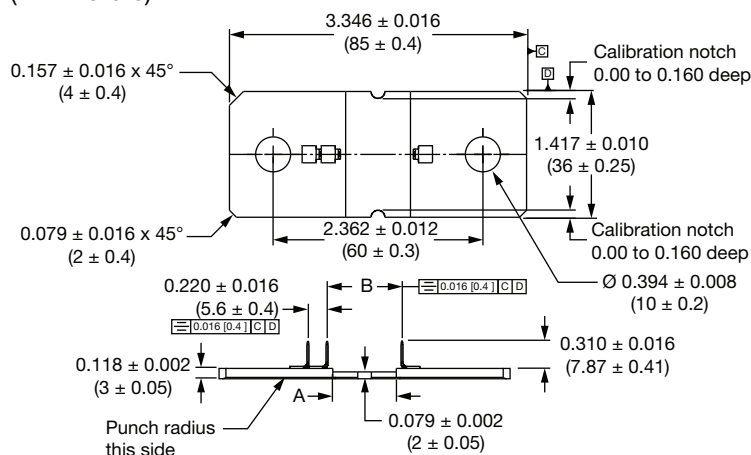
TECHNICAL SPECIFICATIONS

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

GLOBAL PART NUMBER INFORMATION

Global Part Numbering: WSBS8536L1000JT40 (WSBS8536...40, 0.000100 Ω , $\pm 5 \%$, tray pack)

W	S	B	S	8	5	3	6	L	1	0	0	0	J	T	4	0
GLOBAL MODEL				RESISTANCE VALUE				TOLERANCE CODE				PACKAGING CODE				SPECIAL
WSBS8536				L = m Ω L0500 = 0.000050 Ω L1000 = 0.000100 Ω L1250 = 0.000125 Ω L2500 = 0.000250 Ω				J = $\pm 5 \%$ K = $\pm 10 \%$				T = tray pack K = bulk pack				40 = three sense pins attached

**DIMENSIONS** in inches (millimeters)**Note**

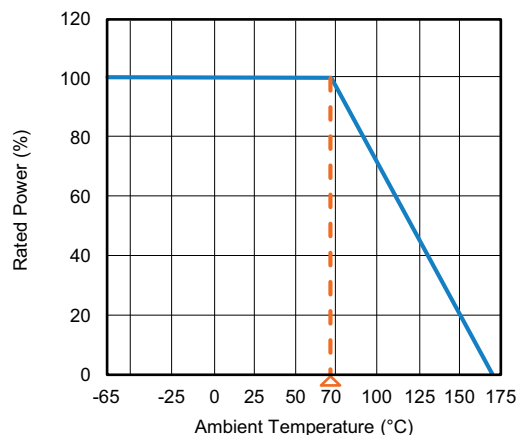
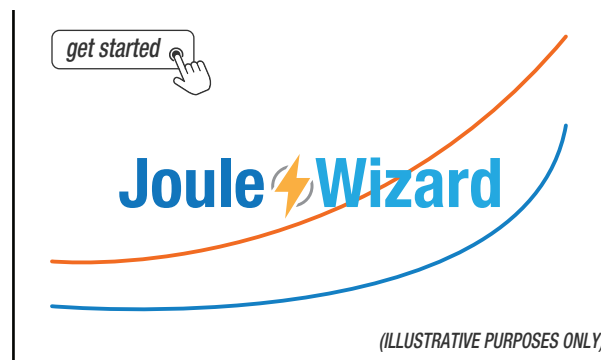
- Minimum pull strength of sense pins is 200 N

RESISTANCE VALUE ($\mu\Omega$)	ELEMENT MATERIAL	A REFERENCE	B ± 0.005 (± 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

.xxx ± 0.005 (.x ± 0.1)

UNLESS OTHERWISE LISTED

DERATING**PULSE CAPABILITY**
www.vishay.com/en/resistors/joulewizard/

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	$\pm 0.5\% \Delta R$
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	$\pm 0.5\% \Delta R$

**AVAILABLE CATALOG OPTIONS**

GLOBAL MODEL	SPECIAL	
WSBS8536	Cu terminals	www.vishay.com/doc?30395
WSBS8536...14	Sn plated	www.vishay.com/doc?30396
WSBS8536...20	Two sense pins	www.vishay.com/doc?30397
WSBS8536...40	Three sense pins	www.vishay.com/doc?30398
WSBS8536...60	Two sense pins, Sn plated	www.vishay.com/doc?30411
WSBS8536...80	Three sense pins, Sn plated	www.vishay.com/doc?30414

LINKS TO RELATED DOCUMENTS

TECHNICAL NOTES	
The Benefit of Using a Three Sense Pin Design on Battery / Meter Shunt Resistors	www.vishay.com/doc?30381
WHITE PAPERS	
Temperature Coefficient of Resistance for Current Sensing	www.vishay.com/doc?30405



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.