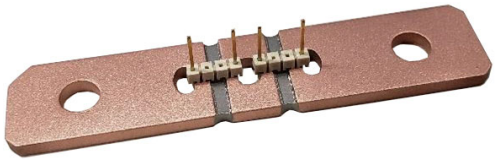
Power Metal Strip® Shunt Resistor, Low TCR (Down to < ± 10 ppm/°C), Very Low Value (Down to 15 μΩ)



FEATURES

- Duel element for redundant current sensing
- High power to resistor size ratio
- Proprietary processing technique produces extremely low resistance values
- All welded construction
- Solid metal nickel-chrome alloy resistive element with unique design for low TCR (down to ± 10 ppm/°C)
- Very low inductance (< 5 nH)
- Low thermal EMF (as low as < 1.25 μV/°C)
- AEC-Q200 qualified
- PATENT(S): www.vishay.com/patents
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

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

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	SIZE	POWER RATING (1) $P_{70\,°C}$ W	TOLERANCE ± %	RESISTANCE VALUE RANGE Ω	RESISTANCE VALUES CURRENTLY AVAILABLE (2) PER ELEMENT Ω	WEIGHT (typical) g
WSBR8518	8518	30	5	30μ to 100μ	100μ	36
WSBR8536	8536	40	5	15μ to 50μ	50μ	72

Notes

(1) Total power rating (half per element)
(2) Other values may be available, contact factory

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR CHARACTERISTICS	
		WSBR8518	WSBR8536
Temperature coefficient	ppm/°C	± 10 for 100 μΩ	± 10 for 50 μΩ
Operating temperature range	°C	-65 to +170	
Thermal EMF	μV/°C	< 1.25	
Inductance	nH	< 5	
Maximum current rating	A	$(P/R)^{1/2}$	

GLOBAL PART NUMBER INFORMATION

GLOBAL PART NUMBERING: WSBR8518L1000JTA4 (WSBR8518....A4, 0.0001 Ω)

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

GLOBAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING CODE	SPECIAL	PLATING OPTIONS
WSBR8518	**L** = mΩ **L1000** = 0.0001 Ω	**J** = ± 5 %	**K** = bulk pack **T** = tray pack	Blank = no pins **A4** = 4 pins **B4** = 4 pins	Blank = unplated **P** = tin plated

PATENT(S): www.vishay.com/patents
This Vishay product is protected by one or more United States and international patents.

For technical questions, contact: ww2cresistors@vishay.com
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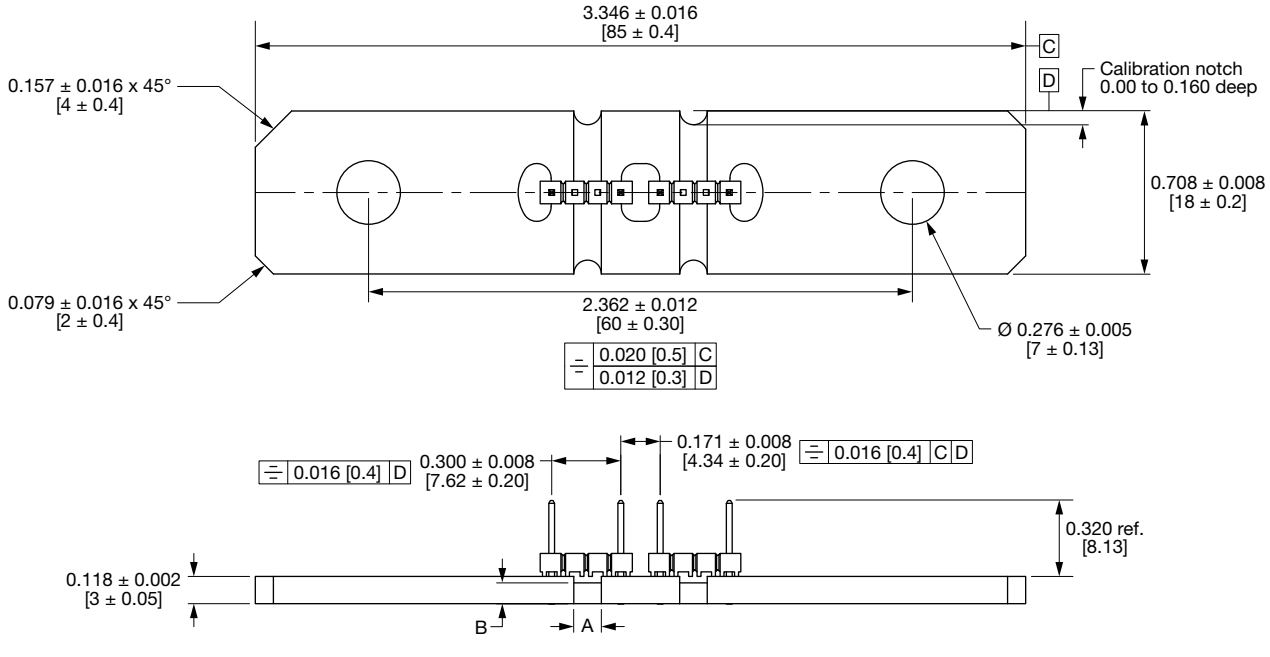
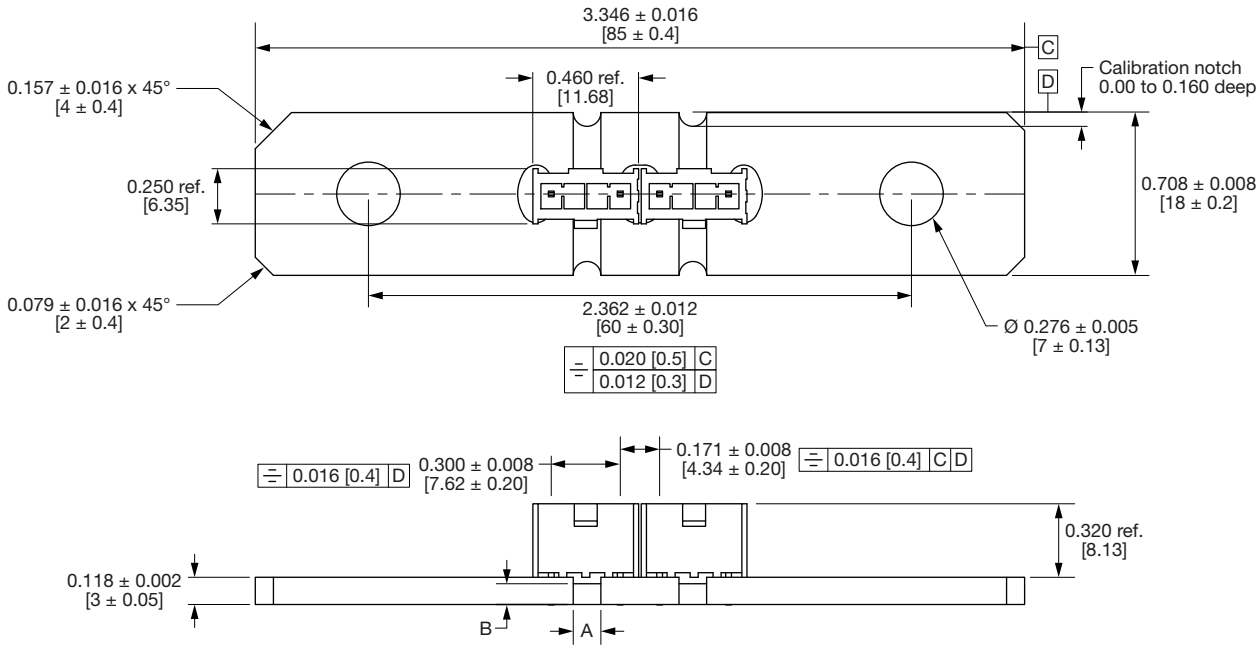
DIMENSIONS in inches (millimeters)



WSBR8518L1000JTA4



WSBR8518L1000JTB4

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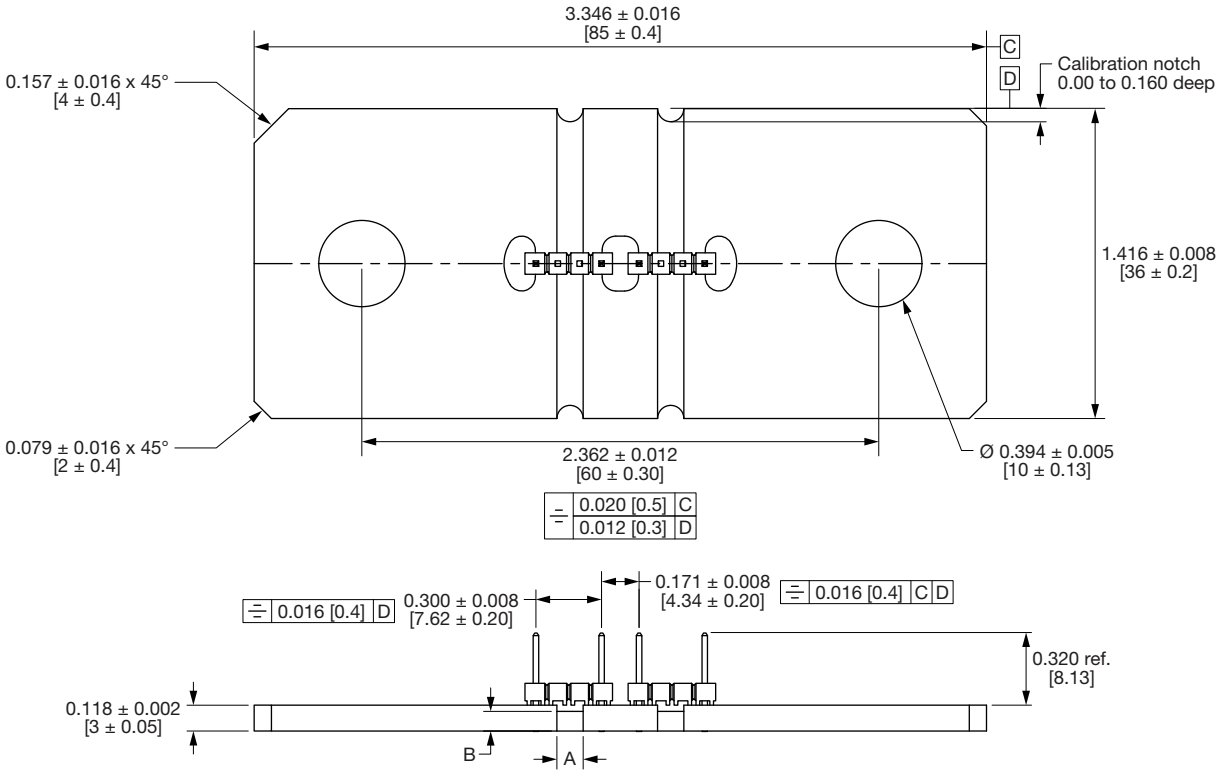
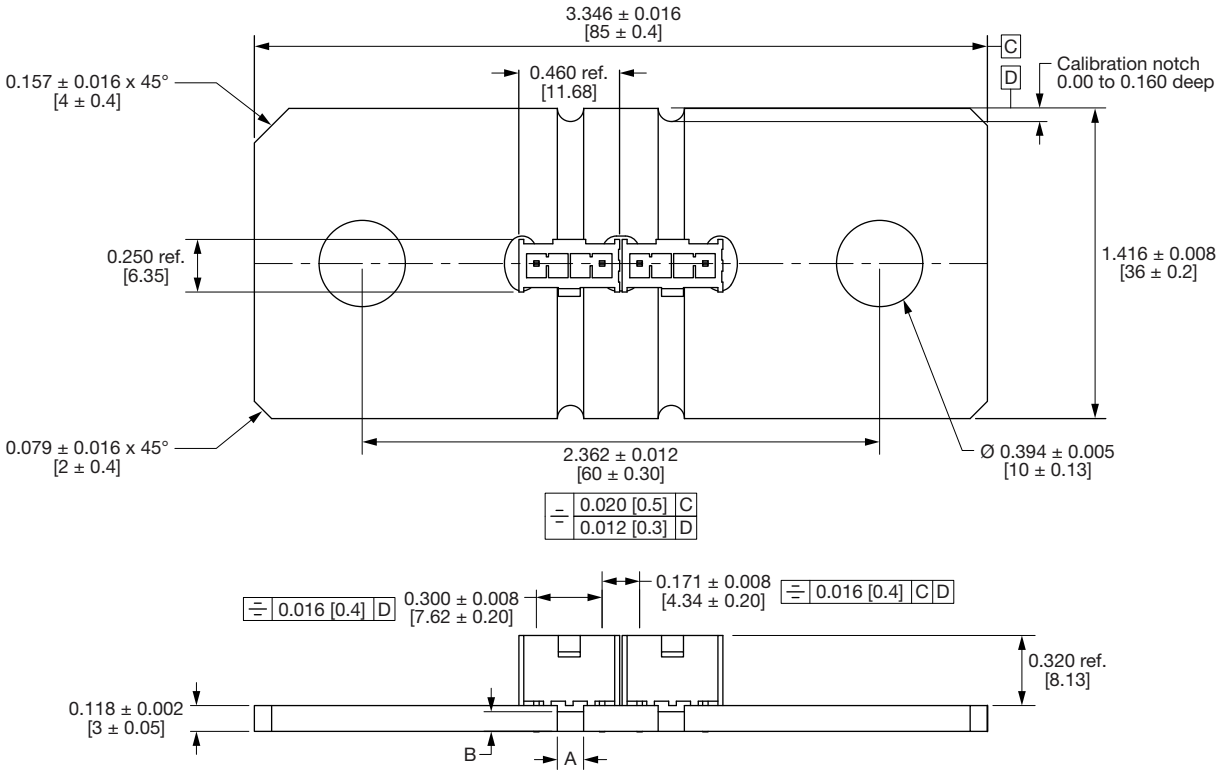


WSBR8536L0500JTA4



WSBR8536L0500JTB4

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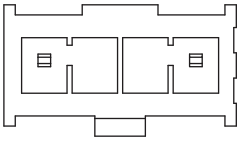
CONNECTION OPTIONS

Voltage sense pins in position 1 and 4, position 2 and 3 are blank.

A Series



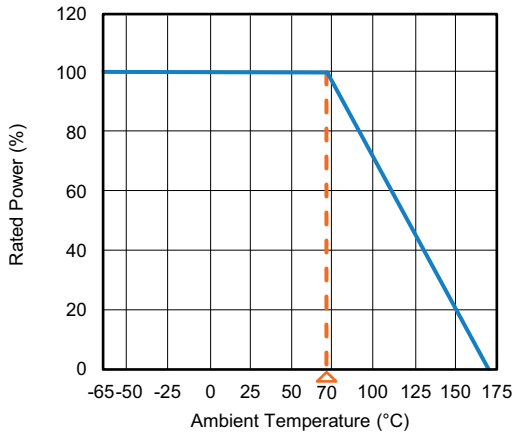
Voltage sense pins in position 1 and 4, position 2 and 3 are blank.

B Series

Note

- Connection options are examples. Other configurations available upon request (links to external website)
  - A series connector - modified with the middle two pins removed
  - B series connector - modified with the middle two pins removed
  - B series female connector
  - Connector specifications datasheet
- Reference Designs | Vishay - click for the landing page of all Vishay provided reference designs
- High Voltage Intelligent Battery Shunt Sensor - (HV-IBSS-CANFD) Reference Design - click for a BMS reference design using CANBUS communication protocol

DERATING



SIZE	RESISTANCE VALUE PER ELEMENT (μΩ)	ELEMENT MATERIAL	A REF.	B REF.
8518	100	NiCr	0.120 (3.05)	0.090 (2.29)
8536	50	NiCr	0.120 (3.05)	0.090 (2.29)

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	5 x rated power for 5 s	± 0.5 % Δ*R*
Low temperature storage	-65 °C for 24 h	± 0.2 % 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	± 0.2 % Δ*R*
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	± 0.2 % 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	± 0.2 % Δ*R*

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