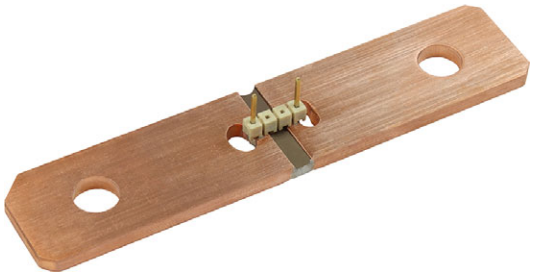
Power Metal Strip® Shunt Resistor, Low TCR (Down to < ± 10 ppm/°C), Very Low Value (Down to 15 µΩ)



FEATURES

- High power capability that enables current sensing to 1825 A
- 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)

LINKS TO ADDITIONAL RESOURCES

3D Models | Infographics | Reference Designs

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	SIZE	POWER RATING $P_{70\,°C}$ W	TOLERANCE ± %	RESISTANCE VALUE RANGE Ω	RESISTANCE VALUES CURRENTLY AVAILABLE (1) Ω	WEIGHT (typical) g
WSBE8518	8518	36	5	30µ to 100µ	100µ	36
WSBE8536	8536	50	5	15µ to 50µ	50µ	72

Note

(1) Other values may be available, contact factory

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR CHARACTERISTICS	
		WSBE8518	WSBE8536
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: WSBE8518L1000JTA2 (WSBE8518...A2, 0.0001 Ω, ± 5 %, tray pack)

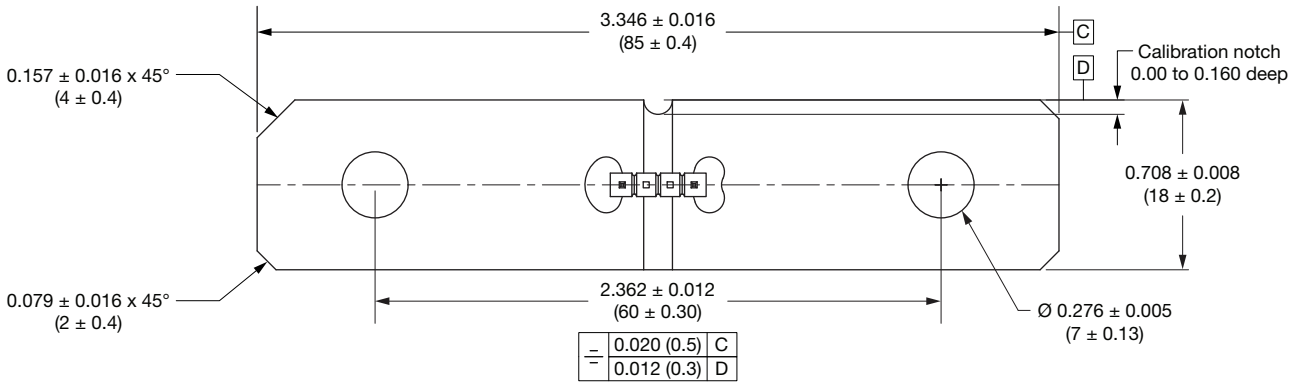
W	S	B	E	8	5	1	8	L	1	0	0	0	J	T	A	2	

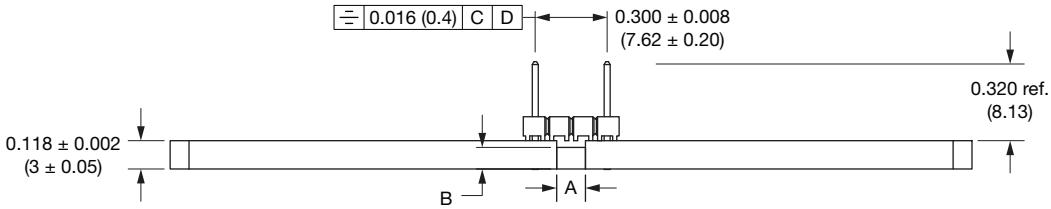
GLOBAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING CODE	SPECIAL	PLATING OPTIONS
WSBE8518 **WSBE8536**	**L** = mΩ **L1000** = 0.0001 Ω	**J** = ± 5 %	**K** = bulk pack **T** = tray pack	Blank = no pins **A2 / A3** = 2 / 3 pins **B2 / B3** = 2 / 3 shrouded header pins	Blank = unplated **P** = tin plated

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

DIMENSIONS in inches (millimeters)





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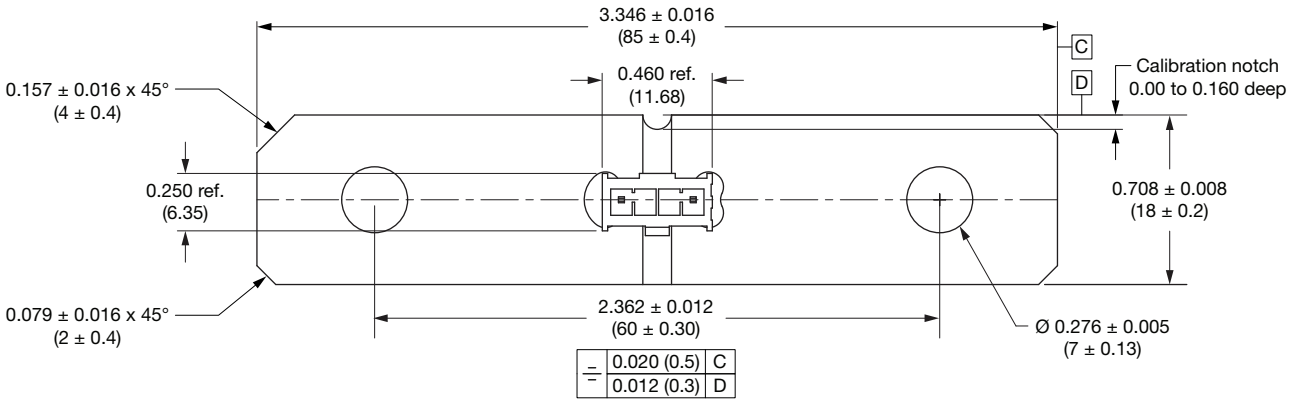

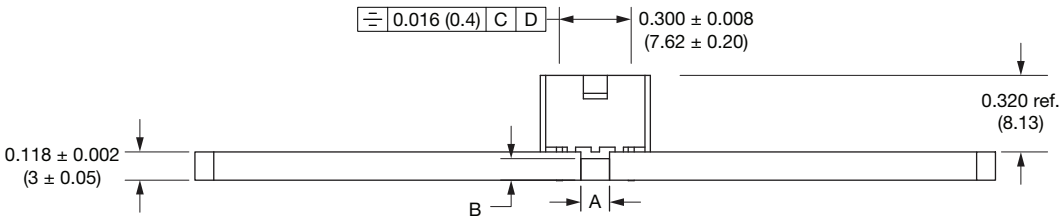

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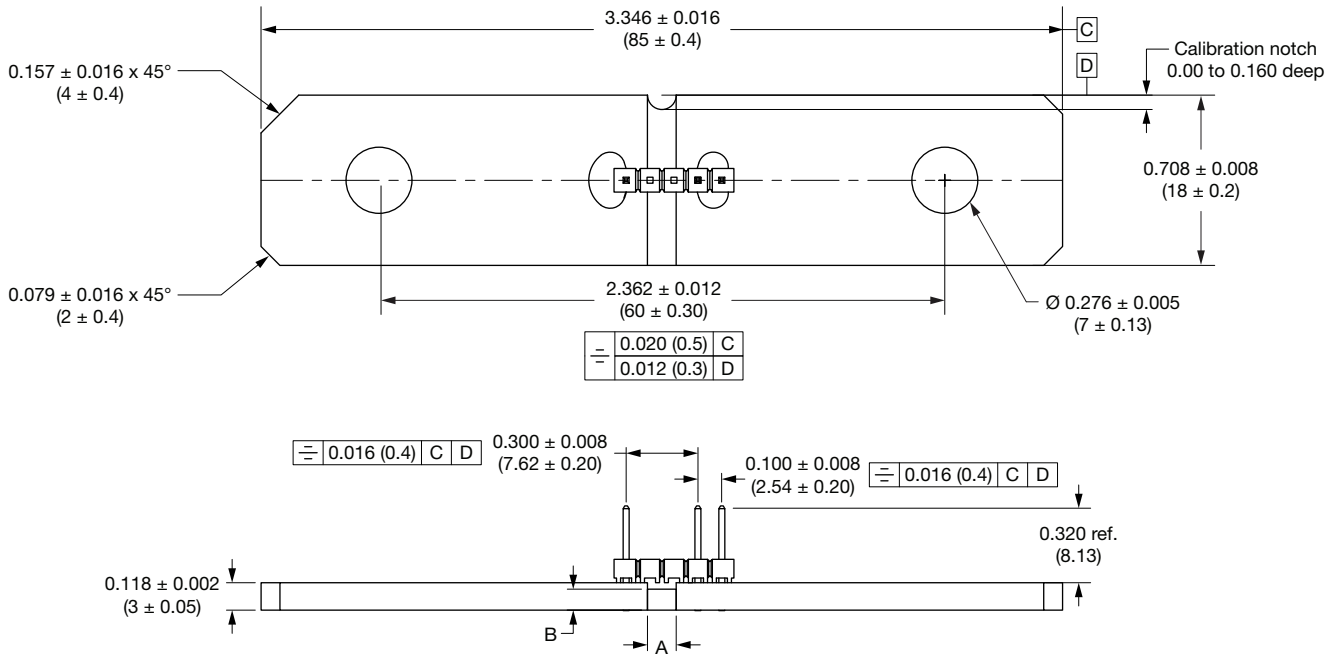

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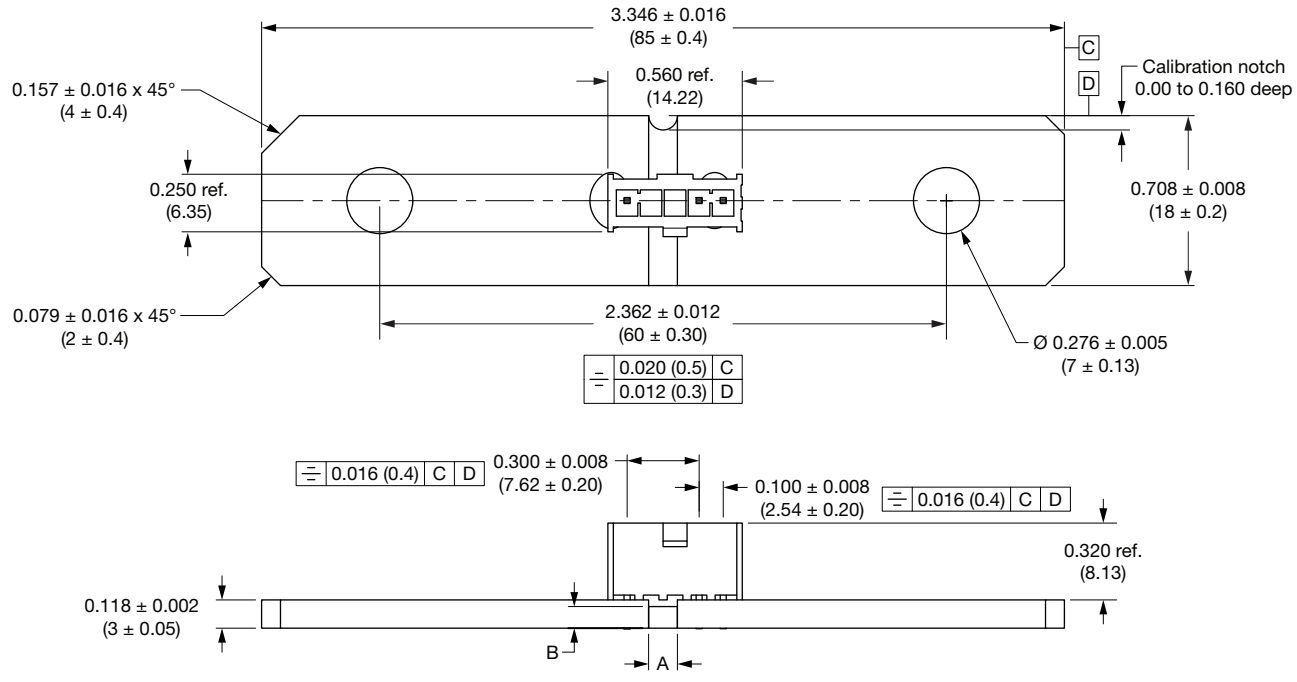
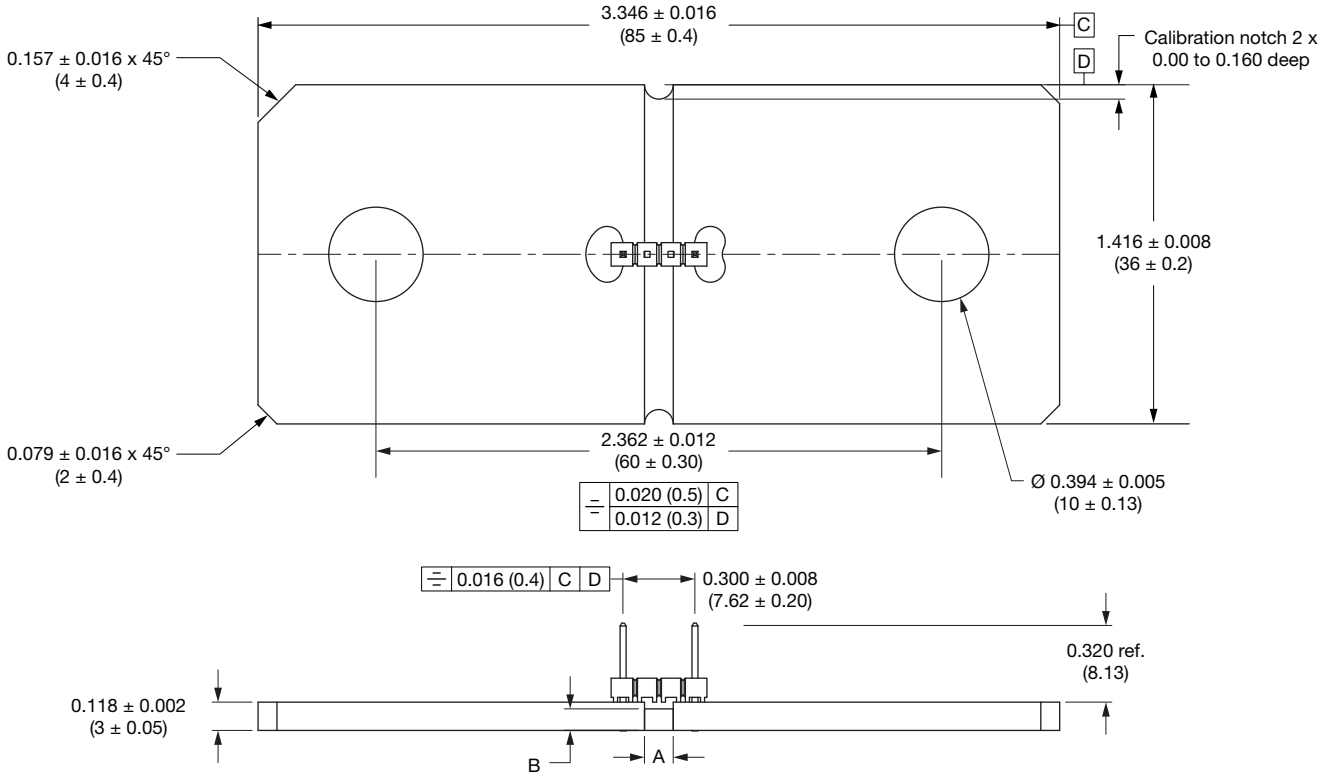
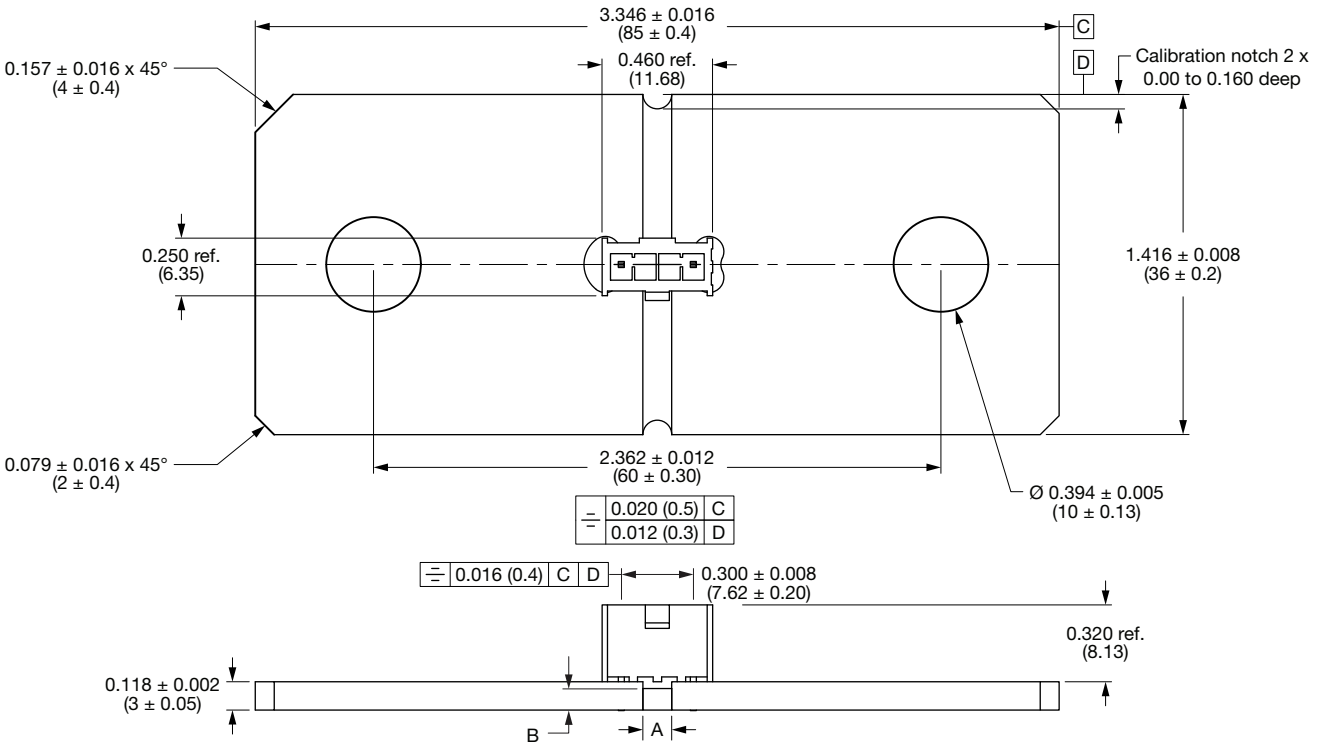


WSBE8518L1000JTB3P



WSBE8536L0500JTA2



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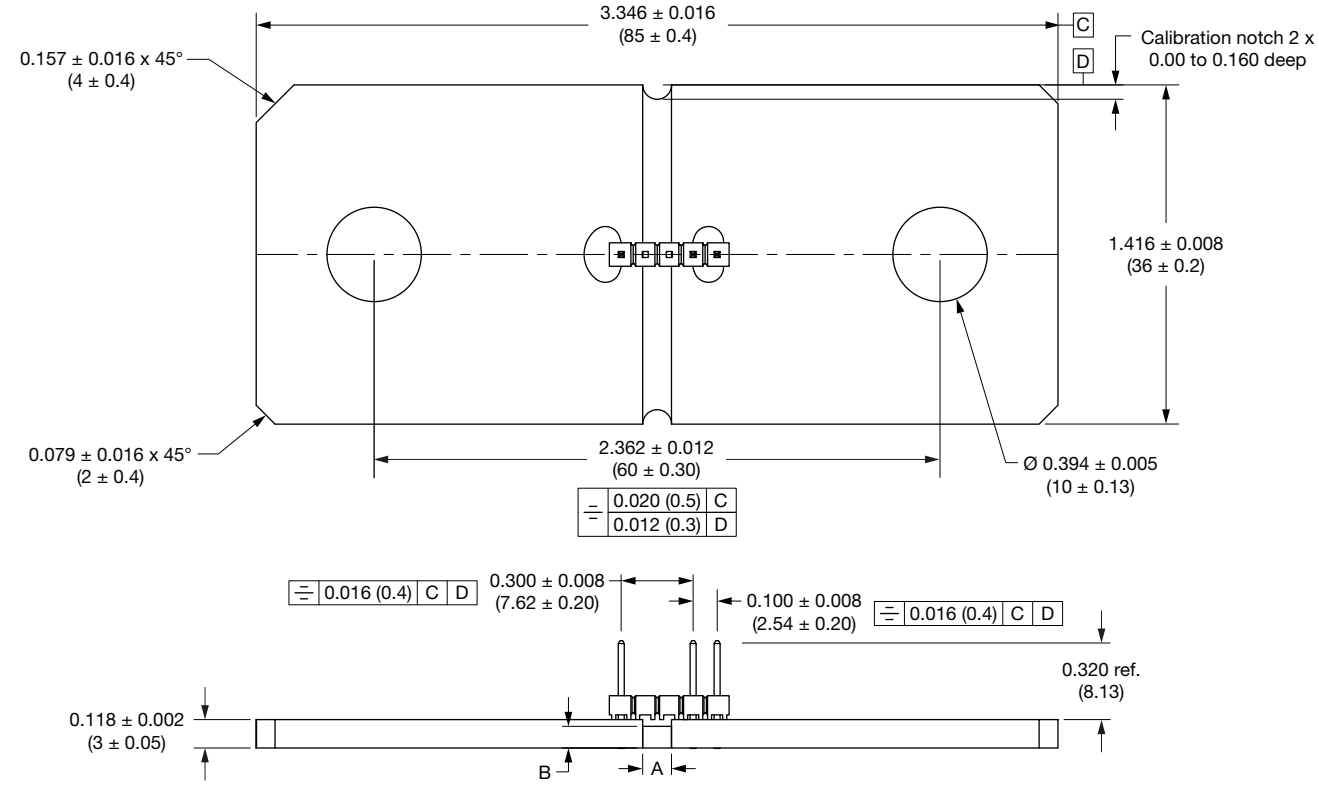

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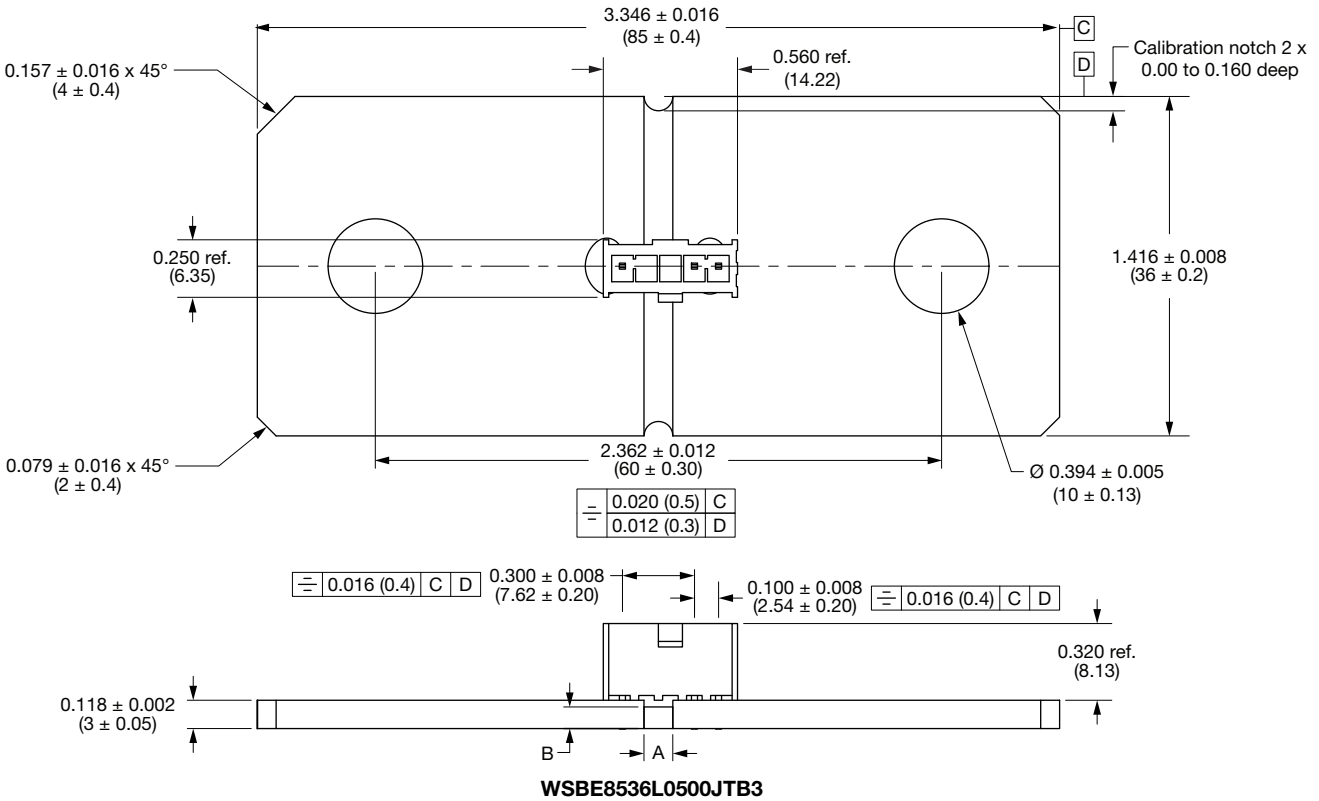
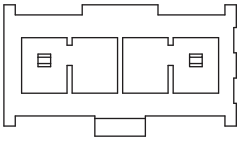


WSBE8536L0500JTB3

CONNECTION OPTIONS

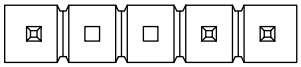
Voltage sense pins in position 1 and 4,
position 2 and 3 are blank.

A Series



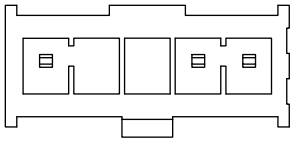
Voltage sense pins in position 1 and 4,
position 2 and 3 are blank.

B Series



Voltage sense pins in position 1 and 4,
ground pin in position 5,
position 2 and 3 are blank.

A3 Series



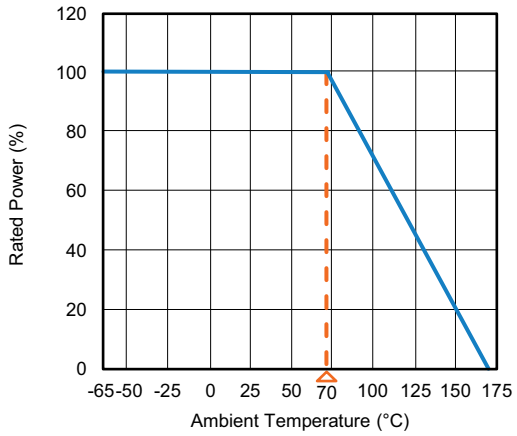
Voltage sense pins in position 1 and 4,
ground pin in position 5,
position 2 and 3 are blank.

B3 Series

Notes

- 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

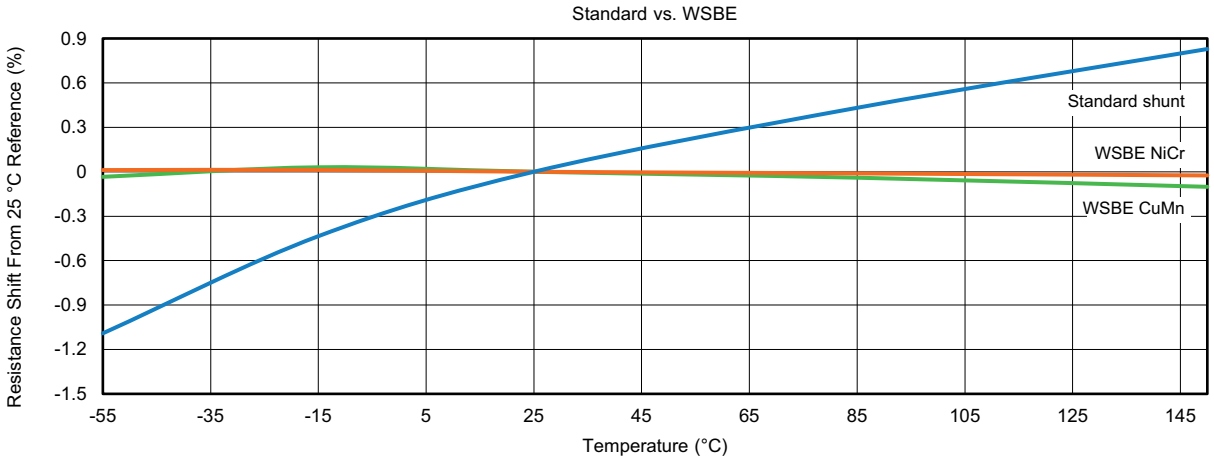


SIZE	RESISTANCE VALUE (μΩ)	ELEMENT MATERIAL	A REF.	B REF.
8518	100	NiCr	0.120 (3.05)	0.090 (2.29)
8536	50	NiCr	0.120 (3.05)	0.090 (2.29)

TOLERANCES ON DECIMALS
.xxx ± 0.005 [.x ± 0.1]

UNLESS OTHERWISE LISTED

TCR COMPARISON



Note

- www.vishay.com/doc?30405 - click for more information on TCR and the way it affects your application

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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