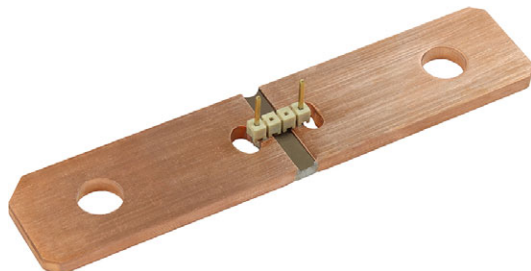


# Power Metal Strip® Shunt Resistor, Low TCR (Down to $< \pm 10 \text{ ppm}/^\circ\text{C}$ ), Very Low Value (Down to $15 \mu\Omega$ )



## 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  $\pm 10 \text{ ppm}/^\circ\text{C}$ )
- Very low inductance ( $< 5 \text{ nH}$ )
- Low thermal EMF (as low as  $< 1.25 \mu\text{V}/^\circ\text{C}$ )
- AEC-Q200 qualified
- PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://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 $\Omega$	RESISTANCE VALUES CURRENTLY AVAILABLE <sup>(1)</sup> $\Omega$	WEIGHT (typical) g
WSBE8518	8518	36	5	$30\mu$ to $100\mu$	$100\mu$	36
WSBE8536	8536	50	5	$15\mu$ to $50\mu$	$50\mu$	72

### Note

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

## TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR CHARACTERISTICS	
		WSBE8518	WSBE8536
Temperature coefficient	$\text{ppm}/^\circ\text{C}$	$\pm 10$ for $100 \mu\Omega$	$\pm 10$ for $50 \mu\Omega$
Operating temperature range	$^\circ\text{C}$	$-65$ to $+170$	
Thermal EMF	$\mu\text{V}/^\circ\text{C}$	$< 1.25$	
Inductance	nH	$< 5$	
Maximum current rating	A	$(P/R)^{1/2}$	

## GLOBAL PART NUMBER INFORMATION

GLOBAL PART NUMBERING: WSBE8518L1000JTA2 (WSBE8518...A2,  $0.0001 \Omega$ ,  $\pm 5 \%$ , tray pack)

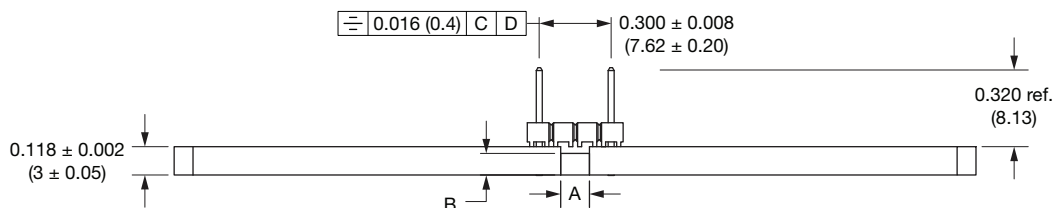
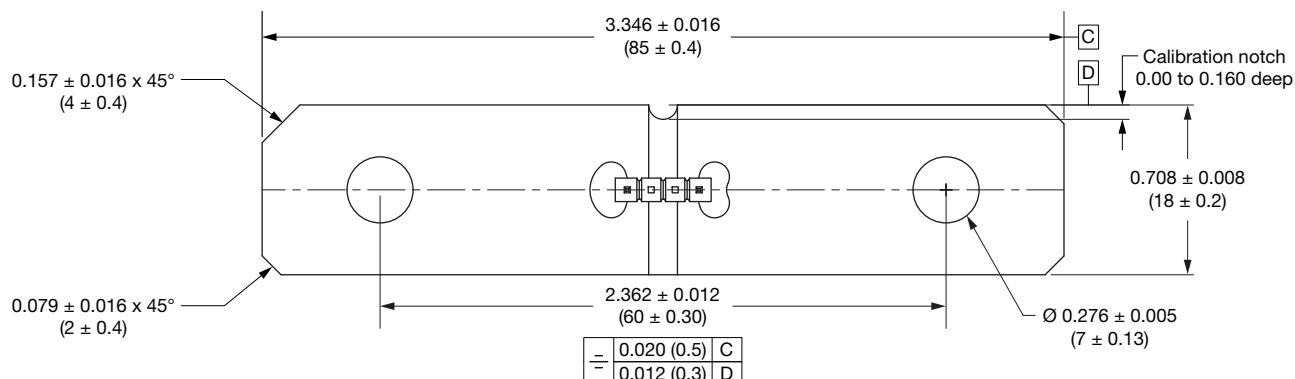
W	S	B	E	8	5	1	8	L	1	0	0	0	J	T	A	2	
GLOBAL MODEL		RESISTANCE VALUE		TOLERANCE CODE		PACKAGING CODE		SPECIAL		PLATING OPTIONS							
WSBE8518 WSBE8536		L = mΩ L1000 = 0.0001 Ω		J = ± 5 %		K = bulk pack T = tray pack		Blank = no pins A2 / A3 = 2 / 3 pins B2 / B3 = 2 / 3 shrouded header pins		Blank = unplated P = tin plated							

PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)

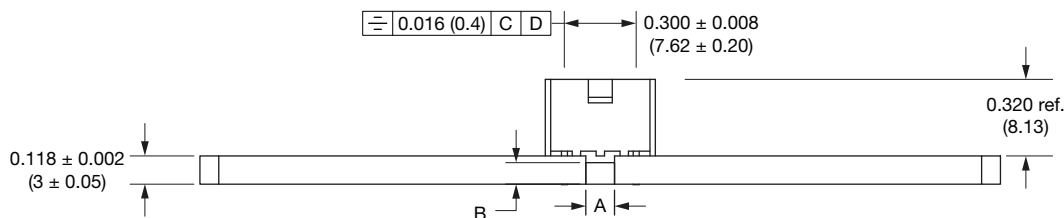
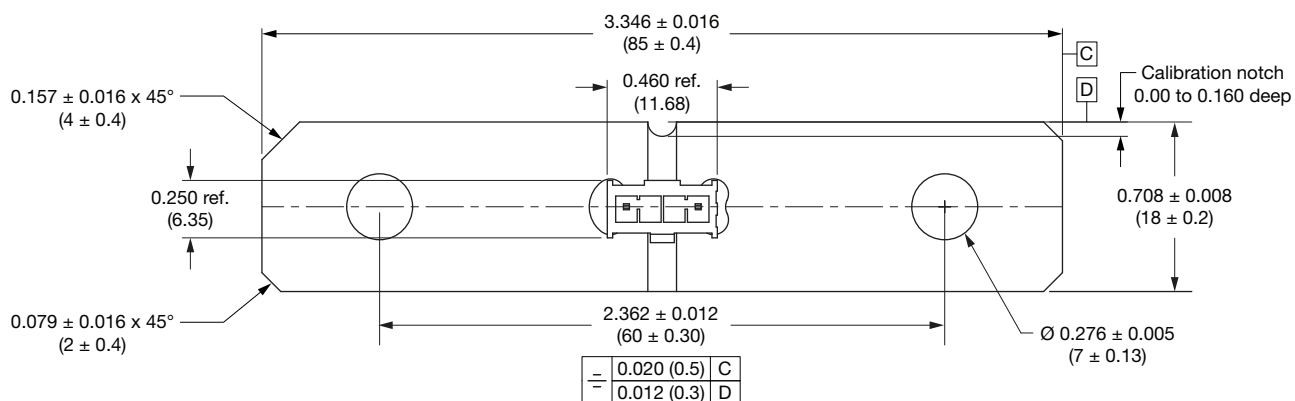
This Vishay product is protected by one or more United States and international patents.



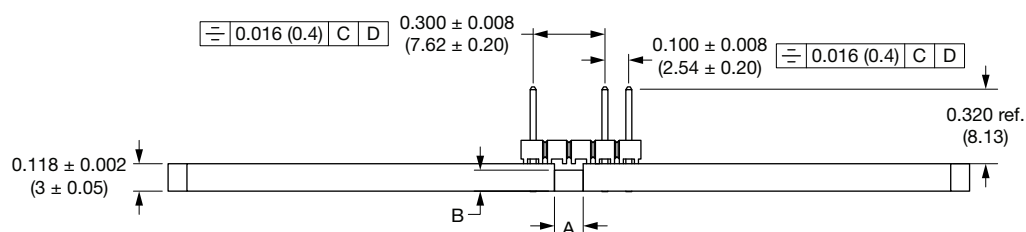
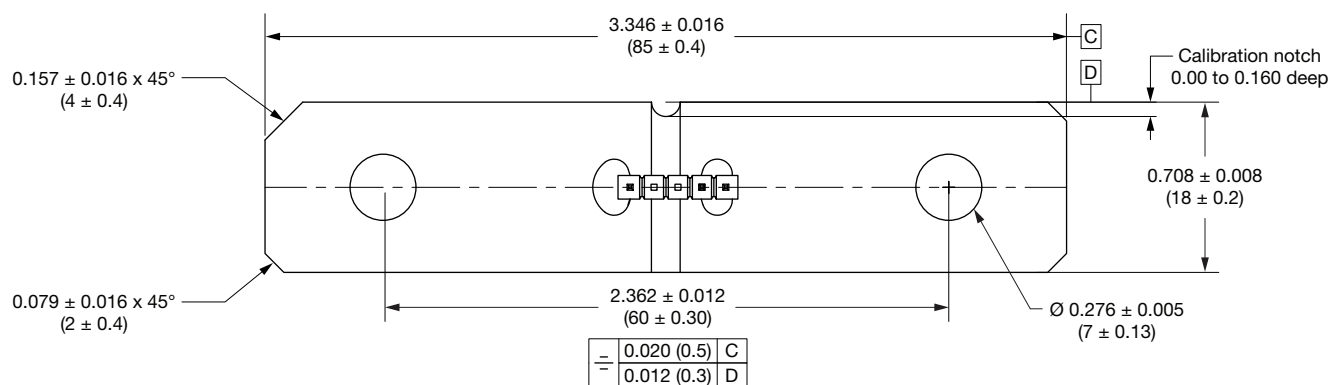
**DIMENSIONS** in inches (millimeters)



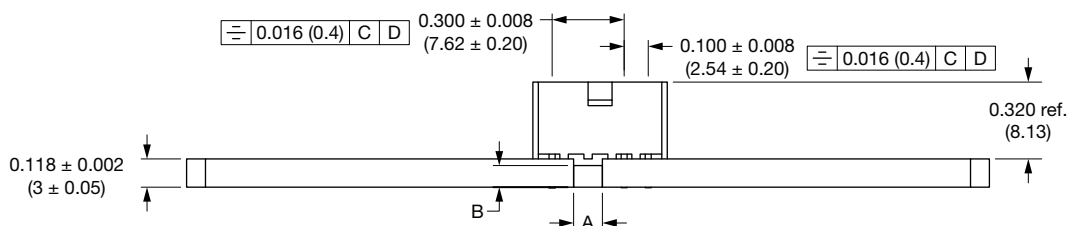
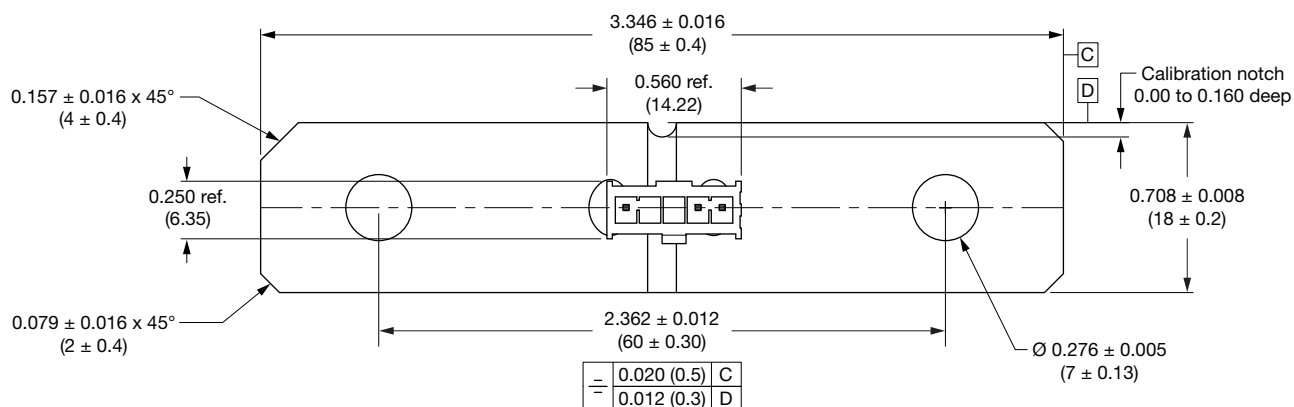
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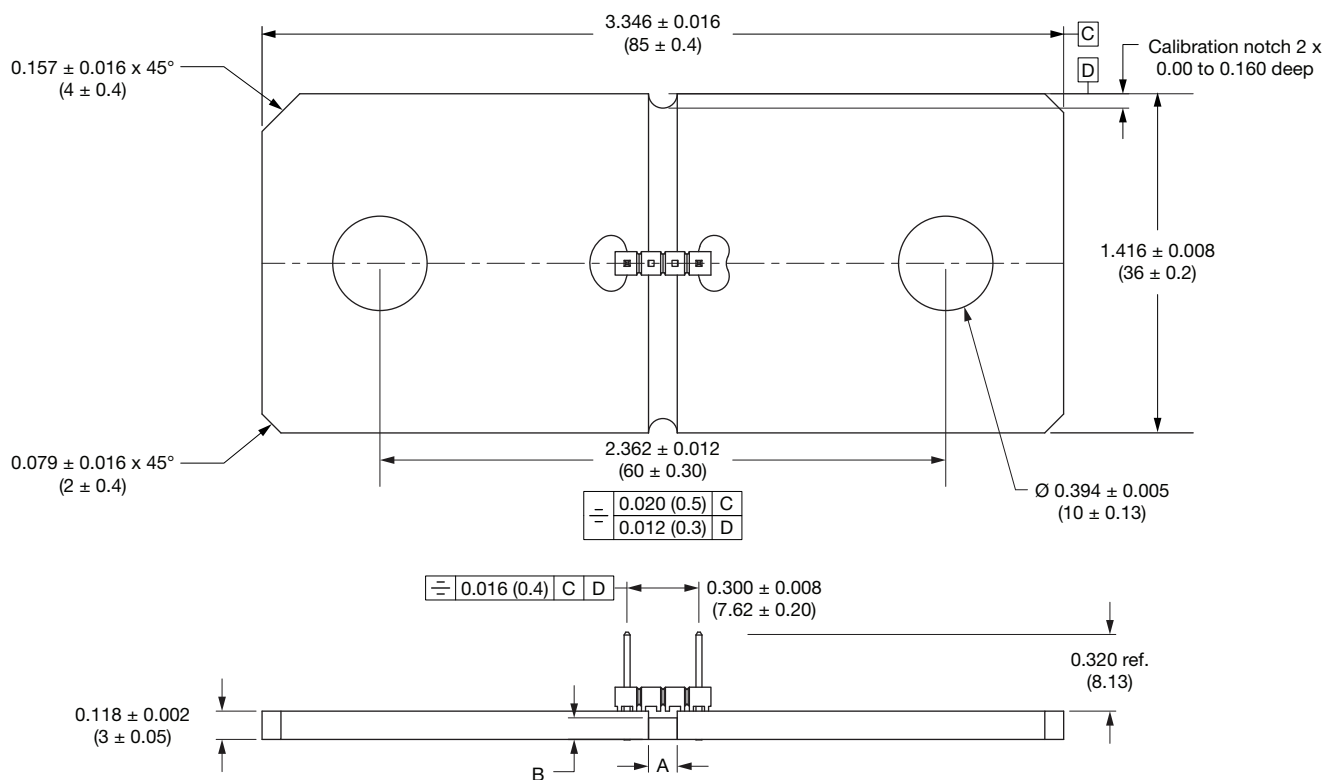
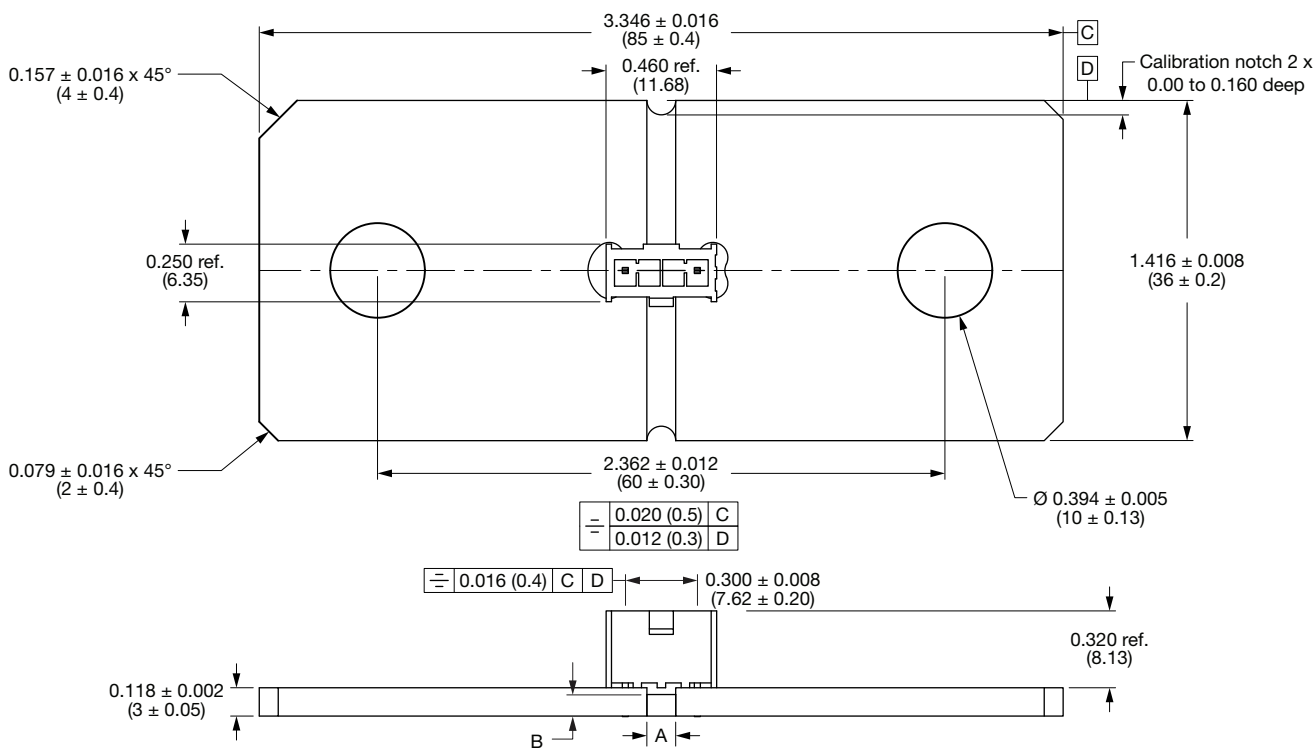
**WSBE8518L1000JTB2P**

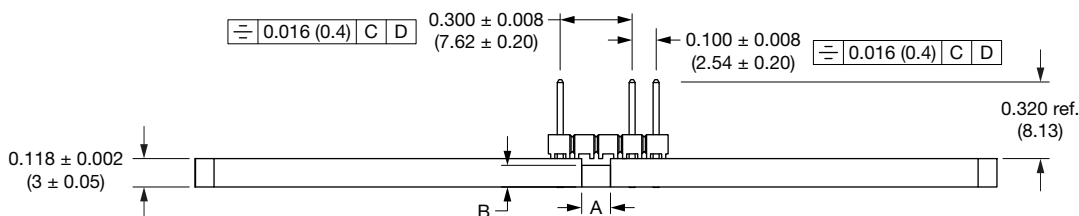
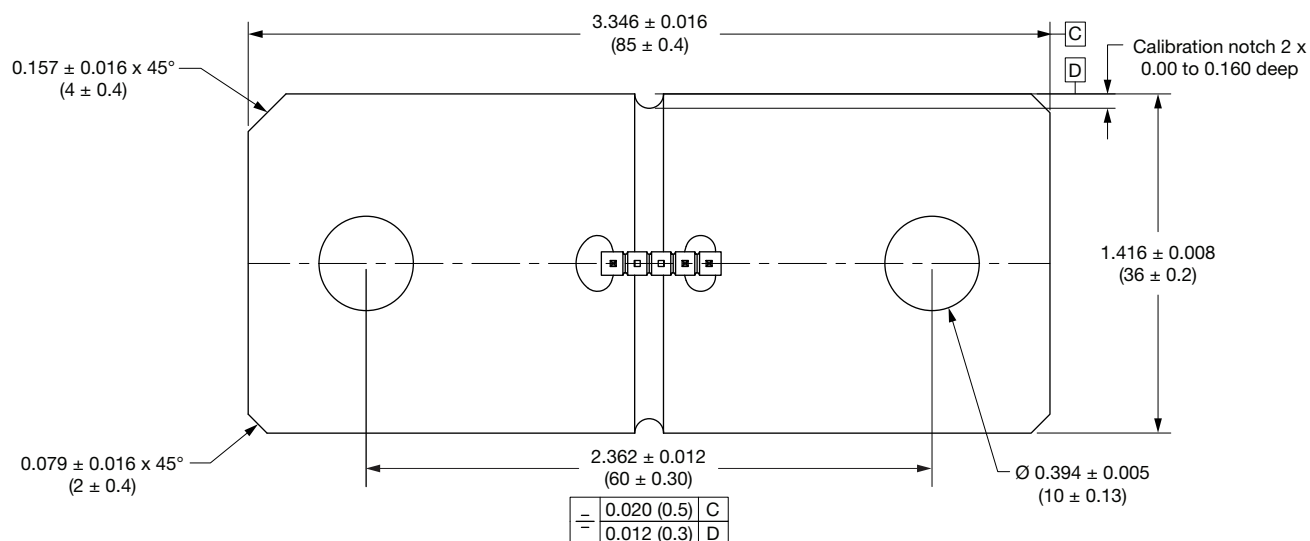
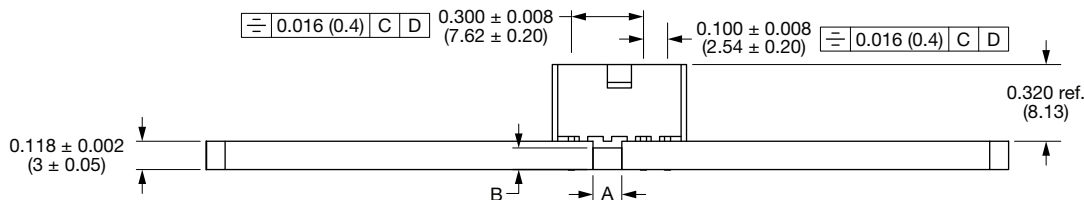
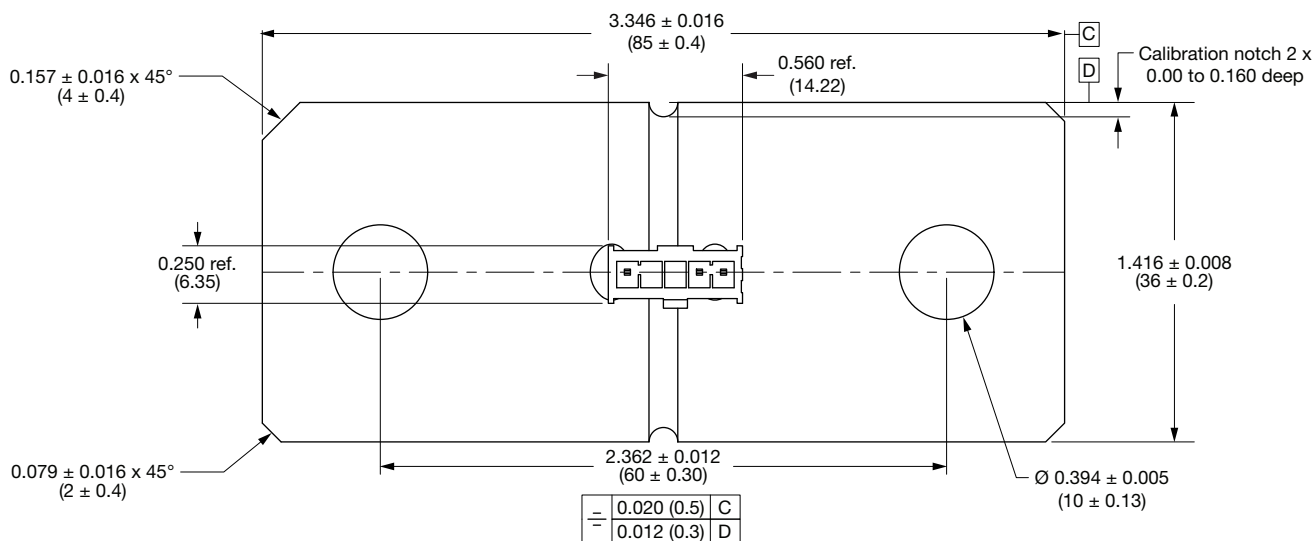


**WSBE8518L1000JTA3**



**WSBE8518L1000JTB3P**


**WSBE8536L0500JTA2**

**WSBE8536L0500JTB2**

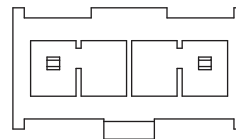

**WSBE8536L0500JTA3**

**WSBE8536L0500JTB3**

## CONNECTION OPTIONS



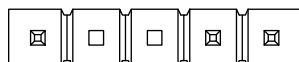
Voltage sense pins in position 1 and 4,  
position 2 and 3 are blank.

**A Series**



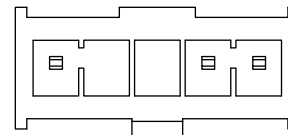
Voltage sense pins in position 1 and 4,  
position 2 and 3 are blank.

**B Series**



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

**A3 Series**



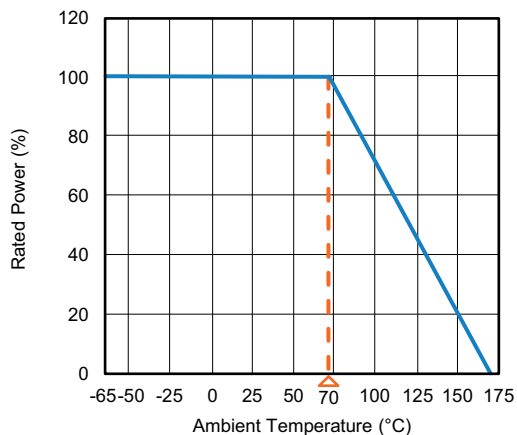
Voltage sense pins in position 1 and 4,  
ground pin in position 5,  
position 2 and 3 are blank.

**B3 Series**

### 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](#)

## DERATING



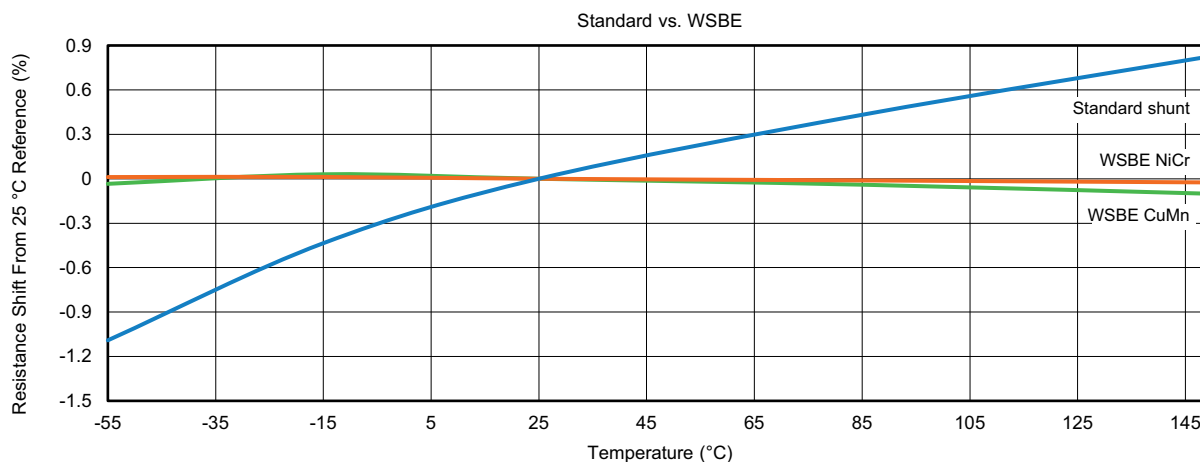
SIZE	RESISTANCE VALUE ( $\mu\Omega$ )	ELEMENT MATERIAL	A REF.	B REF.
8518	100	NiCr	0.120 (3.05)	0.090 (2.29)
8536	50	NiCr	0.120 (3.05)	0.090 (2.29)

TOLERANCES ON DECIMALS  
.xxx  $\pm$  0.005 [.x  $\pm$  0.1]

UNLESS OTHERWISE LISTED



## TCR COMPARISON



### Note

- [www.vishay.com/doc?30405](http://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 % $\Delta R$
Short time overload	5 x rated power for 5 s	± 0.5 % $\Delta R$
Low temperature storage	-65 °C for 24 h	± 0.2 % $\Delta R$
High temperature exposure	1000 h at +170 °C	± 1.0 % $\Delta R$
Bias humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	± 0.5 % $\Delta R$
Mechanical shock	100 g's for 6 ms, 5 pulses	± 0.2 % $\Delta R$
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	± 0.2 % $\Delta R$
Load life	1000 h at +70 °C, 1.5 h "ON", 0.5 h "OFF"	± 1.0 % $\Delta R$
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7b not required	± 0.2 % $\Delta R$



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