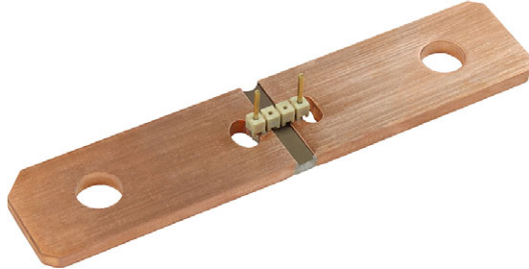


## Power Metal Strip<sup>®</sup> Shunt Resistor, Low TCR (Down to $< \pm 10 \text{ ppm}/^\circ\text{C}$ ), Very Low Value (Down to $15 \mu\Omega$ )



### 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	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

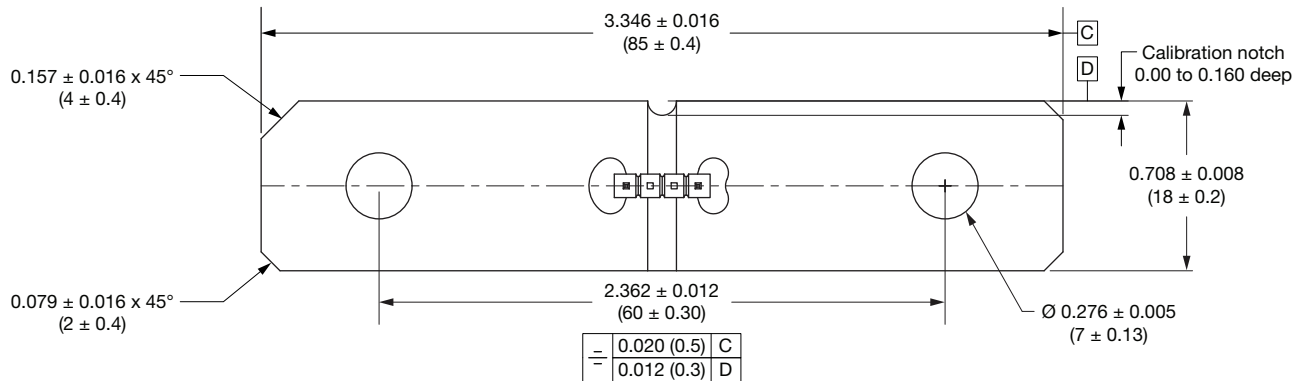
GLOBAL PART NUMBERING: WSBE8518L1000JTA2 (WSBE8518...A2, 0.0001  $\Omega$ ,  $\pm 5 \%$ , tray pack)

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 = m $\Omega$ L1000 = 0.0001 $\Omega$		J = $\pm 5 \%$		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							

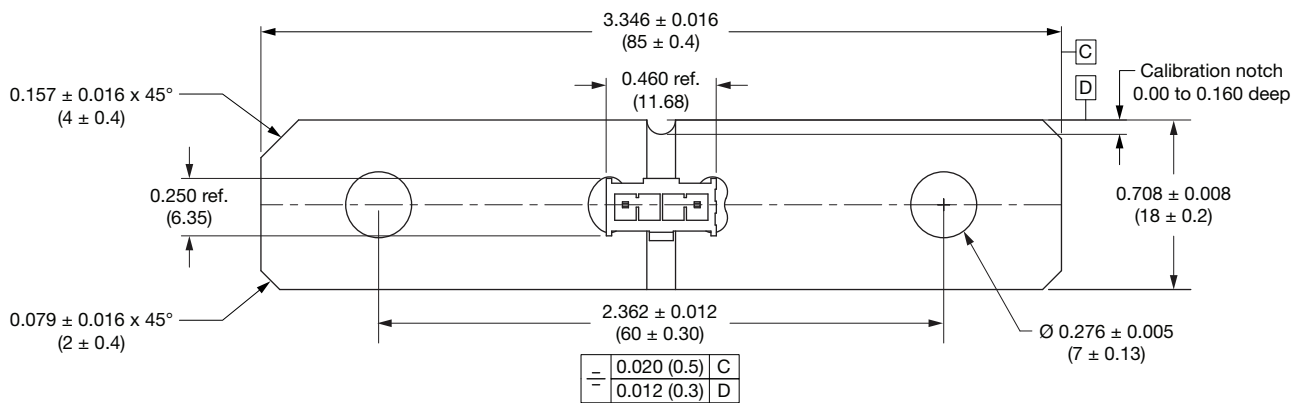
PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)

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

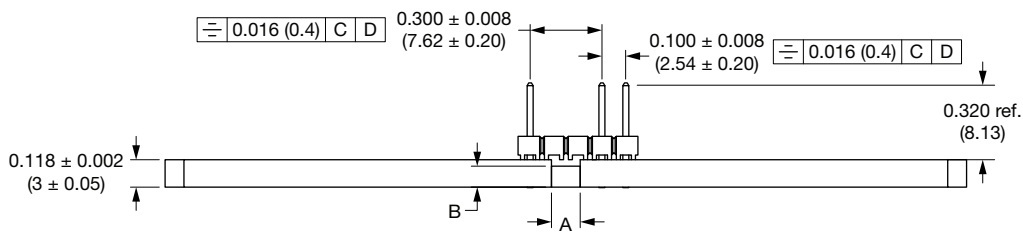
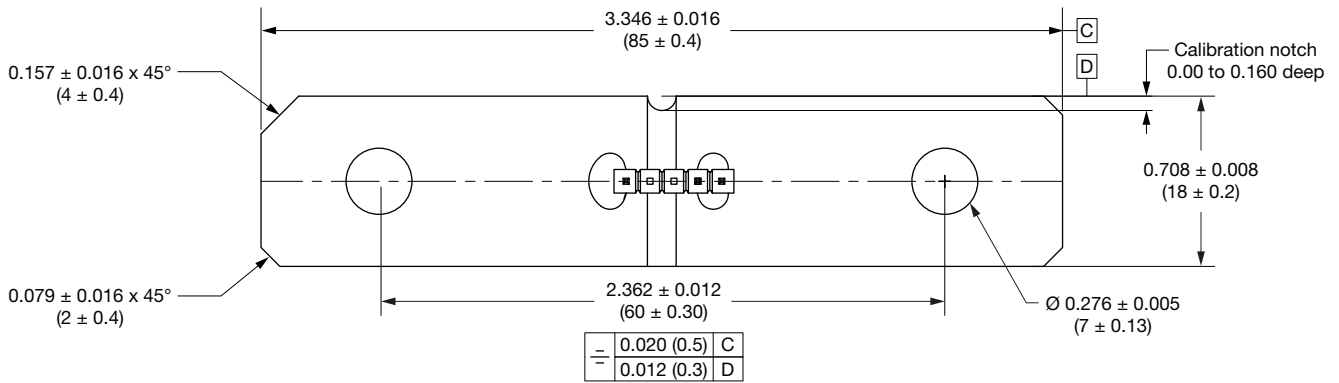
**DIMENSIONS** in inches (millimeters)



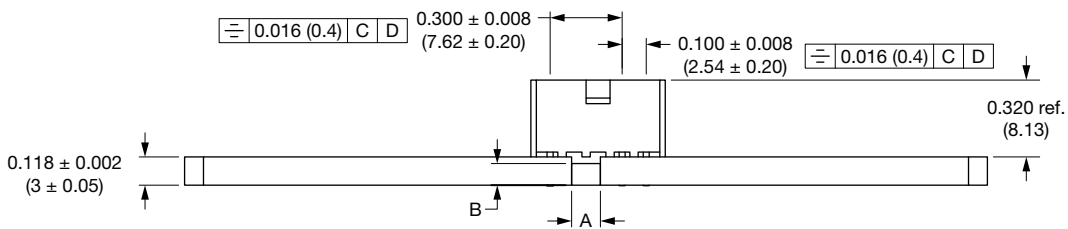
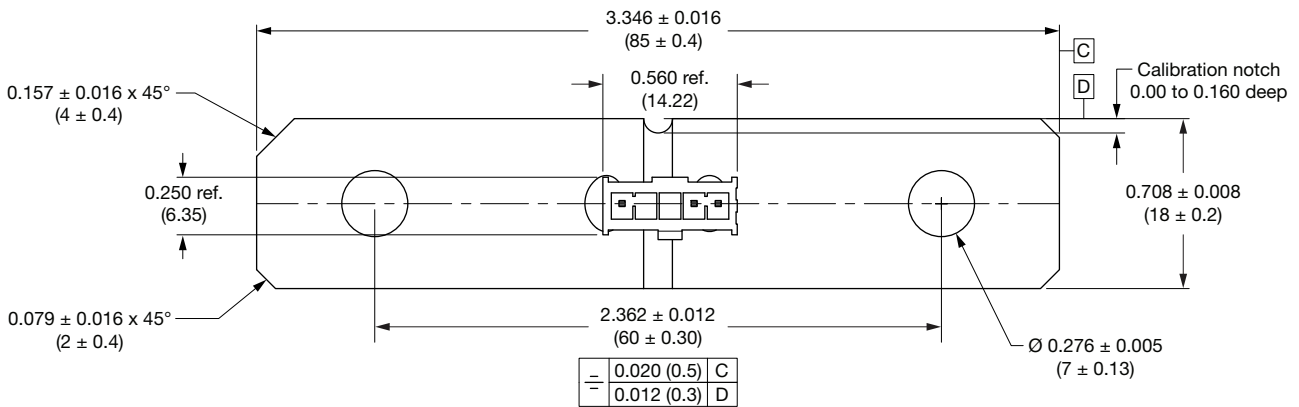
**WSBE8518L1000JTA2**



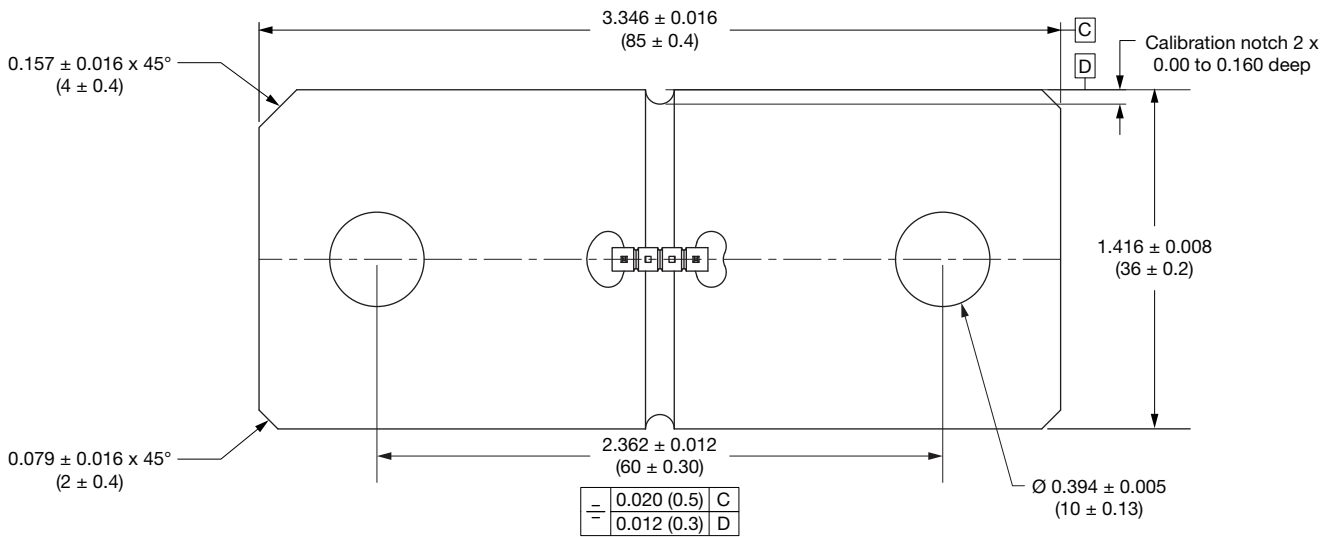
**WSBE8518L1000JTB2P**



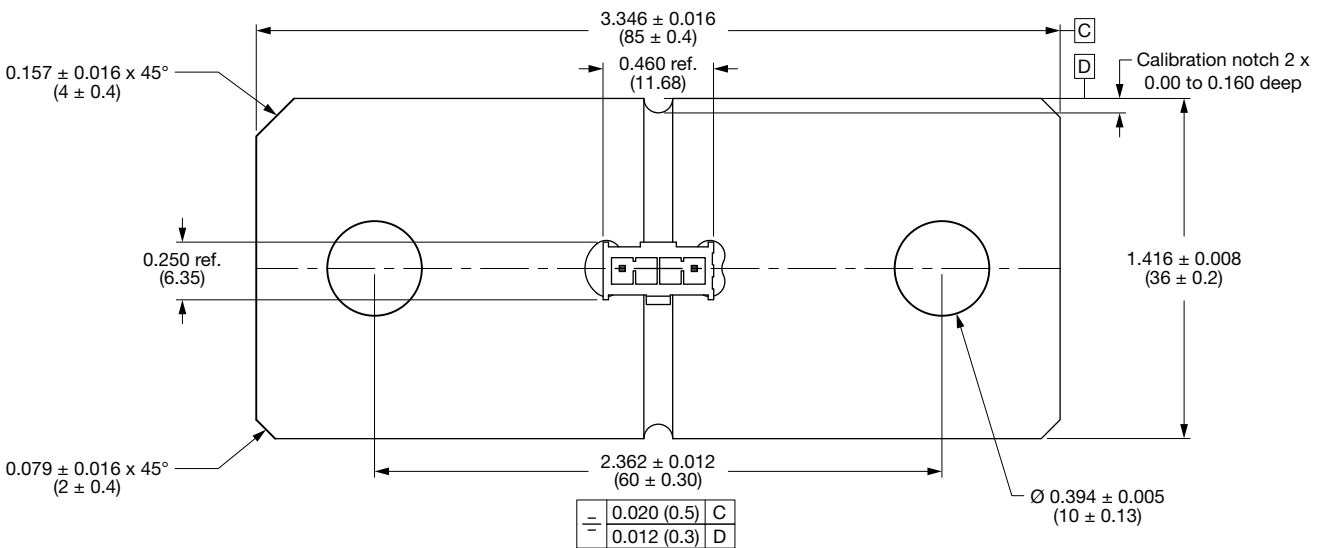
**WSBE8518L1000JTA3**



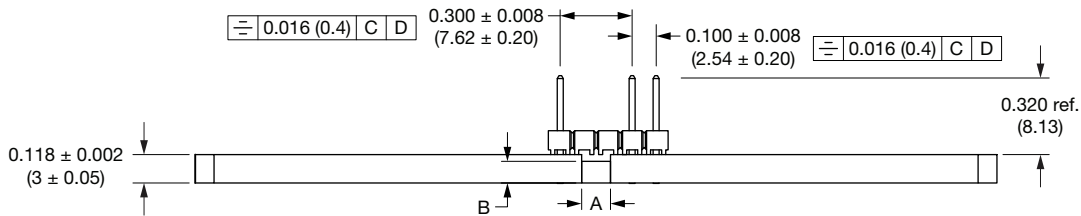
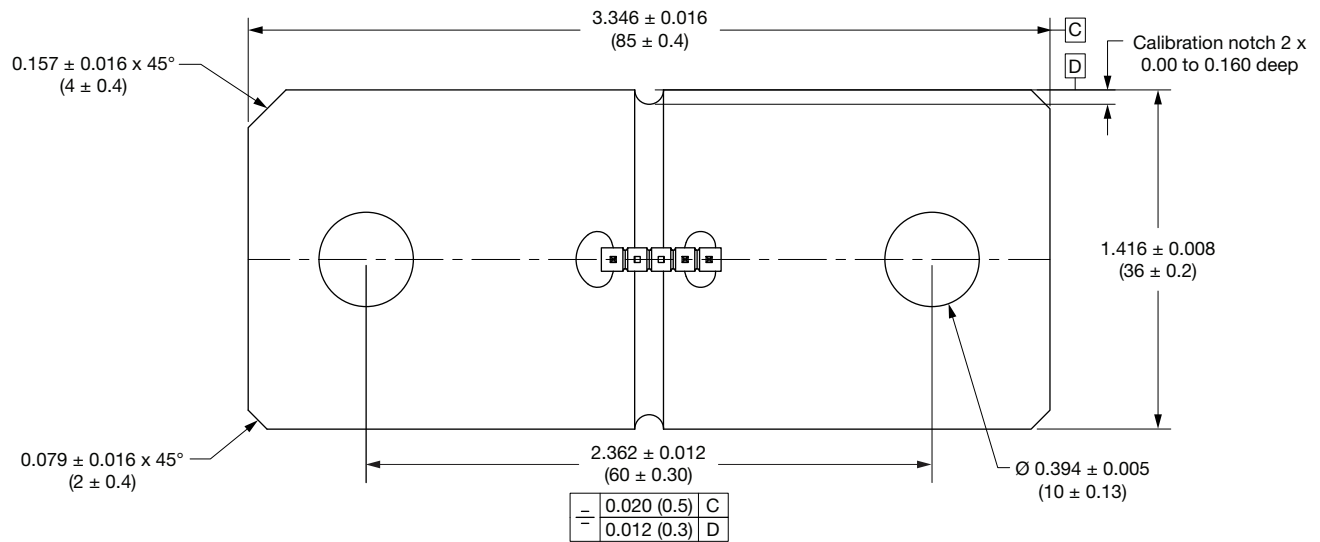
**WSBE8518L1000JTB3P**



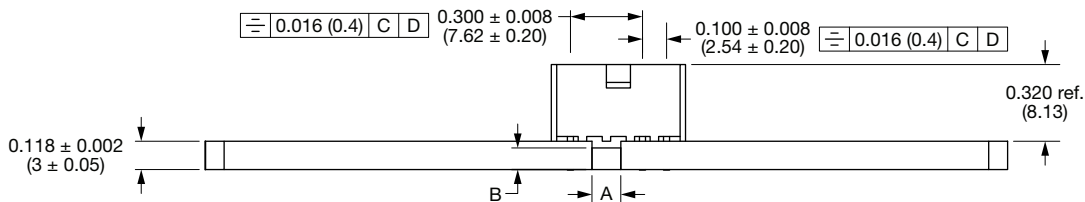
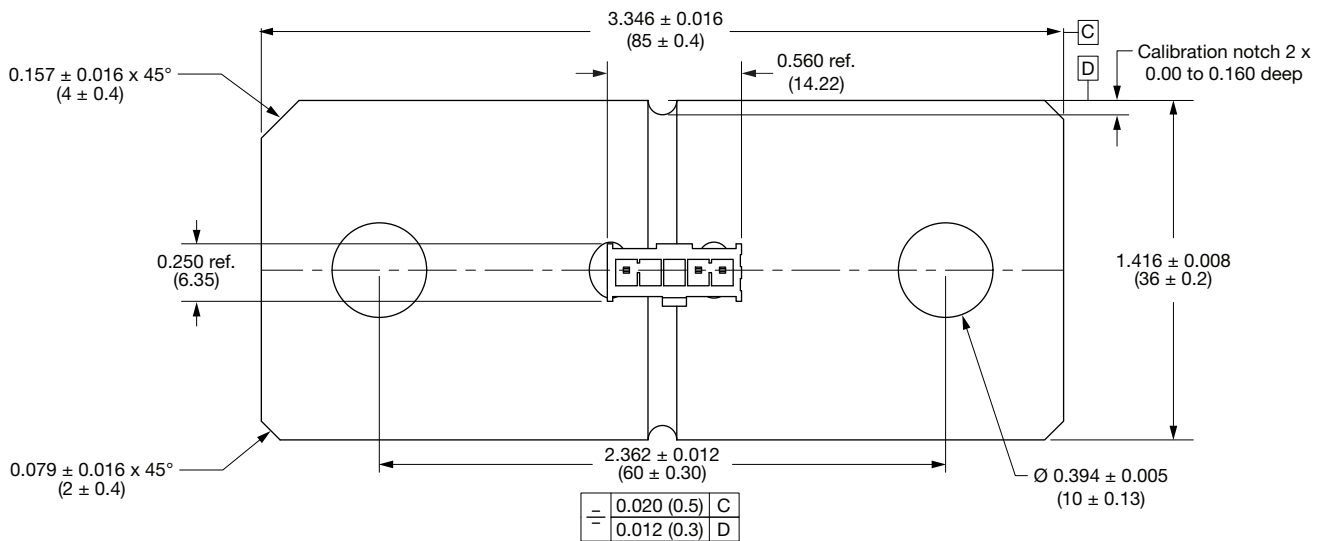
**WSBE8536L0500JTA2**



**WSBE8536L0500JTB2**

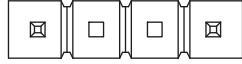


**WSBE8536L0500JTA3**



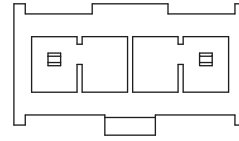
**WSBE8536L0500JTB3**

**CONNECTION OPTIONS**



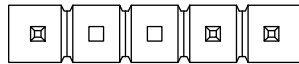
Voltage sense pins in position 1 and 4,  
position 2 and 3 are blank.

**A Series**



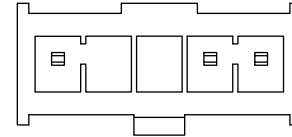
Voltage sense pins in position 1 and 4,  
position 2 and 3 are blank.

**B Series**



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

**A3 Series**



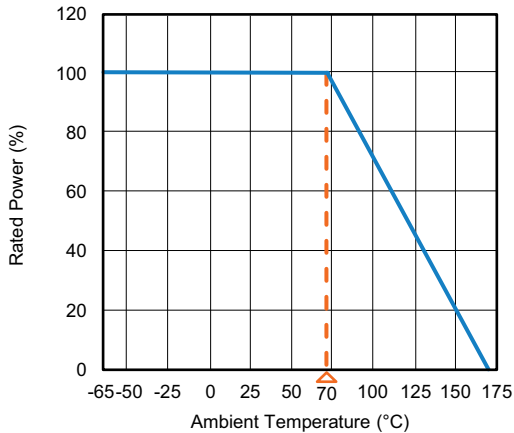
Voltage sense pins in position 1 and 4,  
ground pin in position 5,  
position 2 and 3 are blank.

**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**

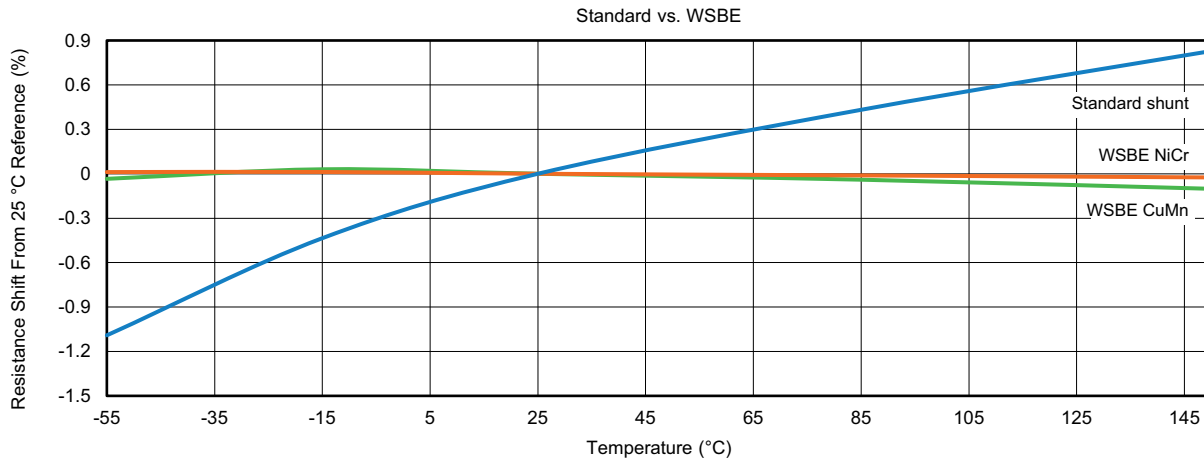


SIZE	RESISTANCE VALUE ( $\mu\Omega$ )	ELEMENT MATERIAL	A REF.	B REF.
8518	100	NiCr	0.120 (3.05)	0.090 (2.29)
8536	50	NiCr	0.120 (3.05)	0.090 (2.29)

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



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