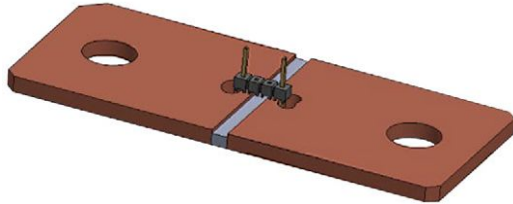


## Power Metal Strip® Shunt Resistor, Low TCR (Down to $< \pm 10$ ppm/°C), Very Low Value (Down to $15 \mu\Omega$ )



### LINKS TO ADDITIONAL RESOURCES



### 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  $\pm 10$  ppm/°C)
- Very low inductance ( $< 5$  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)

### 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	100 $\mu$	100 $\mu$	36

#### Note

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

### TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	RESISTOR CHARACTERISTICS
Temperature coefficient	ppm/°C	$\pm 10$ for 100 $\mu\Omega$
Operating temperature range	°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

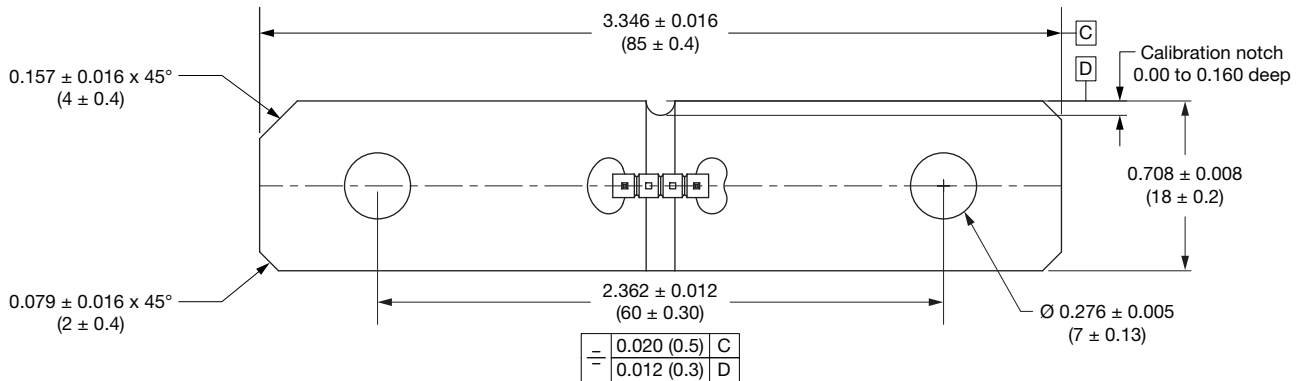
GLOBAL PART NUMBERING: WSBE8518L1000JA2 (WSBE8518...A2, 0.0001  $\Omega$ ,  $\pm 5 \%$ , tray pack)

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			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			

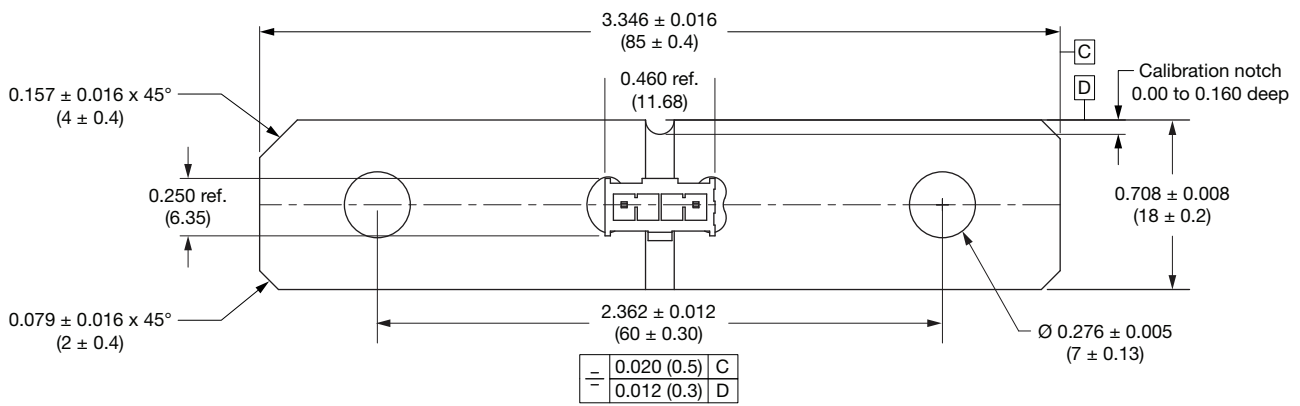
PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)

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

**DIMENSIONS** in inches (millimeters)



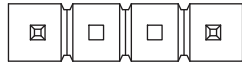
**WSBE8518L1000JTA2**



**WSBE8518L1000JTB2P**

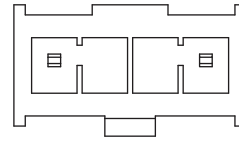


## CONNECTION OPTIONS



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

**A Series**



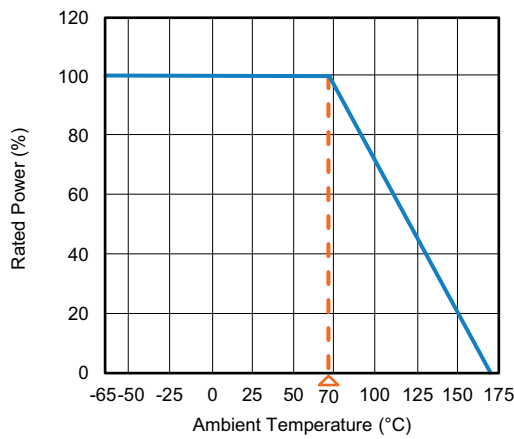
Voltage sense pins in position 1 and 4, position 2 and 3 are blank.

**B Series**

### Note

- Connection options are examples. Other configurations available upon request

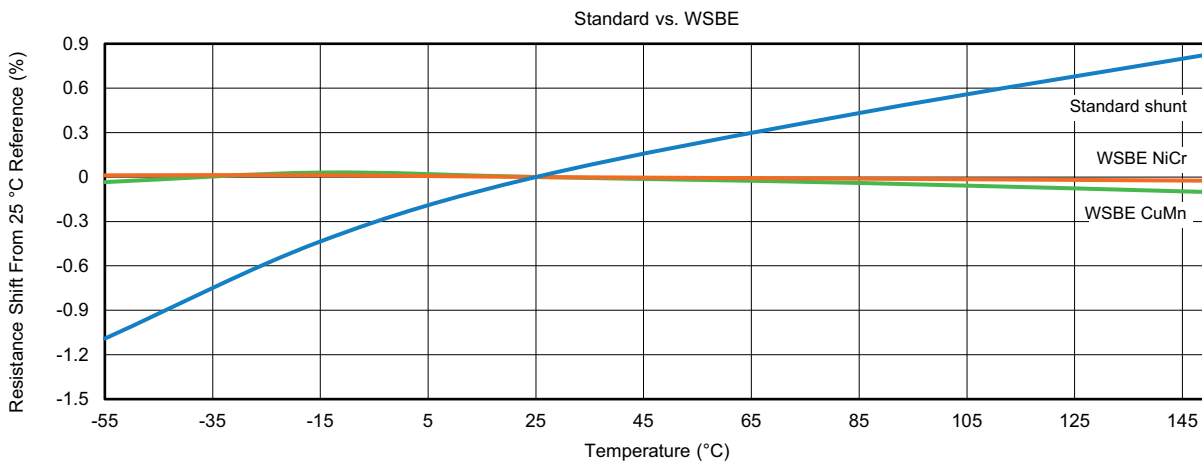
## DERATING



SIZE	RESISTANCE VALUE ( $\mu\Omega$ )	ELEMENT MATERIAL	A REF.	B REF.
8518	100	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





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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