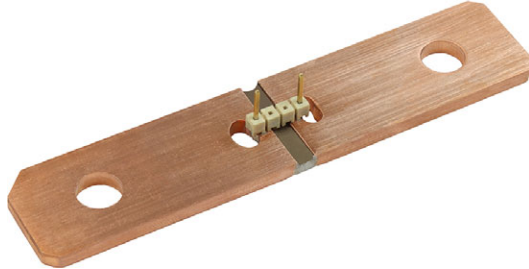


Power Metal Strip® Shunt Resistor, Low TCR (Down to $< \pm 10 \text{ ppm}/^\circ\text{C}$), Very Low Value (Down to $15 \mu\Omega$)



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
- Material categorization: for definitions of compliance please see 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 Ω | RESISTANCE VALUES CURRENTLY AVAILABLE ⁽¹⁾ Ω | WEIGHT (typical) g |
|--------------|------|---|-----------------------|---------------------------------------|---|--------------------------|
| WSBE8518 | 8518 | 36 | 5 | 30 μ to 100 μ | 100 μ | 36 |
| WSBE8536 | 8536 | 50 | 5 | 15 μ to 50 μ | 50 μ | 72 |

Note

⁽¹⁾ Other values may be available, contact factory

TECHNICAL SPECIFICATIONS

| PARAMETER | UNIT | RESISTOR CHARACTERISTICS | |
|-----------------------------|------------------------------|------------------------------|-----------------------------|
| | | WSBE8518 | WSBE8536 |
| Temperature coefficient | ppm/ $^\circ\text{C}$ | ± 10 for 100 $\mu\Omega$ | ± 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

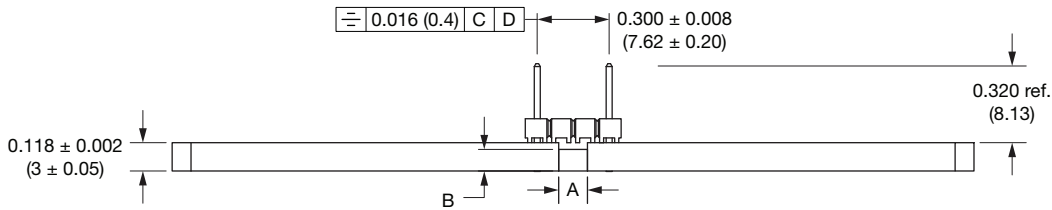
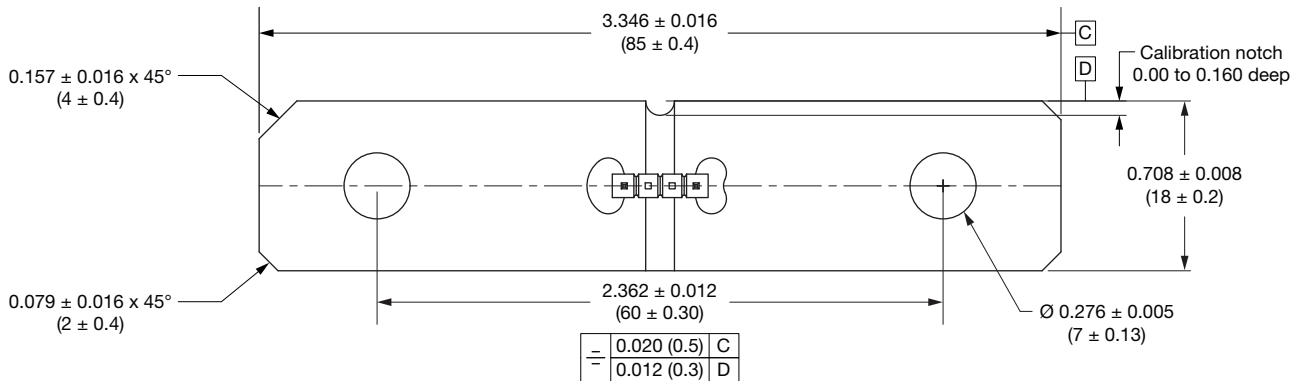
GLOBAL PART NUMBERING: WSBE8518L1000JTA2 (WSBE8518...A2, 0.0001 Ω , $\pm 5 \%$, tray pack)

| | | | | | | | | | | | | | | | | | |
|----------------------|---|---|---|----------------|---|--------------------------------|---|--|---|------------------------------------|---|---|---|---|---|---|--|
| 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 Ω L1000 = 0.0001 Ω | | 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 | | | | | | | |

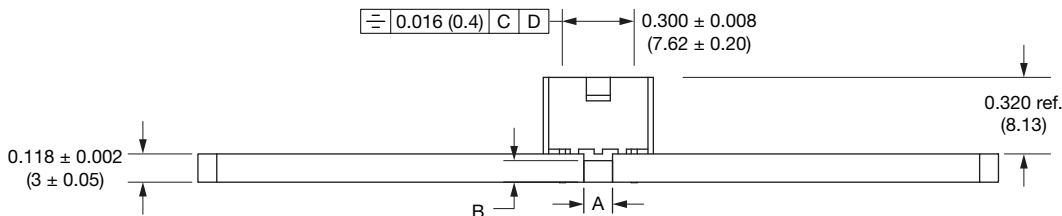
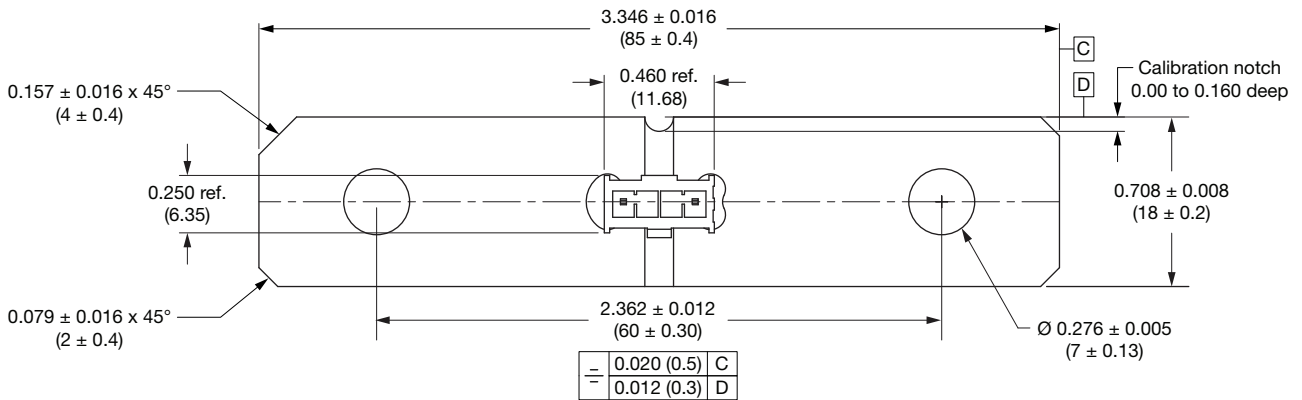
PATENT(S): www.vishay.com/patents

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

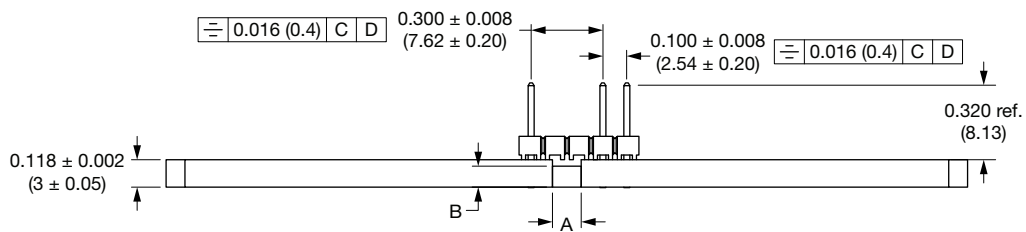
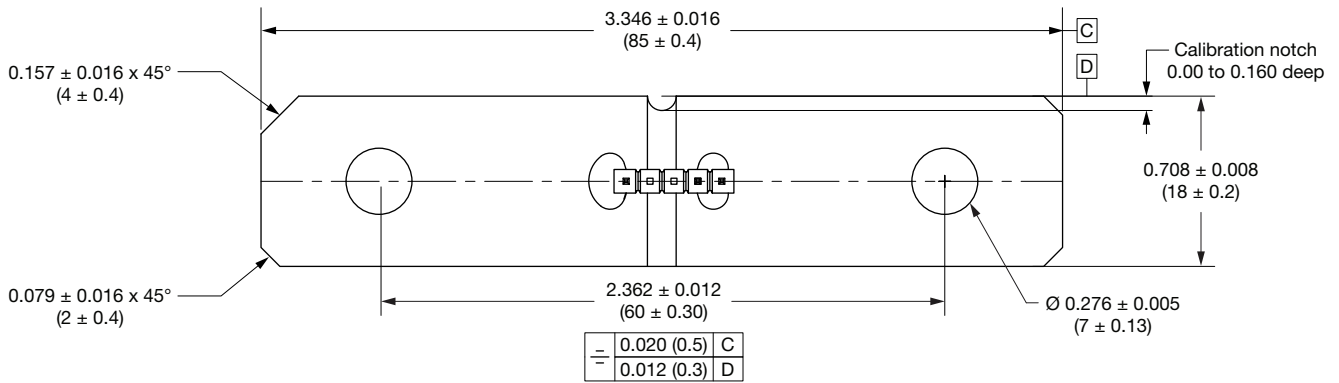
DIMENSIONS in inches (millimeters)



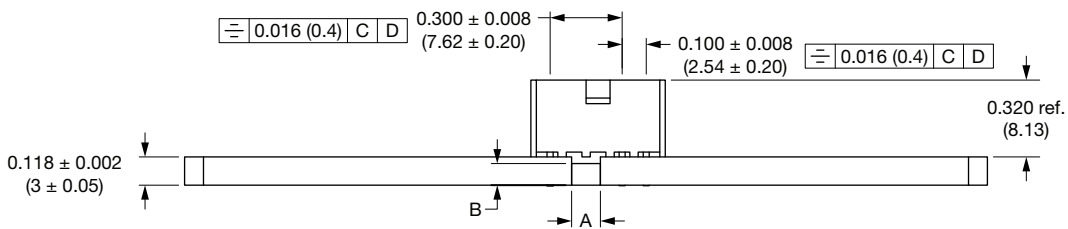
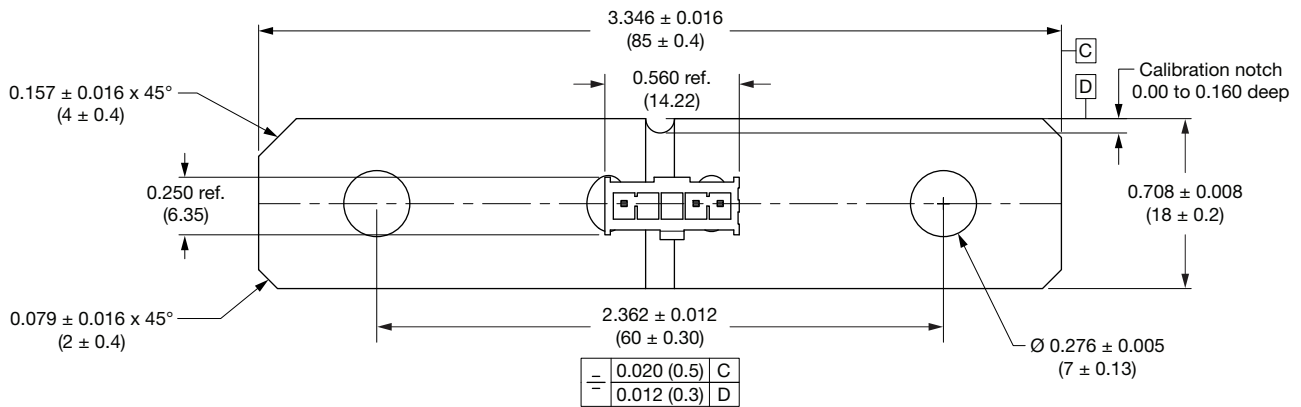
WSBE8518L1000JTA2



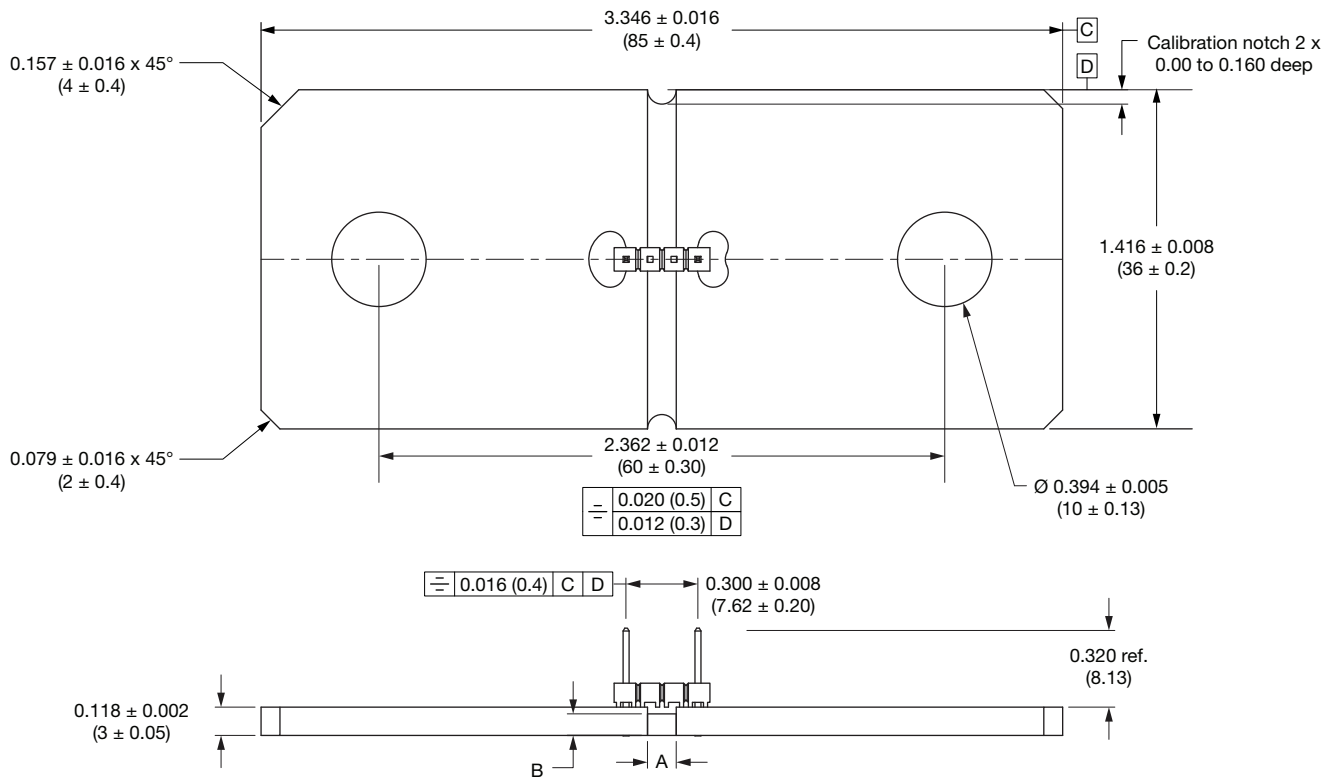
WSBE8518L1000JTB2P



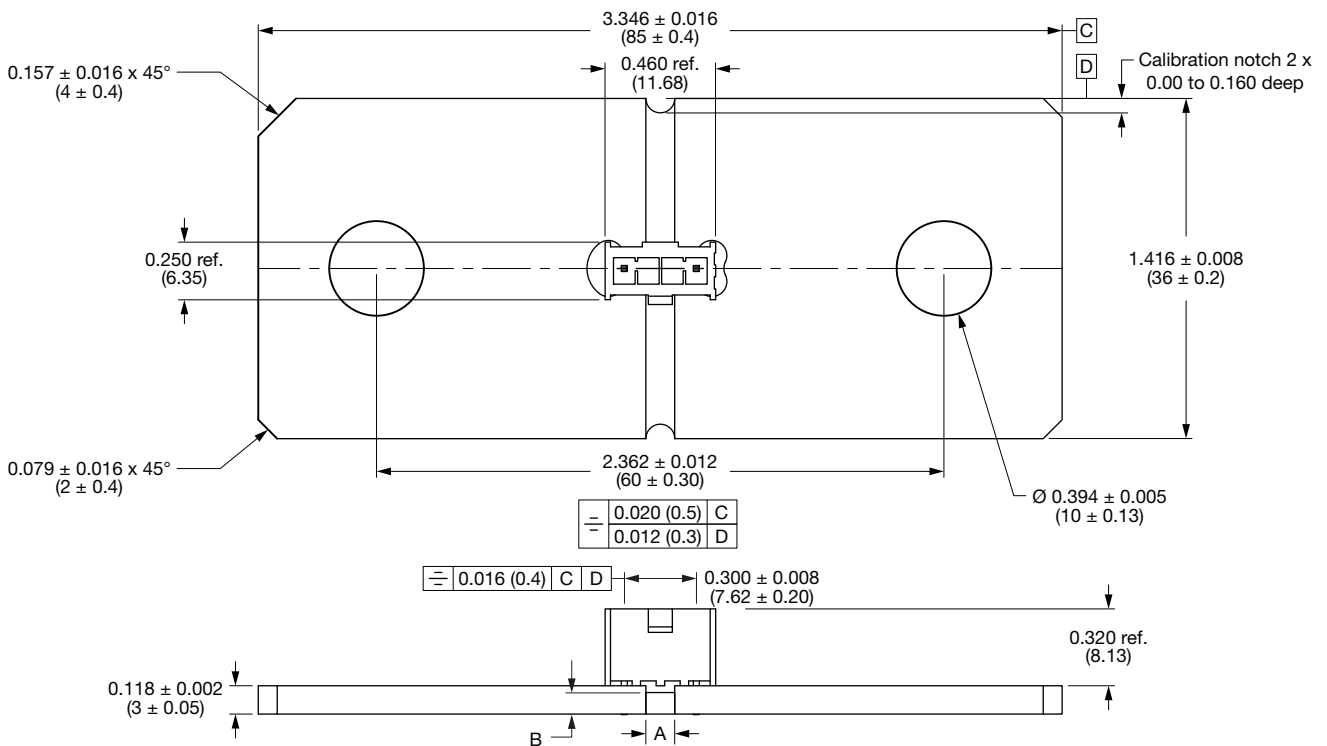
WSBE8518L1000JTA3



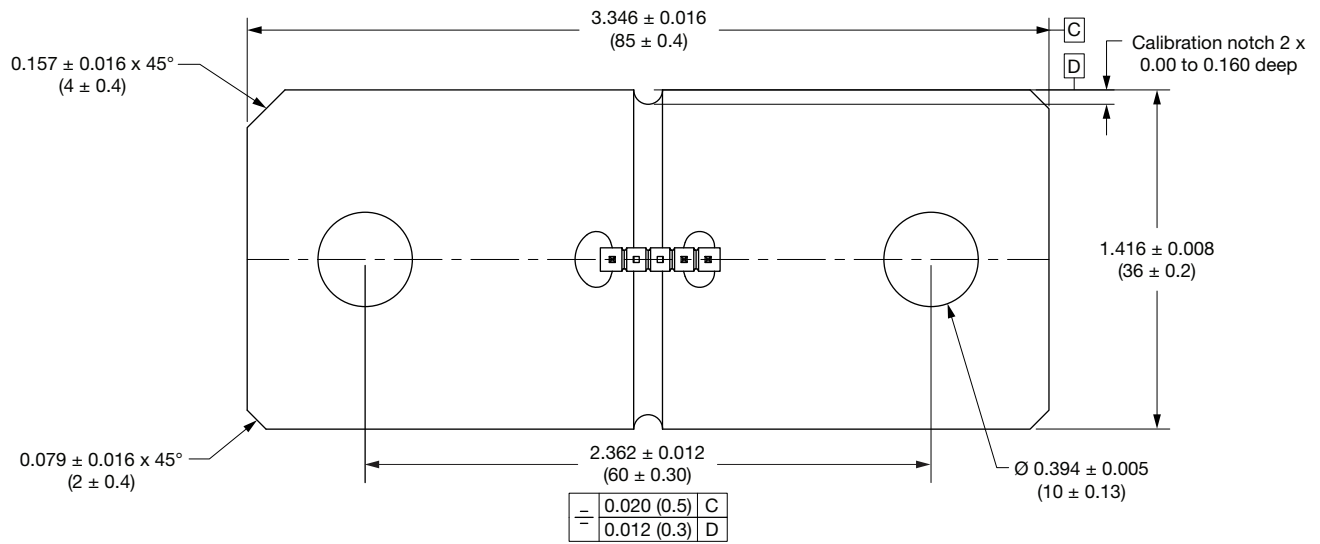
WSBE8518L1000JTB3P



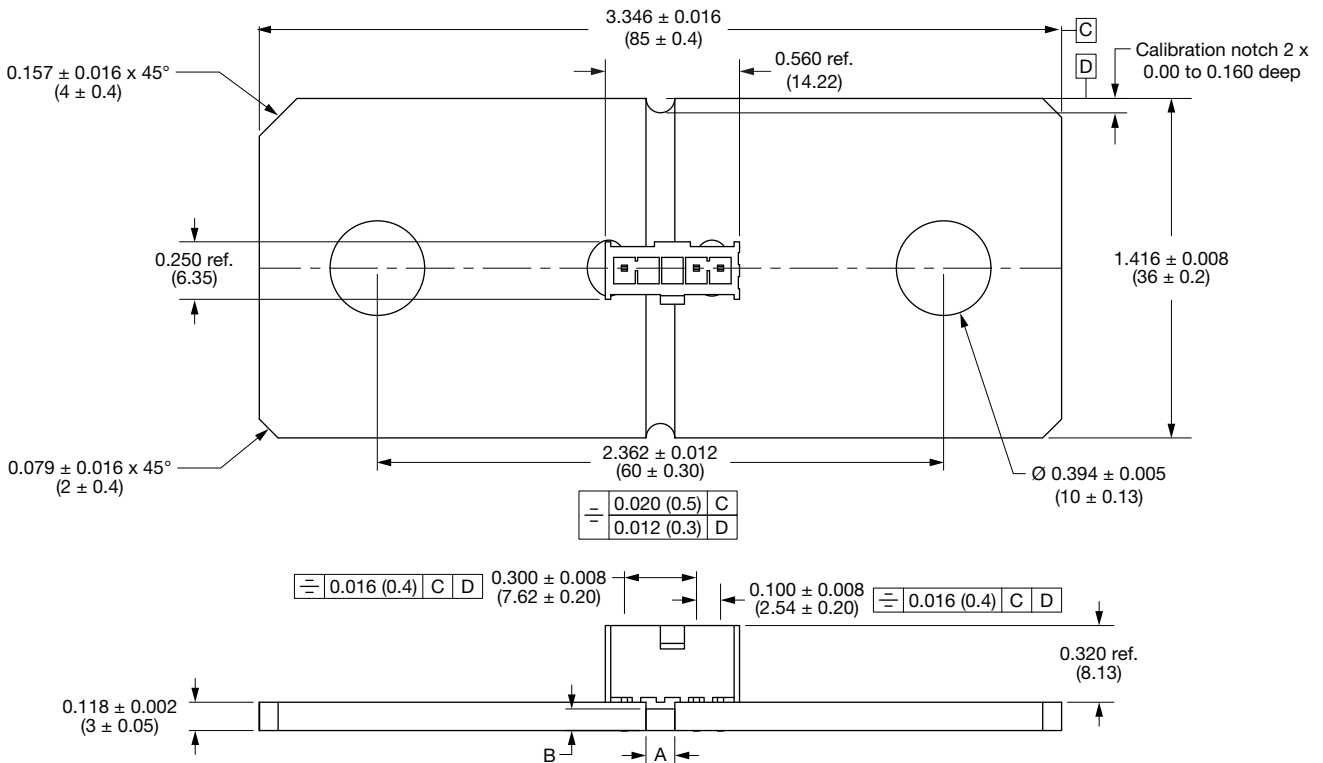
WSBE8536L0500JTA2



WSBE8536L0500JTB2

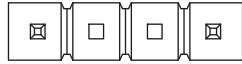


WSBE8536L0500JTA3



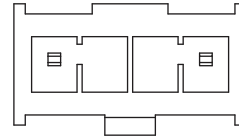
WSBE8536L0500JTB3

CONNECTION OPTIONS



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

A Series



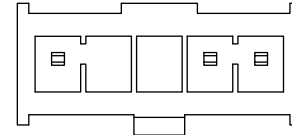
Voltage sense pins in position 1 and 4,
position 2 and 3 are blank.

B Series



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

A3 Series



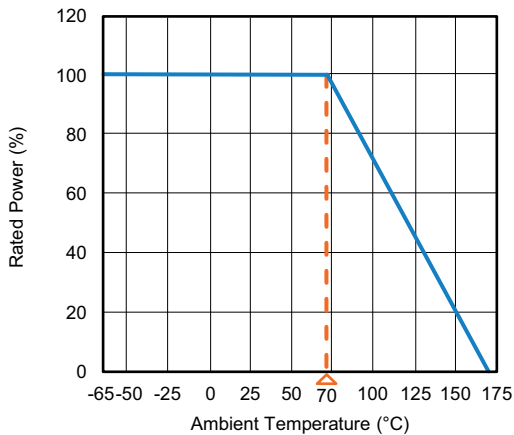
Voltage sense pins in position 1 and 4,
ground pin in position 5,
position 2 and 3 are blank.

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

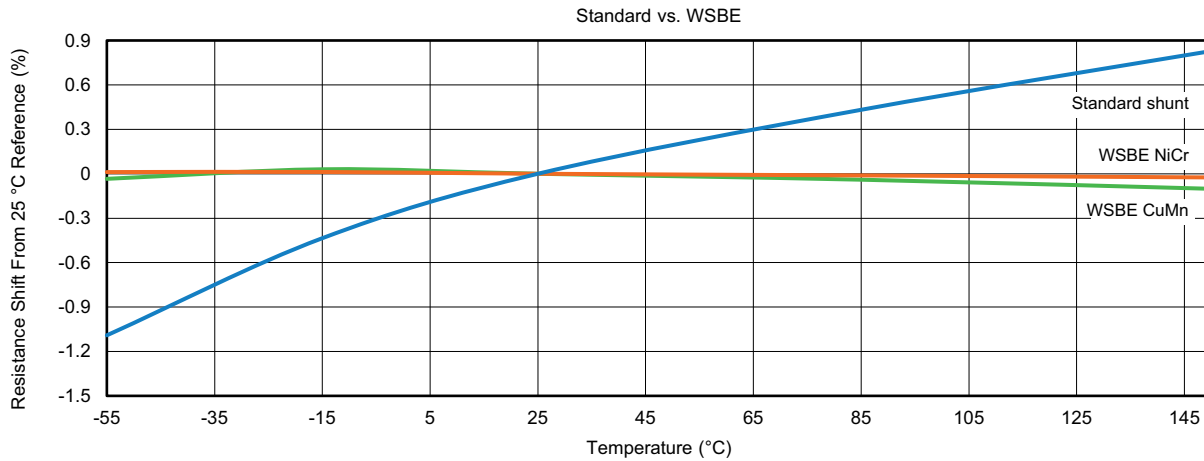


| SIZE | RESISTANCE VALUE ($\mu\Omega$) | ELEMENT MATERIAL | A REF. | B REF. |
|------|----------------------------------|------------------|--------------|--------------|
| 8518 | 100 | NiCr | 0.120 (3.05) | 0.090 (2.29) |
| 8536 | 50 | NiCr | 0.120 (3.05) | 0.090 (2.29) |

TOLERANCES ON DECIMALS
.xxx \pm 0.005 [x \pm 0.1]
UNLESS OTHERWISE LISTED



TCR COMPARISON



Note

- www.vishay.com/doc?30405 - 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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