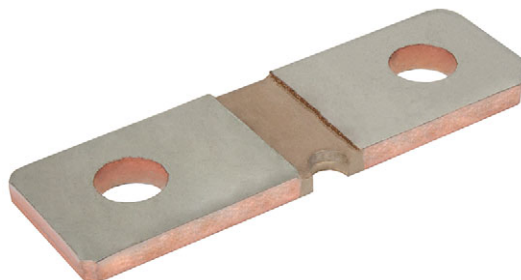


# Power Metal Strip® Battery Shunt Resistor, Very Low Value (100 $\mu\Omega$ ), Sn Plated



## FEATURES

- High power to resistor size ratio
- Sn plating assists with PCB mounting and corrosion protection
- Proprietary processing technique produces extremely low resistance values
- All welded construction
- Solid metal manganese-copper alloy resistive element with low TCR (< 20 ppm/°C)
- Very low inductance (< 5 nH)
- Low thermal EMF (< 1  $\mu\text{V}/^\circ\text{C}$ )
- AEC-Q200 qualified
- 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<br>$P_{70^\circ\text{C}}$<br>W | TOLERANCE<br>$\pm \%$ | RESISTANCE VALUE<br>RANGE<br>$\Omega$ | RESISTANCE VALUES<br>CURRENTLY AVAILABLE <sup>(1)</sup><br>$\Omega$ | WEIGHT<br>(typical)<br>g |
|---------------|------|---------------------------------------------|-----------------------|---------------------------------------|---------------------------------------------------------------------|--------------------------|
| WSBS5216...14 | 5216 | 12                                          | 5, 10                 | 50 $\mu$ to 250 $\mu$                 | 100 $\mu$                                                           | 19.2                     |

### Note

(1) Other values may be available, contact factory

## TECHNICAL SPECIFICATIONS

| PARAMETER                                  | UNIT                         | RESISTOR CHARACTERISTICS |
|--------------------------------------------|------------------------------|--------------------------|
| Temperature coefficient                    | ppm/°C                       | $\pm 150$                |
| Temperature coefficient (element material) | ppm/°C                       | $\pm 20$                 |
| Operating temperature range                | °C                           | -65 to +170              |
| Thermal EMF                                | $\mu\text{V}/^\circ\text{C}$ | < 1 for 100 $\mu\Omega$  |
| Inductance                                 | nH                           | < 5                      |
| Maximum continuous current rating          | A                            | $(P/R)^{1/2}$            |

## GLOBAL PART NUMBER INFORMATION

Global Part Numbering: WSBS5216L1000JT14 (WSBS5216-14, 0.000100  $\Omega$ ,  $\pm 5.0 \%$ , tray pack)

W S B S 5 2 1 6 L 1 0 0 0 J T 1 4

GLOBAL MODEL

WSBS5216

RESISTANCE VALUE

L = m $\Omega$   
L1000 = 0.000100  $\Omega$

TOLERANCE CODE

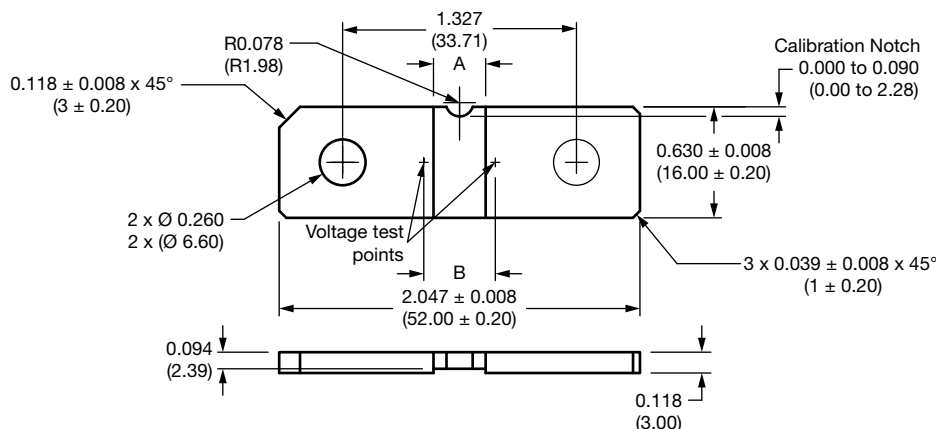
J =  $\pm 5 \%$   
K =  $\pm 10 \%$

PACKAGING CODE

K = bulk pack  
T = tray pack

SPECIAL

14 = special Sn plating

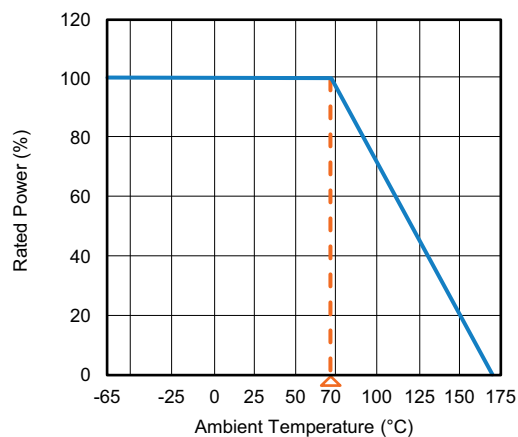
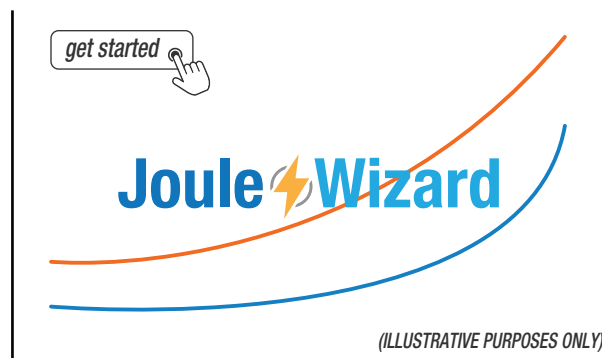
**DIMENSIONS** in inches (millimeters)

**Note**

- Plating on top / bottom is Sn 2.5 µm to 8.0 µm over Ni 0.5 µm to 4.0 µm, edges are not plated

| RESISTANCE VALUE (µΩ) | ELEMENT MATERIAL | A REFERENCE  | B ± 0.005 (± 0.13) |
|-----------------------|------------------|--------------|--------------------|
| 100                   | Mn-Cu            | 0.281 (7.14) | 0.406 (10.31)      |

TOLERANCES ON DECIMALS  
XXX ± 0.005

UNLESS OTHERWISE LISTED

**DERATING**

**PULSE CAPABILITY**

[www.vishay.com/en/resistors/joulewizard/](http://www.vishay.com/en/resistors/joulewizard/)

| 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                                                | ± 0.5 % 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                                     | ± 0.5 % ΔR  |
| Vibration                 | Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h | ± 0.5 % 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            | ± 0.5 % ΔR  |



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