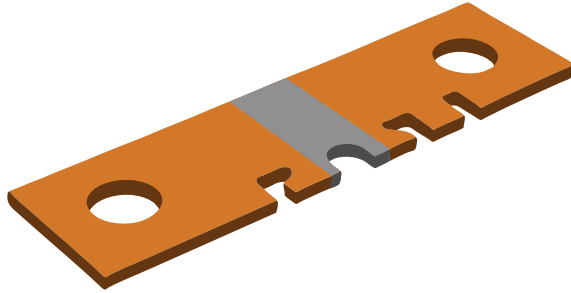


## Power Metal Strip® Meter Shunt Resistor, Very Low Value (down to 0.00010 Ohms)



### FEATURES

- High power to resistor size ratio
- 4-terminal (Kelvin) connection design
- Proprietary processing technique produces extremely low resistance values
- All welded construction
- Very low inductance (< 0.5 nH)
- Low thermal EMF (< 3  $\mu\text{V}/^\circ\text{C}$ )
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
**GREEN**  
(5-2008)

### STANDARD ELECTRICAL SPECIFICATIONS

| GLOBAL MODEL | SIZE | POWER RATING<br>$P_{70^\circ\text{C}}$<br>W | TOLERANCE<br>% | RESISTANCE VALUE<br>RANGE<br>$\Omega$ | RESISTANCE VALUES<br>CURRENTLY AVAILABLE <sup>(1)</sup><br>$\Omega$      | WEIGHT<br>(typical)<br>g/1000 pieces |
|--------------|------|---|----------------|---------------------------------------|--|--------------------------------------|
| WSMS5515     | 5515 | 3.0   | 5.0            | 50 $\mu$ to 1000 $\mu$                | 100 $\mu$ , 160 $\mu$ , 200 $\mu$ ,<br>250 $\mu$ , 300 $\mu$ , 500 $\mu$ | 7800                                 |

#### Note

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

### TECHNICAL SPECIFICATIONS

| PARAMETER                   | UNIT                  | RESISTOR CHARACTERISTICS  |
|-----------------------------|-----------------------|---|
| Temperature Coefficient     | ppm/ $^\circ\text{C}$ | $\pm 325$ for 100 $\mu\Omega$ , $\pm 225$ for 160 $\mu\Omega$ , 200 $\mu\Omega$ , and 250 $\mu\Omega$ ,<br>$\pm 175$ for 300 $\mu\Omega$ to 500 $\mu\Omega$ |
| Operating Temperature Range | $^\circ\text{C}$      | - 65 to + 170   |
| Maximum Current Rating      | A                     | $(P/R)^{1/2}$   |

### GLOBAL PART NUMBER INFORMATION

GLOBAL PART NUMBERING: WSMS5515L2500JK (WSMS5515, 0.00025  $\Omega$ ,  $\pm 5\%$ )

W S M S 5 5 1 5 L 2 5 0 0 J K

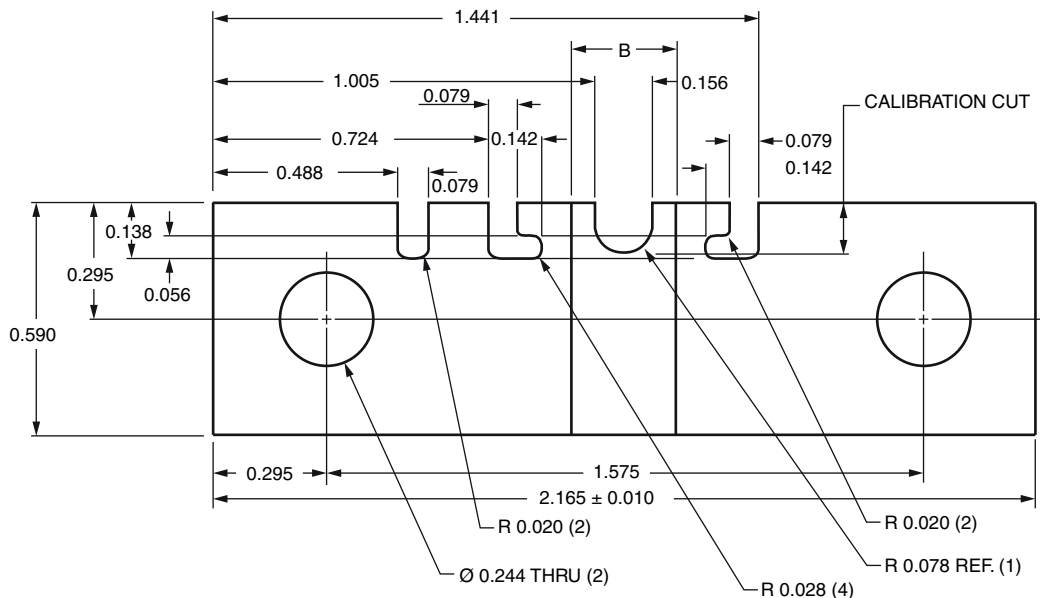
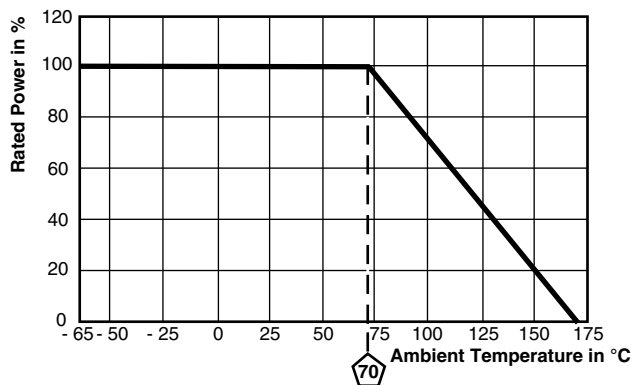
GLOBAL MODEL  
**WSMS5515**

RESISTANCE VALUE  
L = m $\Omega$   
L1000 = 0.00010  $\Omega$   
L1600 = 0.00016  $\Omega$   
L2000 = 0.00020  $\Omega$   
L2500 = 0.00025  $\Omega$   
L3000 = 0.00030  $\Omega$   
L5000 = 0.00050  $\Omega$

TOLERANCE CODE  
J =  $\pm 5.0\%$

PACKAGING CODE  
K = Bulk pack

SPECIAL  
(Dash number)  
(Up to 2 digits)  
From 1 to 99 as applicable

**DIMENSIONS** in inches

**DERATING**

 TOLERANCES ON DECIMALS  
 XXX ± 0.005

| RESISTANCE VALUE (μΩ) | RESISTOR THICKNESS (inches) | ELEMENT MATERIAL |
|-----------------------|-----------------------------|------------------|
| 100                   | 0.033                       | Mn-Cu            |
| 160                   | 0.051                       | Mn-Cu            |
| 200                   | 0.051                       | Mn-Cu            |
| 250                   | 0.033                       | Mn-Cu            |
| 300                   | 0.033                       | Mn-Cu            |
| 500                   | 0.059                       | Fe-Cr            |

| 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 Operation | - 65 °C for 45 min   | ± 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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