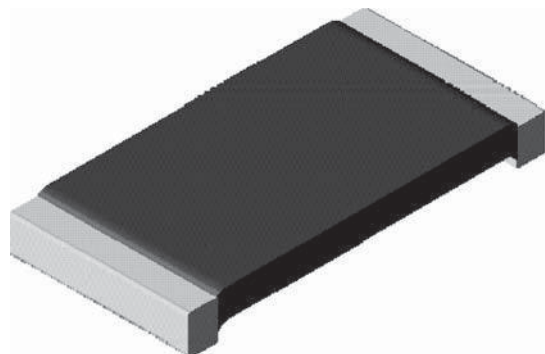


## Improved Stability (0.25 % and 0.5 %), Power Metal Strip® Resistors Low Value (0.01 $\Omega$ to 0.1 $\Omega$ ), Surface Mount



### FEATURES

- Current sensing in high-temperature (+ 125 °C) applications
- Greater stability with maximum resistance change of 0.25 % or 0.5 % through 2000 h workload
- Ideal for all types of current sensing, voltage division and pulse applications including switching and linear power supplies, instruments, power amplifiers and shunts
- Proprietary processing technique produces extremely low resistance values (0.01  $\Omega$  to 0.1  $\Omega$ )
- All welded construction
- Solid metal nickel-chrome resistive element with low TCR (< 20 ppm/°C)
- Very low inductance 0.5 nH to 2 nH
- Excellent frequency response to 50 MHz
- Low thermal EMF (< 3  $\mu$ V/°C)
- AEC-Q200 qualified <sup>(1)</sup>
- Compliant to RoHS Directive 2002/95/EC

AUTOMOTIVE  
GRADE



RoHS  
COMPLIANT

GREEN  
(5-2009)\*\*

### Note

<sup>(1)</sup> Flame retardance test may not be applicable to some resistor technologies.

### STANDARD ELECTRICAL SPECIFICATIONS

| GLOBAL MODEL | SIZE | POWER RATING<br>$P_{70^\circ\text{C}}$<br>W | TOLERANCE<br>$\pm$ % | RESISTANCE<br>VALUE RANGE<br>$\Omega$ | WEIGHT<br>(typical)<br>g/1000 pieces |
|--------------|------|---------------------------------------------|----------------------|---------------------------------------|--------------------------------------|
| WSLS2512     | 2512 | 1.0                                         | 0.5, 1.0, 5.0        | 0.01 to 0.1                           | 63.6                                 |

### Note

- Part marking: Value, RTC/stability code.

### TECHNICAL SPECIFICATIONS

| PARAMETER                   | UNIT   | RESISTOR CHARACTERISTICS |
|-----------------------------|--------|--------------------------|
| Temperature coefficient     | ppm/°C | $\pm$ 75                 |
| Operating temperature range | °C     | - 65 to + 170            |
| Maximum working voltage     | V      | $(P \times R)^{1/2}$     |

### GLOBAL PART NUMBER INFORMATION

Global Part Numbering example: WSLS2512R0100FHEA

|              |   |   |   |                                      |   |   |   |                                                       |   |   |   |                                                                   |   |   |   |                                                                   |  |                                                                    |
|--------------|---|---|---|--------------------------------------|---|---|---|-------------------------------------------------------|---|---|---|-------------------------------------------------------------------|---|---|---|-------------------------------------------------------------------|--|--------------------------------------------------------------------|
| W            | S | L | S | 2                                    | 5 | 1 | 2 | R                                                     | 0 | 1 | 0 | 0                                                                 | F | H | E | A                                                                 |  |                                                                    |
| GLOBAL MODEL |   |   |   | RESISTANCE VALUE                     |   |   |   | TOLERANCE CODE                                        |   |   |   | RTC/STABILITY                                                     |   |   |   | PACKAGING CODE                                                    |  | SPECIAL                                                            |
| WSLS2512     |   |   |   | R = Decimal<br>R0100 = 0.01 $\Omega$ |   |   |   | D = $\pm$ 0.5 %<br>F = $\pm$ 1.0 %<br>J = $\pm$ 5.0 % |   |   |   | G = 75 ppm,<br>0.25 % stability<br>H = 75 ppm,<br>0.5 % stability |   |   |   | EA = Lead (Pb)-free,<br>tape/reel<br>EK = Lead (Pb)-free,<br>bulk |  | (Dash number)<br>(up to 2 digits)<br>From 1 to 99 as<br>applicable |

\*\* Please see document "Vishay Material Category Policy": [www.vishay.com/doc?99902](http://www.vishay.com/doc?99902)

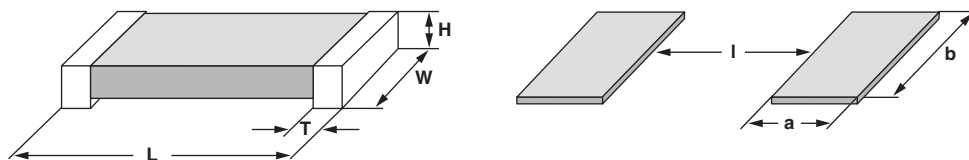


# WSLS2512, Improved Stability

Improved Stability (0.25 % and 0.5 %),  
Power Metal Strip® Resistors  
Low Value (0.01  $\Omega$  to 0.1  $\Omega$ ), Surface Mount

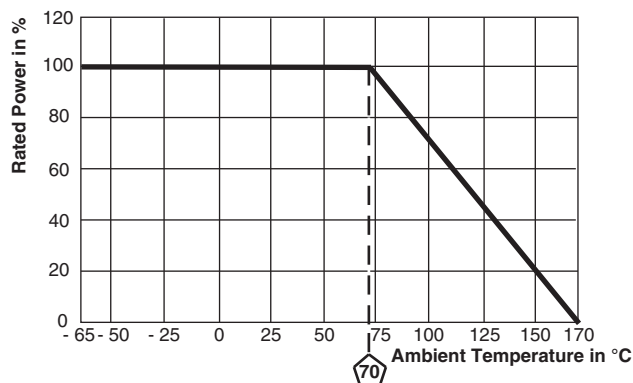
Vishay Dale

**DIMENSIONS** in inches (millimeters)



| MODEL    | DIMENSIONS                              |                                         |                                          |                                          | SOLDER PAD DIMENSIONS |                 |                 |
|----------|-----------------------------------------|-----------------------------------------|------------------------------------------|------------------------------------------|-----------------------|-----------------|-----------------|
|          | L                                       | W                                       | H                                        | T                                        | a                     | b               | l               |
| WSLS2512 | 0.250 $\pm$ 0.010<br>(6.35 $\pm$ 0.254) | 0.125 $\pm$ 0.010<br>(3.18 $\pm$ 0.254) | 0.025 $\pm$ 0.010<br>(0.635 $\pm$ 0.254) | 0.030 $\pm$ 0.010<br>(0.762 $\pm$ 0.254) | 0.065<br>(1.65)       | 0.145<br>(3.68) | 0.160<br>(4.06) |

## DERATING



## PERFORMANCE

| TEST                      | CONDITIONS OF TEST                                             | TEST LIMITS                                |                        |
|---------------------------|----------------------------------------------------------------|--------------------------------------------|------------------------|
|                           |                                                                | 0.25 %                                     | 0.5 %                  |
| Thermal shock             | - 55 °C to + 150 °C, 1000 cycles, 15 min at each extreme       | $\pm$ (0.5 % + 0.005 $\Omega$ ) $\Delta R$ |                        |
| Short time overload       | 5 x rated power for 5 s for WSL2512 size or smaller            | $\pm$ (0.5 % + 0.005 $\Omega$ ) $\Delta R$ |                        |
| Low temperature operation | - 65 °C for 45 min                                             | $\pm$ (0.5 % + 0.005 $\Omega$ ) $\Delta R$ |                        |
| High temperature exposure | 1000 h at + 170 °C                                             | $\pm$ (1.0 % + 0.005 $\Omega$ ) $\Delta R$ |                        |
| Bias humidity             | + 85 °C, 85 % RH, 10 % bias, 1000 h                            | $\pm$ (0.5 % + 0.005 $\Omega$ ) $\Delta R$ |                        |
| Mechanical shock          | 100 g's for 6 ms, 5 pulses                                     | $\pm$ (0.5 % + 0.005 $\Omega$ ) $\Delta R$ |                        |
| Vibration                 | Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h | $\pm$ (0.5 % + 0.005 $\Omega$ ) $\Delta R$ |                        |
| Load life                 | 2000 h at 70 °C, 1.5 h "ON", 0.5 h "OFF"                       | $\pm$ 0.25 % $\Delta R$                    | $\pm$ 0.5 % $\Delta R$ |
| Resistance to solder heat | + 260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence         | $\pm$ (0.5 % + 0.005 $\Omega$ ) $\Delta R$ |                        |
| Moisture resistance       | MIL-STD-202, method 106, 0 % power, 7b not required            | $\pm$ (0.5 % + 0.005 $\Omega$ ) $\Delta R$ |                        |

## PACKAGING

| MODEL    | REEL                   |           |             |      |
|----------|------------------------|-----------|-------------|------|
|          | TAPE WIDTH             | DIAMETER  | PIECES/REEL | CODE |
| WSLS2512 | 12 mm/embossed plastic | 178 mm/7" | 2000        | EA   |

### Note

- Embossed Carrier Tape per EIA-481.



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