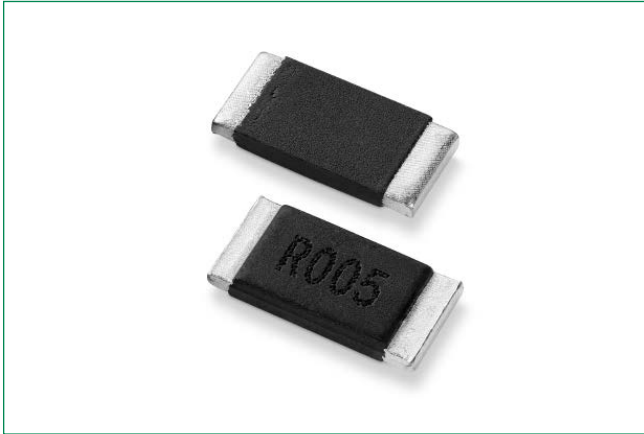


# Two-Terminal Surface Mount Resistor

## WPA/B/C Series

**HF** **RoHS** 

### Description

Littelfuse WPA/B/C Series is low Ohm current sense resistor, designed with long stability, durability, excels at heat dissipation. It is a metal plate construction with low profile.

### Features & Benefits

- Power rating up to 3 W
- Tolerance down to  $\pm 0.5\%$
- Small size
- High voltage

### Application

- Power management
- Low ESL

### Additional Information

**Resources****Accessories****Samples**

# Two-Terminal Surface Mount Resistor

## WPA/B/C Series

### Electrical Specifications

| Littelfuse Series | Part Number      | Size |      | Resistance Value |        | Power Rating (Watt) | TCR (ppm / °C) | Standard Package Quantity |
|-------------------|------------------|------|------|------------------|--------|---------------------|----------------|---------------------------|
|                   |                  | Inch | mm   | Ro (mΩ)          | Rt (%) |                     |                |                           |
| WPA               | WPA1206GLR001FYR | 1206 | 3216 | 1                | ±1.0%  | 1,0                 | ±150           | 4000                      |
| WPA               | WPA1206GLR002FYR | 1206 | 3216 | 2                | ±1.0%  | 1,0                 | ±150           | 4000                      |
| WPA               | WPA1206GLR003FYR | 1206 | 3216 | 3                | ±1.0%  | 1,0                 | ±150           | 4000                      |
| WPA               | WPA1206DLR004FYR | 1206 | 3216 | 4                | ±1.0%  | 1,0                 | ±75            | 4000                      |
| WPA               | WPA1206DLR005FYR | 1206 | 3216 | 5                | ±1.0%  | 1,0                 | ±75            | 4000                      |
| WPA               | WPA1206DLR005DYR | 1206 | 3216 | 5                | ±0.5%  | 1,0                 | ±75            | 4000                      |
| WPA               | WPA1206DLR006FYR | 1206 | 3216 | 6                | ±1.0%  | 1,0                 | ±75            | 4000                      |
| WPA               | WPA1206DLR007FYR | 1206 | 3216 | 7                | ±1.0%  | 1,0                 | ±75            | 4000                      |
| WPA               | WPA1206DLR008FYR | 1206 | 3216 | 8                | ±1.0%  | 1,0                 | ±75            | 4000                      |
| WPA               | WPA1206DLR009FYR | 1206 | 3216 | 9                | ±1.0%  | 1,0                 | ±75            | 4000                      |
| WPA               | WPA1206DLR010FYR | 1206 | 3216 | 10               | ±1.0%  | 1,0                 | ±75            | 4000                      |
| WPA               | WPA1206DLR011FYR | 1206 | 3216 | 11               | ±1.0%  | 1,0                 | ±75            | 4000                      |
| WPA               | WPA1206DLR012FYR | 1206 | 3216 | 12               | ±1.0%  | 1,0                 | ±75            | 4000                      |
| WPA               | WPA1206DLR013FYR | 1206 | 3216 | 13               | ±1.0%  | 1,0                 | ±75            | 4000                      |
| WPA               | WPA1206DLR014FYR | 1206 | 3216 | 14               | ±1.0%  | 1,0                 | ±75            | 4000                      |
| WPA               | WPA1206DLR015FYR | 1206 | 3216 | 15               | ±1.0%  | 1,0                 | ±75            | 4000                      |
| WPB               | WPB2512GL0M50FWR | 2512 | 6432 | 0.5              | ±1.0%  | 2                   | ±150           | 3000                      |
| WPB               | WPB2512GL0M75FWR | 2512 | 6432 | 0.75             | ±1.0%  | 2                   | ±150           | 3000                      |
| WPB               | WPB2512RLR001FYR | 2512 | 6432 | 1                | ±1.0%  | 2                   | ±100           | 4000                      |
| WPB               | WPB2512RL1M50FYR | 2512 | 6432 | 1.5              | ±1.0%  | 2                   | ±100           | 4000                      |
| WPB               | WPB2512QLR002FYR | 2512 | 6432 | 2                | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR003FYR | 2512 | 6432 | 3                | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR004FYR | 2512 | 6432 | 4                | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR005FYR | 2512 | 6432 | 5                | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR006FYR | 2512 | 6432 | 6                | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR007FYR | 2512 | 6432 | 7                | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR008FYR | 2512 | 6432 | 8                | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR009FYR | 2512 | 6432 | 9                | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR010FYR | 2512 | 6432 | 10               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR011FYR | 2512 | 6432 | 11               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR012FYR | 2512 | 6432 | 12               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR013FYR | 2512 | 6432 | 13               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR014FYR | 2512 | 6432 | 14               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR015FYR | 2512 | 6432 | 15               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR016FYR | 2512 | 6432 | 16               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR018FYR | 2512 | 6432 | 18               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR020FYR | 2512 | 6432 | 20               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR021FYR | 2512 | 6432 | 21               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR022FYR | 2512 | 6432 | 22               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR024FYR | 2512 | 6432 | 24               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR027FYR | 2512 | 6432 | 27               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR028FYR | 2512 | 6432 | 28               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR030FYR | 2512 | 6432 | 30               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR033FYR | 2512 | 6432 | 33               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR034FYR | 2512 | 6432 | 34               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR036FYR | 2512 | 6432 | 36               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR039FYR | 2512 | 6432 | 39               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR043FYR | 2512 | 6432 | 43               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR047FYR | 2512 | 6432 | 47               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR050FYR | 2512 | 6432 | 50               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR051FYR | 2512 | 6432 | 51               | ±1.0%  | 2                   | ±50            | 4000                      |
| WPB               | WPB2512QLR056FYR | 2512 | 6432 | 56               | ±1.0%  | 2                   | ±50            | 4000                      |

# Two-Terminal Surface Mount Resistor

## WPA/B/C Series

### Electrical Specifications

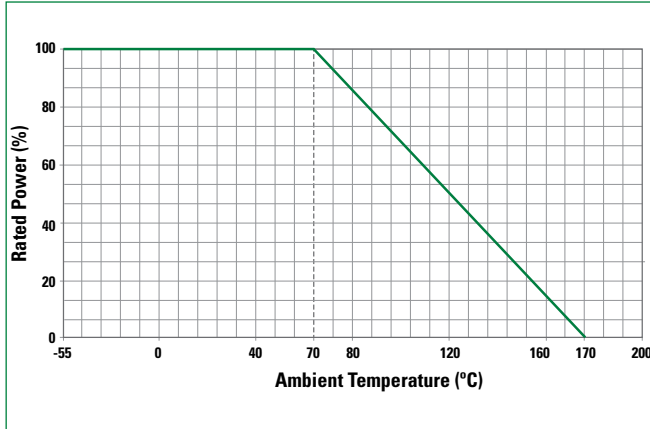
| Littelfuse Series | Part Number      | Size |      | Resistance Value |        | Power Rating (Watt) | TCR (ppm / °C) | Standard Package Quantity |
|-------------------|------------------|------|------|------------------|--------|---------------------|----------------|---------------------------|
|                   |                  | Inch | mm   | Ro (mΩ)          | Rt (%) |                     |                |                           |
| WPC               | WPC2512GL0M50FWR | 2512 | 6432 | 0.5              | ±1.0%  | 3                   | ±150           | 3000                      |
| WPC               | WPC2512GL0M75FWR | 2512 | 6432 | 0.75             | ±1.0%  | 3                   | ±150           | 3000                      |
| WPC               | WPC2512RLR001FWR | 2512 | 6432 | 1                | ±1.0%  | 3                   | ±100           | 3000                      |
| WPC               | WPC2512QLR002FWR | 2512 | 6432 | 2                | ±1.0%  | 3                   | ±50            | 3000                      |
| WPC               | WPC2512QLR003FWR | 2512 | 6432 | 3                | ±1.0%  | 3                   | ±50            | 3000                      |
| WPC               | WPC2512QLR004FWR | 2512 | 6432 | 4                | ±1.0%  | 3                   | ±50            | 3000                      |
| WPC               | WPC2512QLR005FYR | 2512 | 6432 | 5                | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR006FYR | 2512 | 6432 | 6                | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR007FYR | 2512 | 6432 | 7                | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR008FYR | 2512 | 6432 | 8                | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR009FYR | 2512 | 6432 | 9                | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR010FYR | 2512 | 6432 | 10               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR011FYR | 2512 | 6432 | 11               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR012FYR | 2512 | 6432 | 12               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR013FYR | 2512 | 6432 | 13               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR014FYR | 2512 | 6432 | 14               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR015FYR | 2512 | 6432 | 15               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR016FYR | 2512 | 6432 | 16               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR018FYR | 2512 | 6432 | 18               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR020FYR | 2512 | 6432 | 20               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR021FYR | 2512 | 6432 | 21               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR022FYR | 2512 | 6432 | 22               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR024FYR | 2512 | 6432 | 24               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR027FYR | 2512 | 6432 | 27               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR028FYR | 2512 | 6432 | 28               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR030FYR | 2512 | 6432 | 30               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR033FYR | 2512 | 6432 | 33               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR034FYR | 2512 | 6432 | 34               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR036FYR | 2512 | 6432 | 36               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR039FYR | 2512 | 6432 | 39               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR043FYR | 2512 | 6432 | 43               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR047FYR | 2512 | 6432 | 47               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR050FYR | 2512 | 6432 | 50               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR051FYR | 2512 | 6432 | 51               | ±1.0%  | 3                   | ±50            | 4000                      |
| WPC               | WPC2512QLR056FYR | 2512 | 6432 | 56               | ±1.0%  | 3                   | ±50            | 4000                      |

**Note:** Resistors are available in steps of 1 mΩ. Ratings not indicated in the above table may be available on request

# Two-Terminal Surface Mount Resistor

## WPA/B/C Series

### Temperature De-rating Curve



### Storage / Environment Conditions

Products should be stored under the following environmental conditions.

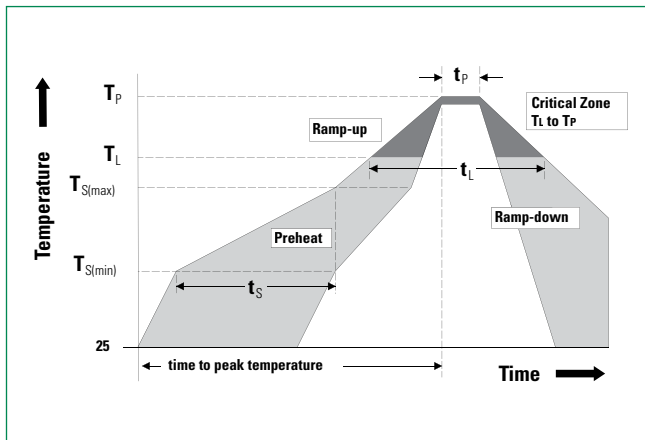
|                                    |                             |
|------------------------------------|-----------------------------|
| <b>Temperature:</b>                | +5 to +35 °C                |
| <b>Humidity:</b>                   | 45 to 85% relative humidity |
| <b>Moisture Sensitivity Level:</b> | 1, J-STD-020                |

Do not keep products in environments where they may be subject to particulate contamination or harmful gases such as sulfuric acid or hydrogen chloride as it may cause oxidation on electrodes, resulting poor solderability.

Products should be stored in a space that does not expose to high temperatures, vibration, or direct sunlight.

Products should be stored in the original airtight packaging until use.

### Soldering Parameters–Wave Soldering



| Profile Feature                                                           | Pb-Free Assembly      |
|---------------------------------------------------------------------------|-----------------------|
| <b>Average Ramp-Up Rate (<math>T_{S(max)}</math> to <math>T_P</math>)</b> | 3 °C / second max     |
| <b>Preheat</b>                                                            |                       |
| Temperature Minimum ( $T_{S(min)}$ )                                      | 150 °C                |
| Temperature Maximum ( $T_{S(max)}$ )                                      | 200 °C                |
| Time ( $T_{S(min)}$ to $T_{S(max)}$ )                                     | 60–180 seconds        |
| <b>Time maintained above</b>                                              |                       |
| Temperature Minimum ( $T_L$ )                                             | 217 °C                |
| Time ( $t_L$ )                                                            | 60–150 seconds        |
| <b>Peak Temperature (<math>T_P</math>)</b>                                | 260 ± 0 °C            |
| <b>Time within 5 °C of Actual Peak Temperature (<math>t_P</math>)</b>     | 20–40 seconds         |
| <b>Ramp-Down Rate</b>                                                     | 6 °C / second Maximum |
| <b>Time 25 °C to Peak Temperature</b>                                     | 8 minutes Maximum     |

# Two-Terminal Surface Mount Resistor

## WPA/B/C Series

### Reliability Specifications

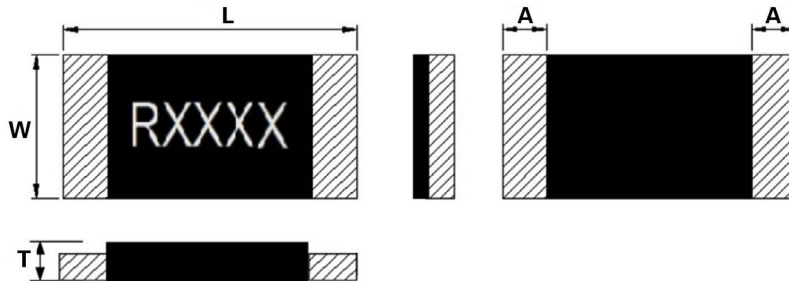
| Test                                 | Procedure                                                                                                                                                                     | Specifications                                                               |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| <b>ESD</b>                           | HBM, 100pF, 1.5k ohms Repetition: 5 times<br>Component Classification: 5C (25KV)                                                                                              | ±1.0% Appearance: Without distinct damage, and the marking shall be legible. |
| <b>Load Life (Operational Life)</b>  | Test Temperature: 125°C<br>Applied voltage: rated power (derated Power will be required if temp exceeds the derating point of part)<br>Test Period: 1,000 hours (condition D) | ±1.0% Appearance: Without distinct damage, and the marking shall be legible. |
| <b>Biased Humidity</b>               | Test conditions: 85°C and 85% RH 10% of rated power<br>Test Period 1,000 hours                                                                                                | ±1.0% Appearance: Without distinct damage, and the marking shall be legible. |
| <b>Temp. Cycling (Thermal Shock)</b> | Repeat 1,000 cycles as follows:<br>-55°C for 30 minutes 125°C for 30 minutes<br>Transition time of 1 minute max                                                               | ±1.0% Appearance: Without distinct damage, and the marking shall be legible. |
| <b>High Temp. Exposure (Storage)</b> | Test Temp 125°C<br>Test Period: 1,000 hours No Electrical Load                                                                                                                | ±1.0% Appearance: Without distinct damage, and the marking shall be legible. |
| <b>Resistance to soldering heat</b>  | Condition B (Solder dip, no pre-heat) 260°C                                                                                                                                   | ±1.0% Parts must meet initial electrical specs.                              |
| <b>Resistance to Solvents</b>        | 3 minute soak 2-3 ounce force<br>10 strokes/repetition<br>3 repetitions                                                                                                       | Appearance: Without distinct damage, and the marking shall be legible.       |
| <b>Terminal Strength (SMD)</b>       | Applied force based on part size                                                                                                                                              | ±1.0% Appearance: Without distinct damage, and the marking shall be legible. |
| <b>Flammability</b>                  | UL-94<br>V-0 or V-1 are acceptable<br>Electrical test not required                                                                                                            | V-0 burning less than 10 seconds or<br>V-1 burning less than 30 seconds      |
| <b>Flame Retardance</b>              | Mounted parts subjected to voltages from 9.0 to 32 VDC (current clamped up to 500A)                                                                                           | No Flame when full automotive battery potential is applied.                  |
| <b>Vibration</b>                     | Frequency: 10-2,000 Hz Acceleration: 5G<br>Test duration: 20 minutes, 12 cycles                                                                                               | ±1.0% Appearance: Without distinct damage, and the marking shall be legible. |
| <b>Mechanical Shock</b>              | Force: 100G peak Test duration: 6 ms Half-sine waveform Velocity: 12.3ft/sec                                                                                                  | ±1.0% Appearance: Without distinct damage, and the marking shall be legible. |
| <b>Board Flex</b>                    | 90 mm span between fulcrums 2 mm bend<br>60 seconds minimum holding time                                                                                                      | ±1.0% Appearance: Without distinct damage, and the marking shall be legible. |
| <b>Solderability</b>                 | Non-activated flux dip: 5-10 seconds SAC solder dip: 5 seconds at 245°C                                                                                                       | A new solder shall cover minimum of 95%.                                     |

# Two-Terminal Surface Mount Resistor

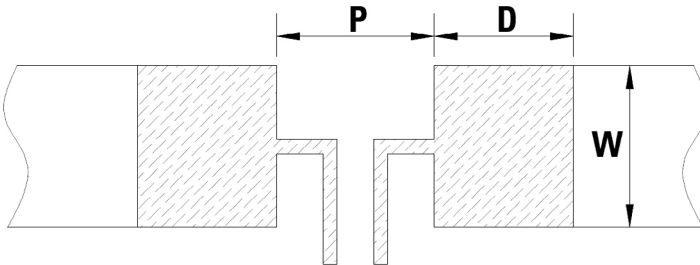
## WPA/B/C Series

### Dimensions

All dimensions in mm



| Part Number        | W         | L         | T         | A         |
|--------------------|-----------|-----------|-----------|-----------|
| WPA1206 R001       | 1.60±0.20 | 3.30±0.20 | 0.90±0.20 | 0.70±0.30 |
| WPA1206 R002-R005  |           |           | 0.80±0.20 |           |
| WPA1206 R006-R015  |           |           |           |           |
| WPB2512 0M50, 0M75 | 3.20±0.30 | 6.40±0.30 | 1.05±0.20 | 1.90±0.25 |
| WPB2512 R001, 1M50 | 3.20±0.30 | 6.40±0.30 | 0.90±0.20 | 1.90±0.25 |
| WPB2512 R002~R056  | 3.20±0.30 | 6.40±0.30 | 0.90±0.20 | 0.80±0.25 |
| WPC2512 0M50~0M75  | 3.20±0.30 | 6.40±0.30 | 1.05±0.20 | 1.90±0.25 |
| WPC2512 R001~R004  | 3.20±0.30 | 6.40±0.30 | 1.10±0.20 | 0.80±0.25 |
| WPC2512 R001~R056  | 3.20±0.30 | 6.40±0.30 | 0.90±0.20 | 0.80±0.25 |



| Part Number                    | P       | W       | D       | Loading |
|--------------------------------|---------|---------|---------|---------|
| WPA1206                        | 1.20mm  | 1.84mm  | 1.80mm  | 1.0 W   |
| WPB2512 0M50, 0M75, R001, 1M50 | 1.50 mm | 3.57 mm | 2.95 mm | 2.0 W   |
| WPB2512 R002~R056              | 3.18 mm | 3.57 mm | 2.11 mm | 2.0 W   |
| WPC2512 0M50~0M75              | 1.50 mm | 3.57 mm | 2.95 mm | 3.0 W   |
| WPC2512 R001~R056              | 3.18 mm | 3.57 mm | 2.11 mm | 3.0 W   |

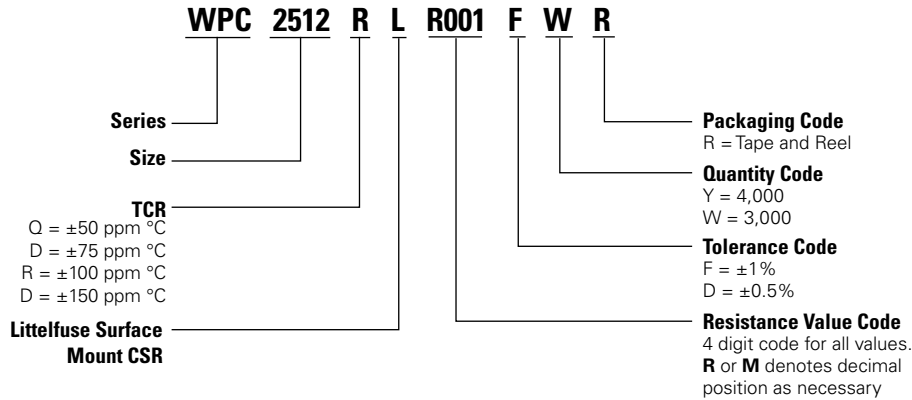
### Packaging

| Part Number             | Halogen Free | Packaging Option | Quantity | Quantity & Packaging Codes |
|-------------------------|--------------|------------------|----------|----------------------------|
| WPA1206                 | Yes          | Tape and Reel    | 4000     | YR                         |
| WPB2512 0M50, 0M75      | Yes          | Tape and Reel    | 3000     | WR                         |
| WPB2512 1M50, R001~R056 | Yes          | Tape and Reel    | 4000     | YR                         |
| WPC2512 0M50, 0M75      | Yes          | Tape and Reel    | 3000     | WR                         |
| WPC2512 R001~R004       | Yes          | Tape and Reel    | 3000     | WR                         |
| WPC2512 R005~R056       | Yes          | Tape and Reel    | 4000     | YR                         |

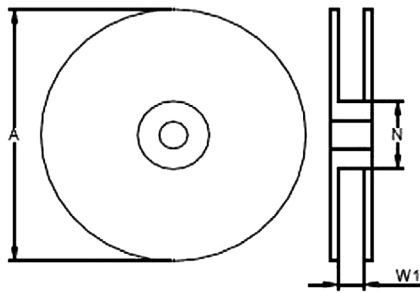
# Two-Terminal Surface Mount Resistor

## WPA/B/C Series

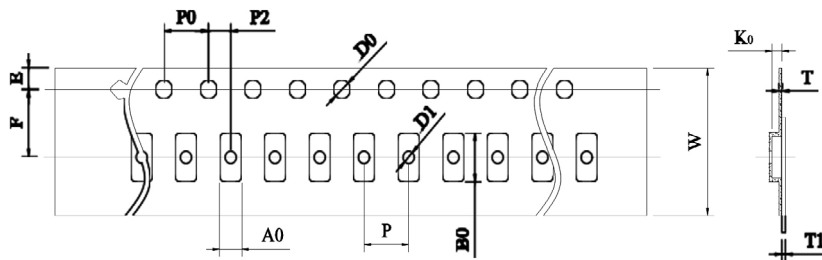
### Part Numbering System



### Tape and Reel Specifications



| Part Number | A $\pm 5$ (mm) | N $\pm 2$ (mm) | W1 $\pm 1$ (mm) |
|-------------|----------------|----------------|-----------------|
| WPA1206     | 178            | 60             | 9               |
| WPB2512     | 178            | 60             | 13              |
| WPC2512     | 178            | 60             | 13              |



| Part Number                         | W (mm)           | P0 (mm)         | P (mm)          | P2 (mm)         | A0 (mm)         | B0 (mm)         | D0 (mm)         | F (mm)          | E (mm)          | T (mm)          | T1 (mm)   | K0 (mm)           |
|-------------------------------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------|-------------------|
| WPA1206                             | 8.00 $\pm 0.30$  | 4.00 $\pm 0.10$ | 4.00 $\pm 0.10$ | 2.00 $\pm 0.10$ | 2.10 $\pm 0.10$ | 3.70 $\pm 0.10$ | 1.50 $\pm 0.10$ | 3.50 $\pm 0.10$ | 1.75 $\pm 0.10$ | 1.12 $\pm 0.10$ | -         | -                 |
| WPB2512<br>0M50, 0M75               | 12.00 $\pm 0.30$ | 4.00 $\pm 0.10$ | 4.00 $\pm 0.10$ | 2.00 $\pm 0.10$ | 3.40 $\pm 0.20$ | 6.75 $\pm 0.20$ | 1.55 $\pm 0.10$ | 5.50 $\pm 0.10$ | 1.75 $\pm 0.10$ | 0.20 $\pm 0.10$ | Max. 0.1  | 1.30<br>+0.2/-0.1 |
| WPB2512<br>R001, 1M50,<br>R002~R004 | 12.00 $\pm 0.30$ | 4.00 $\pm 0.10$ | 4.00 $\pm 0.10$ | 2.00 $\pm 0.10$ | 3.40 $\pm 0.20$ | 6.75 $\pm 0.20$ | 1.55 $\pm 0.10$ | 5.50 $\pm 0.10$ | 1.75 $\pm 0.10$ | 0.20 $\pm 0.10$ | Max. 0.10 | 1.00 $\pm 0.20$   |
| WPC2512<br>0M50, 0M75               | 12.00 $\pm 0.30$ | 4.00 $\pm 0.10$ | 4.00 $\pm 0.10$ | 2.00 $\pm 0.10$ | 3.40 $\pm 0.20$ | 6.75 $\pm 0.20$ | 1.55 $\pm 0.10$ | 5.50 $\pm 0.10$ | 1.75 $\pm 0.10$ | 0.20 $\pm 0.10$ | Max. 0.10 | 1.30<br>+0.2/-0.1 |
| WPC2512<br>R001~R004                | 12.00 $\pm 0.30$ | 4.00 $\pm 0.10$ | 4.00 $\pm 0.10$ | 2.00 $\pm 0.10$ | 3.40 $\pm 0.20$ | 6.75 $\pm 0.20$ | 1.55 $\pm 0.10$ | 5.50 $\pm 0.10$ | 1.75 $\pm 0.10$ | 0.20 $\pm 0.10$ | Max. 0.10 | 1.30 $\pm 0.20$   |
| WPC2512<br>R005~R056                | 12.00 $\pm 0.30$ | 4.00 $\pm 0.10$ | 4.00 $\pm 0.10$ | 2.00 $\pm 0.10$ | 3.40 $\pm 0.20$ | 6.75 $\pm 0.20$ | 1.55 $\pm 0.10$ | 5.50 $\pm 0.10$ | 1.75 $\pm 0.10$ | 0.20 $\pm 0.10$ | Max. 0.10 | 1.00 $\pm 0.20$   |

**Note:** Tape and reel packaging in accordance to EIA-481

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