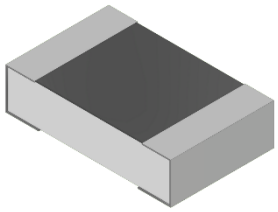
## Features:

- 2 W 2512 size chip
- Wide resistance range
- Cooler operation than standard 2512 size thick film chip
- RoHS compliant, REACH compliant, and halogen free
- AEC-Q200 compliant

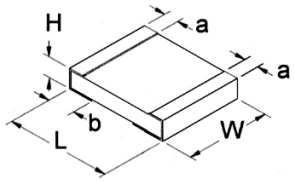


## Electrical Specifications

| Type/Code | Package Type | Power Rating (W) @ 70ºC | Maximum Working Voltage (V)(1) | Maximum Overload Voltage (V) | TCR (ppm/ºC) | Ohmic Range (Ω) and Tolerance |
|---|---|---|---|---|---|---|
| | | | | | | 1%, 5% |
| RHC2512 | 2512 | 2 | 200 | 400 | ±100 | 0.1 - 1M |

Note: (1) Lesser of √(P*R) or maximum working voltage

## Mechanical Specifications



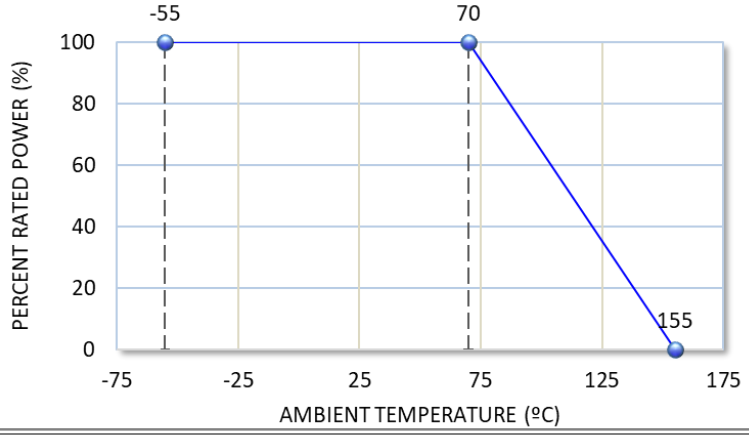

| Type/Code | L Body Length | W Body Width | H Body Height | a Top Termination | b Bottom Termination | Unit |
|---|---|---|---|---|---|---|
| RHC2512 | 0.248 ± 0.008<br>6.30 ± 0.20 | 0.126 ± 0.008<br>3.20 ± 0.20 | 0.024 ± 0.004<br>0.60 ± 0.10 | 0.028 ± 0.008<br>0.70 ± 0.20 | 0.087 ± 0.008<br>2.20 ± 0.20 | inches<br>mm |

## Performance Characteristics

| Test | Typical |
|---|---|
| Moisture Resistance | ±1% + 0.05Ω for <10Ω and ±1% for ≥10Ω |
| Load Life | |
| Resistance to Soldering | |
| Temperature Cycling | |
| Thermal Shock | |
| Short Time Overload | |
| Insulation Resistance | ≥1MΩ |

Operating temperature range is -55 to +155°C

## Power Derating Curve:

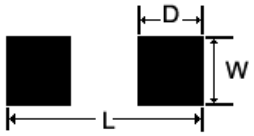






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| Recommended Solder Pad | | | | |
|---|---|---|---|---|
|  | | | | |
| Type/Code | L<br>Total Length | W<br>Total Width | D<br>Pad Depth | Unit |
| RHC2512 | 0.315<br>8.00 | 0.138<br>3.50 | 0.118<br>3.00 | inches<br>mm |

## Recommended Solder Profile

This information is intended as a reference for solder profiles for Stackpole resistive components. These profiles should be compatible with most soldering processes. These are only recommendations. Actual numbers will depend on board density, geometry, packages used, etc., especially those cells labeled with "*".

### 100% Matte Sn over Ni

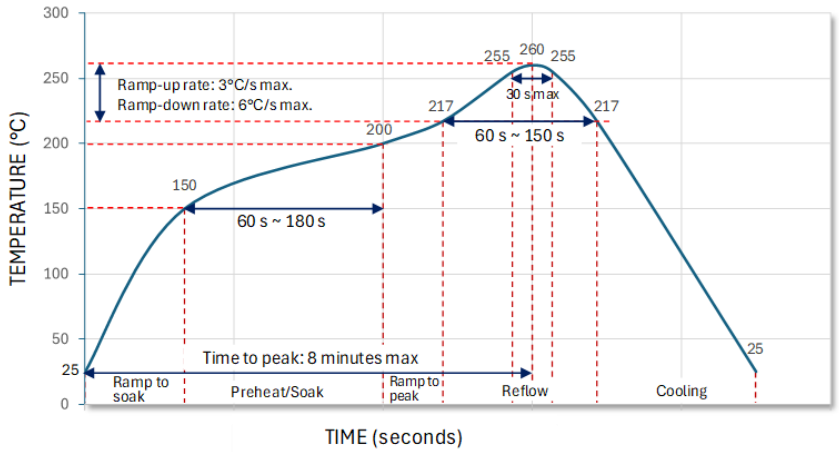
Soldering iron recommended temperatures: 330 to 350°C with minimum duration.
Maximum number of reflow cycles: 3.

| Wave Soldering | | | |
|---|---|---|---|
| Description | Maximum | Recommended | Minimum |
| Preheat Time | 80 seconds | 70 seconds | 60 seconds |
| Temperature Diff. | 140°C | 120°C | 100°C |
| Solder Temp. | 260°C | 250°C | 240°C |
| Dwell Time at Max | 10 seconds | 5 seconds | * |
| Ramp DN (°C/sec) | N/A | N/A | N/A |

Temperature Difference = Difference between final preheat stage and soldering stage.

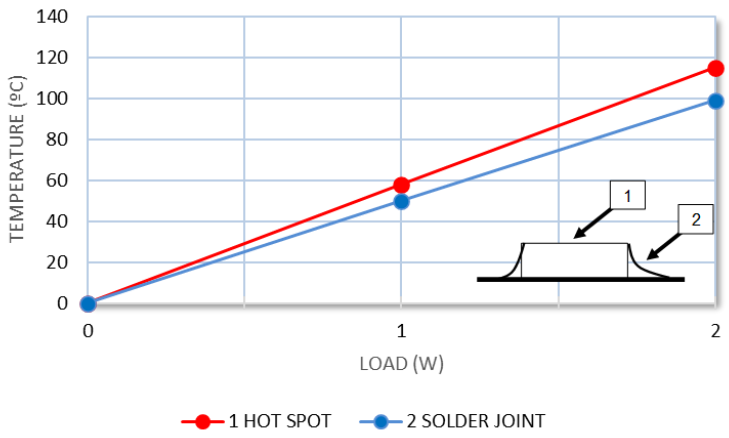

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## Recommended Resistor Reflow Profile




| Description | Maximum | Recommended | Minimum |
|---|---|---|---|
| Ramp Up (°C/s) from 217°C to 260°C | 3°C/s | 2°C/s | * |
| Ramp Down (°C/s) from 260°C to 217°C | 6°C/s | 3°C/s | * |
| Preheat/Soak Time from 150°C to 200°C | 120 seconds | - | 60 seconds |
| Reflow Dwell Time > 217°C | 150 seconds | 90 seconds | 60 seconds |
| Solder Temperature Peak | 260°C | 255°C | * |
| Peak Dwell Time > 255°C | 30 seconds | 15 seconds | 10 seconds |
| Time from 25°C to peak | 8 minutes max | | |
| Number of cycles | 3 cycles max | | |

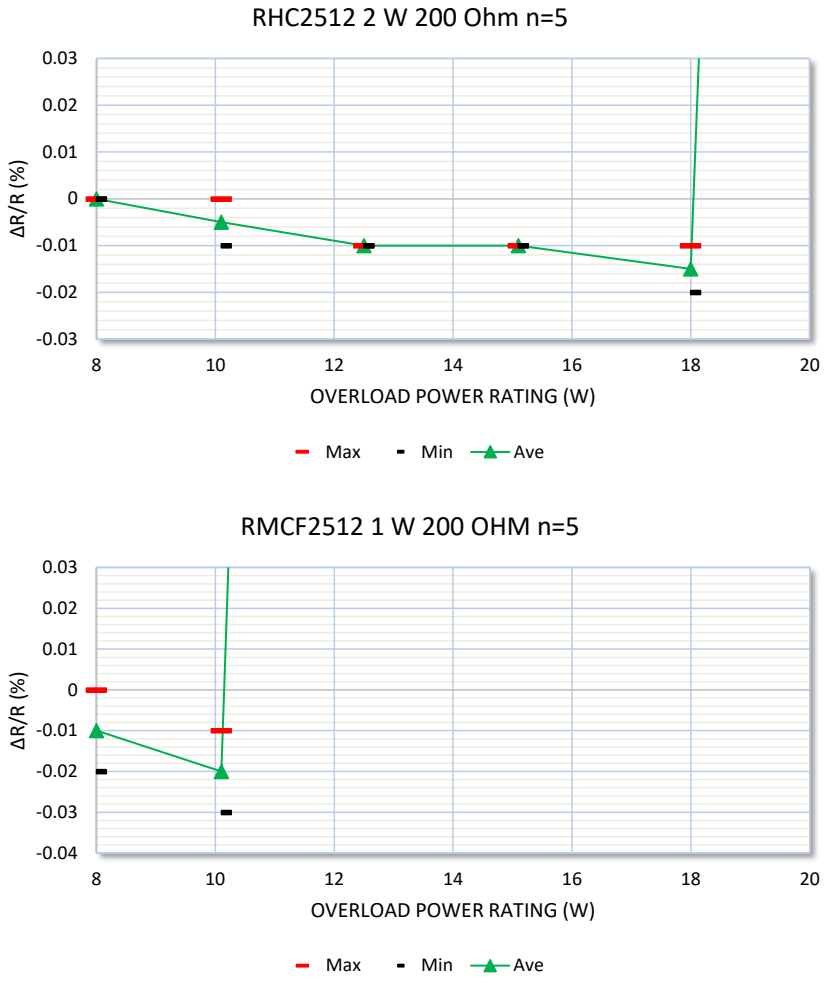
## Heat Rise and Terminal Temperature





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## Repeated Overload

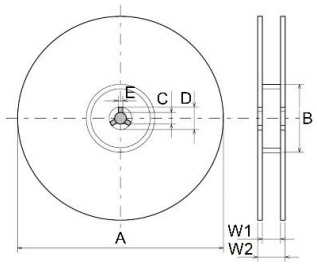



Test condition:
Voltage (Power): 2.0, 2.25, 2.5, 2.75, 3.0, 3.25 times of rated voltage. (8 W, 10.1 W, 12.5 W, 15.1 W, 18 W, 21.1 W)

Applied time:
Each voltage 5 seconds.
As a reference test, the RMCF was tested with the same rated voltage and testing substrate.

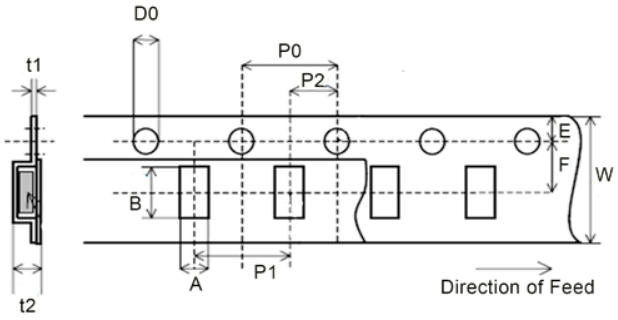

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## Reel Specifications




| Type | A | B | C | D | E | W1 | W2 | Unit |
|---|---|---|---|---|---|---|---|---|
| RHC2512 | 7.087 ± 0.118<br>180.00 ± 3.00 | 2.362 ± 0.039<br>60.00 ± 1.00 | 0.512 ± 0.008<br>13.00 ± 0.20 | 0.827 ± 0.031<br>21.00 ± 0.80 | 0.079 ± 0.020<br>2.00 ± 0.50 | 0.512 ± 0.012<br>13.00 ± 0.30 | 0.606 ± 0.039<br>15.40 ± 1.00 | Inches<br>mm |

## Taping Specifications - Plastic Tape




| Type | A | B | W | F | E | P1 | Unit |
|---|---|---|---|---|---|---|---|
| RHC2512 | 0.134 ± 0.004<br>3.40 ± 0.10 | 0.260 ± 0.004<br>6.60 ± 0.10 | 0.472 ± 0.008<br>12.00 ± 0.20 | 0.217 ± 0.002<br>5.50 ± 0.05 | 0.069 ± 0.004<br>1.75 ± 0.10 | 0.157 ± 0.004<br>4.00 ± 0.10 | Inches<br>mm |

| P2 | P0 | D0 | t1 | t2 | Unit |
|---|---|---|---|---|---|
| 0.079 ± 0.002<br>2.00 ± 0.05 | 0.157 ± 0.004<br>4.00 ± 0.10 | 0.061 ± 0.002<br>1.55 ± 0.05 | 0.010 ± 0.002<br>0.25 ± 0.05 | 0.039 ± 0.004<br>1.00 ± 0.10 | Inches<br>mm |


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## Part Marking Specifications

3-digit marking in E24 values (1% and 5% tolerances)
First and second digits are E24 code; third digit is the multiplier

| 3-digit marking for 2512 in E24 | | | |
|---|---|---|---|
| Resistance | 18Ω | 100Ω | 10KΩ |
| Marking | 180 | 101 | 103 |




| E24 Code | 10 | 11 | 12 | 13 | 15 | 16 | 18 | 20 | 22 | 24 | 27 | 30 | 33 | 36 | 39 | 43 | 47 | 51 | 56 | 62 | 68 | 75 | 82 | 91 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

1% E24 values may also be marked with 4-digit marking

| 3 or 4-digit marking | | |
|---|---|---|
| Resistance | 6.2 KΩ | |
| Marking | 3-digit | 4-digit |
| | 622 | 6201 |




4-digit marking in E96 values (1% tolerances)
Values < 100Ω will use "R" as the decimal holder

| 4-digit marking for 2512 in E96 | | | |
|---|---|---|---|
| Resistance | 0.976 | 10Ω | 1MΩ |
| Marking | R976 | 10R0 | 1004 |




### RoHS Compliance

Stackpole Electronics has joined the worldwide effort to reduce the amount of lead in electronic components and to meet the various regulatory requirements now prevalent, such as the European Union's directive regarding "Restrictions on Hazardous Substances" (RoHS 3). As part of this ongoing program, we periodically update this document with the status regarding the availability of our compliant components. All our standard part numbers are compliant to EU Directive 2011/65/EU of the European Parliament as amended by Directive (EU) 2015/863/EU as regards the list of restricted substances.

## RoHS Compliance Status

| Standard Product Series | Description | Package / Termination Type | Standard Series RoHS Compliant | Lead-Free Termination Composition |
|---|---|---|---|---|
| RHC | High Power Thick Film Chip Resistor | SMD | YES(1) | 100% Matte Sn over Ni |

Note (1): RoHS Compliant by means of exemption 7c-I.

### "Conflict Metals" Commitment

We at Stackpole Electronics, Inc. are joined with our industry in opposing the use of metals mined in the "conflict region" of the eastern Democratic Republic of the Congo (DRC) in our products. Recognizing that the supply chain for metals used in the electronics industry is very complex, we work closely with our own suppliers to verify to the extent possible that the materials and products we supply do not contain metals sourced from this conflict region. As such, we are in compliance with the requirements of Dodd-Frank Act regarding Conflict Minerals.


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## Compliance to “REACH”

We certify that all passive components supplied by Stackpole Electronics, Inc. are SVHC (Substances of Very High Concern) free and compliant with the requirements of EU Directive 1907/2006/EC, “The Registration, Evaluation, Authorization and Restriction of Chemicals”, otherwise referred to as REACH. Contact us for complete list of REACH Substance Candidate List.

## Environmental Policy

It is the policy of Stackpole Electronics, Inc. (SEI) to protect the environment in all localities in which we operate. We continually strive to improve our effect on the environment. We observe all applicable laws and regulations regarding the protection of our environment and all requests related to the environment to which we have agreed. We are committed to the prevention of all forms of pollution.

## How to Order

| R | H | C | 2 | 5 | 1 | 2 | F | T | 1 | 0 | K | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Product Series | |
|---|---|
| Series | Description |
| RHC | High Power |

| Size | |
|---|---|
| Code | W |
| 2512 | 2 |

| Tolerance | | |
|---|---|---|
| Code | Tol | Value |
| F | 1% | E96, E24 |
| J | 5% | E24 |

| Packaging | | | |
|---|---|---|---|
| Code | Description | Size | Quantity |
| T | 7" Reel Plastic Tape | 2512 | 4000 |

| Resistance Value |
|---|
| Four characters with the multiplier used as the decimal holder. |
| 0.1 ohm = R100<br>4.75 ohm = 4R75<br>10.2 Kohm = 10K2<br>1 Mohm = 1M00 |


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