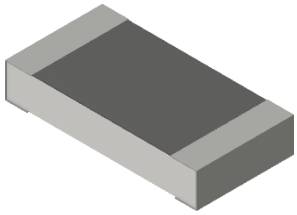
Features:



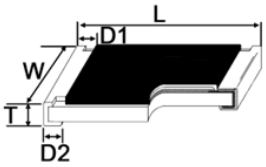
- High operating voltage up to 1000 V
- Low voltage coefficient < 1.5 ppm/V
- Superior moisture resistivity (85°C, 85% RH)
- Anti-sulfur per ASTM-B-809-95
- RoHS compliant, REACH compliant, lead free, and halogen free
- AEC-Q200 qualified

Electrical Specifications

Type/Code	Power Rating (W)[2] @ 70ºC	Max. Operating Voltage (V) [1]	Max. Overload Voltage (V)	TCR (ppm/ºC)	Ohmic Range (Ω) and Tolerance			
					0.1%	0.25%	0.5%	1%
RNCV0805	0.2	450	900	± 10	180K - 1M			
				± 15				
				± 25				
				± 50				
RNCV1206	0.25	700	1400	± 10	160K - 2M			
				± 15				
				± 25				
				± 50				
RNCV1210	0.33	1000	2000	± 10	121K - 3.01M			
				± 15				
				± 25				
				± 50				

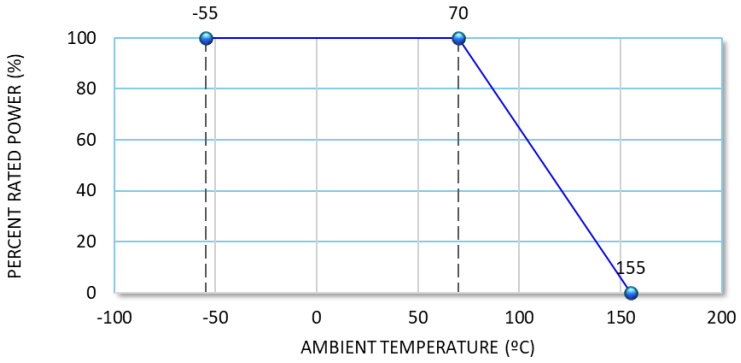
(1) Lesser of √P*R or maximum working voltage.

Mechanical Specifications



Type/Code	Weight (mg)	L Body Length	W Body Width	T Body Height	D1 Top Termination	D2 Bottom Termination	Unit
RNCV0805	5.3	0.079 ± 0.006 2.00 ± 0.15	0.049 ± 0.006 1.25 ± 0.15	0.022 ± 0.004 0.55 ± 0.10	0.012 ± 0.008 0.30 ± 0.20	0.016 ± 0.010 0.40 ± 0.25	inches mm
RNCV1206	10.8	0.120 ± 0.006 3.05 ± 0.15	0.061 ± 0.006 1.55 ± 0.15	0.022 ± 0.004 0.55 ± 0.10	0.017 ± 0.008 0.42 ± 0.20	0.014 ± 0.010 0.35 ± 0.25	inches mm
RNCV1210	15.7	0.122 ± 0.006 3.10 ± 0.15	0.094 ± 0.006 2.40 ± 0.15	0.022 ± 0.004 0.55 ± 0.10	0.016 ± 0.008 0.40 ± 0.20	0.022 ± 0.010 0.55 ± 0.25	inches mm

Power Derating Curve:



This specification may be changed at any time without prior notice.
Please confirm technical specifications before use.

Performance Characteristics			
Test	Test Method	Test Specification	Test Condition
Temperature coefficient of Resistance (T.C.R.)	JIS-C-5201-1 4.8 IEC-60115-1 4.8	As specified.	-55 ~ +125°C, 25°C is the reference temperature
Short Time Overload	JIS-C-5201-1 4.13	ΔR ± 0.05%	U=2*√(P*R) or Max. overload voltage whichever is lower for 5 seconds
Endurance	MIL-STD-202 Method 108	ΔR ± 0.1%	U= √ (P*R) 1.5 hours ON; 0.5 hour OFF; 70°C; 1000 hours
Damp Heat with Load	MIL-STD-202 Method 103	ΔR ± 0.1%	U= 0.1*√(P*R) 40 ± 2°C, 90~95% R.H. 1000 hours with 1.5 hours ON and 0.5 hour OFF
Biased Humidity	MIL-STD-202 Method 103	ΔR ± 0.25%	U= 0.3*√(P*R) 1000 hours, 85°C /85% RH Voltage does not exceed 100 V
Temperature Cycling	JESD22 Method JA-104	ΔR ± 0.1%	-55 to + 125°C, 1000 cycles
High Temperature Exposure	MIL-STD-202 Method 108	ΔR ± 0.2%	at +155°C for 1000 hours
Single Pulse High Voltage Overload	IEC61000-4-5	ΔR ± 0.1%	U=2*√(P*R) 10 pulses 10 us / 700 µs
Periodic Electric Overload	IEC60115-1 4.39	ΔR ± 0.1%	U=2*√(P*R) 0.1 second ON; 2.5 seconds OFF; 1000 cycles
Bending Strength (Board Flex)	JIS-C-5201-1 4.33	ΔR ± 0.05%	Bending amplitude 3 mm for 60 seconds
Solderability	JIS-C-5201-1 4.17 IEC-60115-1 4.17	95% min. coverage	245 ± 5°C for 3 seconds
Resistance to Soldering Heat	JIS-C-5201-1 4.18 IEC-60115-1 4.18	ΔR ± 0.02%	260 ± 5°C for 10 seconds
Terminal Strength	AEC-Q200-006	No breakage	Force of 1.8 kg for 60 seconds
Vibration	MIL-STD-202 Method 204	ΔR ± 0.05%	5 g's for 20 minutes, 12 cycles each of 3 orientations, 10-2000 Hz
ESD	AEC-Q200-002	ΔR ± 0.5%	Human body model 0805: 2 KV 1206, 1210: 6 KV
Dielectric Withstand Voltage	MIL-STD-202 Method 301	By type	Max. overload voltage for 1 minute
Resistance to Solvents	MIL-STD-202 Method 215	Marking unsmeared	Add aqueous wash chemical - OKEM Clean or equivalent. Do not use banned solvents.
Flammability	UL-94	No ignition of the tissue paper or scorching of the pinewood board	V-0 or V-1 are acceptable. Electrical test not required.
Sulfur Test	ASTM-B-809-95 Modified	ΔR ± 1%	105 ± 2°C no power rating for 750 hours

RCWV (Rated Continuous Working Voltage) = √P*R or Max. Operating Voltage, whichever is lower
Recommended storage temperature is 15 ~ 28°C; humidity < 80% RH
Operating temperature range is -55 to + 155°C
Shelf life is 2 years from production date

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Recommended Solder Profiles

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 "*".

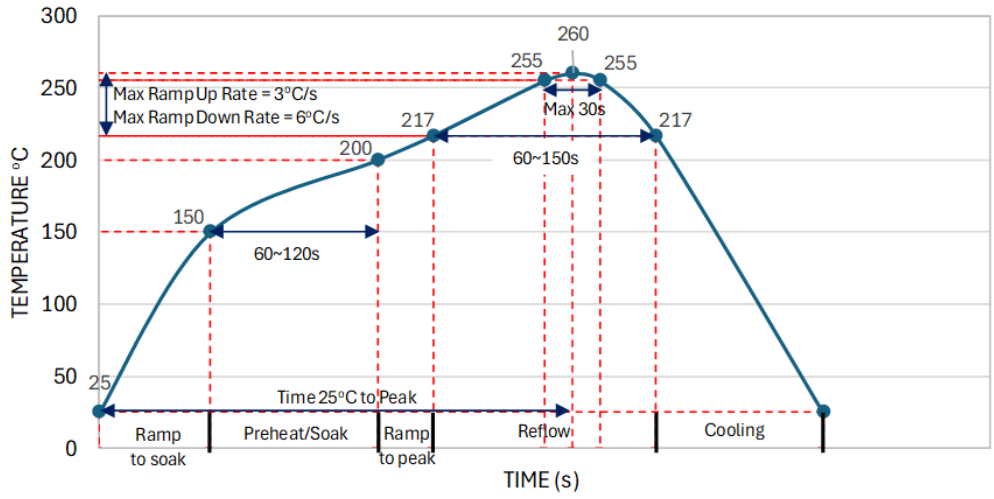
Soldering iron recommended temperatures: 330°C to 350°C with minimum duration.
Maximum number of reflow cycles: 3.

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

Convection IR Reflow			
Description	Maximum	Recommended	Minimum
Ramp Up (°C/sec)	3°C/sec	2°C/sec	*
Dwell Time > 217°C	150 seconds	90 seconds	60 seconds
Solder Temp.	260°C	245°C	*
Dwell Time at Max.	30 seconds	15 seconds	10 seconds
Ramp DN (°C/sec)	6°C/sec	3°C/sec	*

Recommended Resistor Reflow Profile



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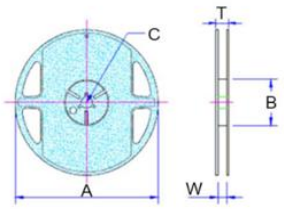
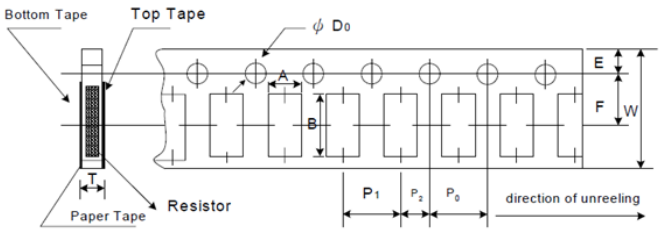
Reel Specifications



Type/Code	A	B	C	W	T	Unit
RNCV0805	7.008 ± 0.039 178.00 ± 1.00	2.362 ± 0.039 60.00 ± 1.00	0.531 ± 0.028 13.50 ± 0.70	0.374 ± 0.039 9.50 ± 1.00	0.453 ± 0.039 11.50 ± 1.00	inches mm
RNCV1206	7.008 ± 0.039 178.00 ± 1.00	2.362 ± 0.039 60.00 ± 1.00	0.531 ± 0.028 13.50 ± 0.70	0.374 ± 0.039 9.50 ± 1.00	0.453 ± 0.039 11.50 ± 1.00	inches mm
RNCV1210	7.008 ± 0.039 178.00 ± 1.00	2.362 ± 0.039 60.00 ± 1.00	0.531 ± 0.028 13.50 ± 0.70	0.374 ± 0.039 9.50 ± 1.00	0.453 ± 0.039 11.50 ± 1.00	inches mm

Taping Specifications - Paper Tape

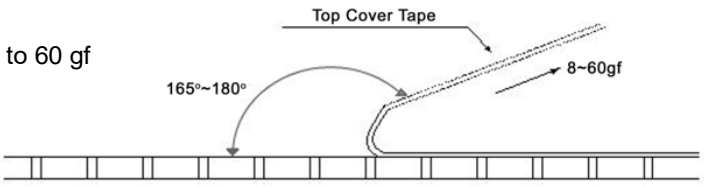


Type/Code	A	B	W	E	F	Unit
RNCV0805	0.063 ± 0.002 1.60 ± 0.05	0.093 ± 0.002 2.37 ± 0.05	0.315 ± 0.004 8.00 ± 0.10	0.069 ± 0.002 1.75 ± 0.05	0.138 ± 0.002 3.50 ± 0.05	inches mm
RNCV1206	0.079 ± 0.002 2.00 ± 0.05	0.140 ± 0.002 3.55 ± 0.05	0.315 ± 0.004 8.00 ± 0.10	0.069 ± 0.002 1.75 ± 0.05	0.138 ± 0.002 3.50 ± 0.05	inches mm
RNCV1210	0.108 ± 0.002 2.75 ± 0.05	0.134 ± 0.002 3.40 ± 0.05	0.315 ± 0.004 8.00 ± 0.10	0.069 ± 0.002 1.75 ± 0.05	0.138 ± 0.002 3.50 ± 0.05	inches mm

Type/Code	P0	P1	P2	D0	T	Unit
RNCV0805	0.157 ± 0.002 4.00 ± 0.05	0.157 ± 0.004 4.00 ± 0.10	0.079 ± 0.002 2.00 ± 0.05	0.061 ± 0.002 1.55 ± 0.05	0.030 ± 0.002 0.75 ± 0.05	inches mm
RNCV1206	0.157 ± 0.002 4.00 ± 0.05	0.157 ± 0.004 4.00 ± 0.10	0.079 ± 0.002 2.00 ± 0.05	0.061 ± 0.002 1.55 ± 0.05	0.030 ± 0.002 0.75 ± 0.05	inches mm
RNCV1210	0.157 ± 0.002 4.00 ± 0.05	0.157 ± 0.004 4.00 ± 0.10	0.079 ± 0.002 2.00 ± 0.05	0.063 ± 0.004 1.60 ± 0.10	0.030 ± 0.002 0.75 ± 0.05	inches mm

Peel Force of Top Cover Tape

The peel speed shall be about 300 mm / min ± 5%
The peel force of top cover tape shall be between 8 gf to 60 gf



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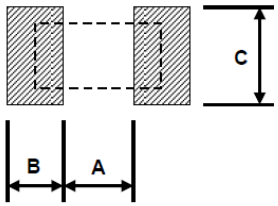
Recommended Solder Pad



Type/Code	A	B	C	Unit
RNCV0805	0.039 1.00	0.039 1.00	0.053 ± 0.008 1.35 ± 0.20	inches mm
RNCV1206	0.079 2.00	0.045 1.15	0.067 ± 0.008 1.70 ± 0.20	inches mm
RNCV1210	0.079 2.00	0.045 1.15	0.098 ± 0.008 2.50 ± 0.20	inches mm

Part Marking Specifications

E96 and E24 Values

The nominal resistance is marked on the surface of the overcoating with the use of four character markings. Example: 1MΩ = 1006 marking.
E192 values that are not shared E96 or E24 values are not marked.

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	Lead-Free Mfg. Effective Date (Std Product Series)	Lead-Free Effective Date Code (YY/WW)
RNCV	Automotive Grade High Voltage Thin Film	SMD	YES	100% Matte Sn over Ni	May-04	04/18

"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.

This specification may be changed at any time without prior notice.
Please confirm technical specifications before use.

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	N	C	V	1	2	0	6	D	T	C	2	M	0	0

Product Series

Code	Description
RNCV	Automotive Grade High Voltage Thin Film

Size

Code
0805
1206
1210

Tolerance

Code	Tol	Value (1)
B	0.1%	E192, E96, E24
C	0.25%	
D	0.5%	
F	1%	E96, E24

Packaging

Code	Description	Size	Quantity
T	7" Reel Paper Tape	All Sizes	5000

TCR

Code	ppm
T	10
S	15
E	25
C	50

Resistance Value (2)

Four characters with the multiplier used as the decimal holder.

160 Kohm = 160K
2 Mohm = 2M00
3.01 Mohm = 3M01

(1) E192 values that are not shared E96 or E24 values are not marked and may be subject to higher MOQ
(2) Values above 1 Mohm may be subject to higher MOQ

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