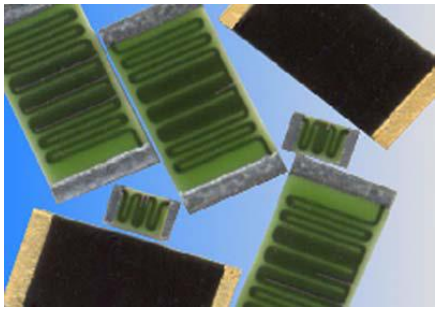
Features:



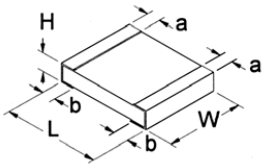
- Ohmic values to 50G
- Available with wire bondable terminations
- Tight tolerances to 0.1%
- Utilizes fine film resistor deposition technology
- Superior pulse handling capabilities
- Low TCR to 25 ppm/ºC
- Low VCR to 1 ppm/volt
- Very low noise
- Ultra-high stability
- Custom sizes available
- Higher (up to 1TΩ) or lower resistance values may be available (contact Stackpole)
- Standard HVC parts are unmarked
- RoHS compliant and halogen free
- REACH compliant

Electrical Specifications

Type / Code	Power Rating (W) @ 70ºC	Maximum Working Voltage (V) (1)	TCR (ppm/ºC)	Ohmic Range (Ω) and Tolerance							
				0.1%	0.25%	0.5%	1%	2%	5%	10%	20%
HVC0603	0.06	400	±50	-		10K - 10M	10K - 100M	10K - 500M			
			±100				10K - 500M	10K - 1G		10K - 1G	
			±200							10K - 10G	10K - 50G
HVC0805	0.2	600	±50	-		10K - 10M	10K - 500M				
			±100				10K - 1G		10K - 1G		
			±200						10K - 10G		10K - 50G
HVC1206	0.33	1500	±25	1M - 100M	1M - 100M						
			±50	100K - 100M	100K - 100M	100K - 500M					
			±100	10K - 100M	10K - 100M	10K - 500M	10K - 1G	10K - 1G			
			±200					10K - 10G			10K - 50G
HVC2010	1	2000	±25	1M - 100M	1M - 100M						
			±50	100K - 100M	100K - 100M	100K - 500M					
			±100	10K - 100M	10K - 100M	10K - 500M	10K - 1G	10K - 1G			
			±200					10K - 10G			10K - 50G
HVC2512	2	3000	±25	1M - 100M	1M - 500M						
			±50	100K - 100M	100K - 500M	100K - 1G					
			±100	10K - 100M	10K - 500M	10K - 1G	10K - 10G			100K - 10G	
			±200							100K - 50G	
HVC3512	3	3500	±25	1M - 100M	1M - 500M						
			±50	100K - 100M	100K - 500M	100K - 1G					
			±100	10K - 100M	10K - 500M	10K - 1G	10K - 10G			100K - 10G	
			±200							100K - 50G	

Proper terminal isolation is required to achieve the voltage ratings for each given size.
(1) The continuous maximum voltage applied cannot exceed the maximum power rating and is ohmic value dependent.
Note: Other case sizes and tolerances are available.

Mechanical Specifications



Type / Code	L Body Length	W Body Width	H Body Height (Max.)	a Top Termination	b Bottom Termination	Unit
HVC0603	0.063 ± 0.01	0.031 ± 0.005	0.020	0.010 ± 0.005	0.012 ± 0.008	inches
	1.60 ± 0.25	0.79 ± 0.13	0.51	0.25 ± 0.13	0.30 ± 0.20	mm
HVC0805	0.079 ± 0.01	0.050 ± 0.005	0.025	0.010 ± 0.005	0.013 ± 0.008	inches
	2.01 ± 0.25	1.27 ± 0.13	0.64	0.25 ± 0.13	0.33 ± 0.20	mm
HVC1206	0.126 ± 0.01	0.063 ± 0.005	0.030	0.010 ± 0.005	0.020 ± 0.010	inches
	3.20 ± 0.25	1.60 ± 0.13	0.76	0.25 ± 0.13	0.51 ± 0.25	mm

Mechanical Specifications (cont.)

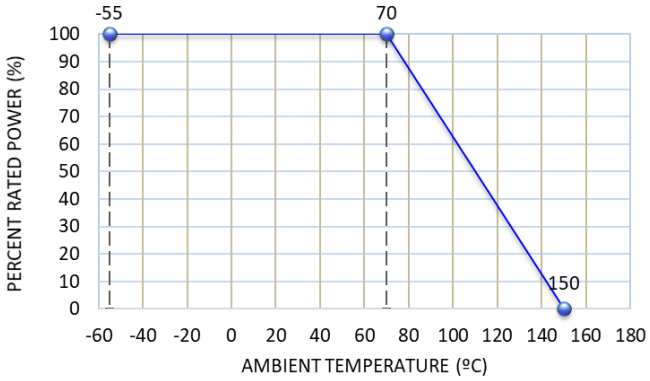
Type / Code	L Body Length	W Body Width	H Body Height (Max.)	a Top Termination	b Bottom Termination	Unit
HVC2010	0.200 ± 0.01 5.08 ± 0.25	0.100 ± 0.005 2.54 ± 0.13	0.030 0.76	0.018 ± 0.010 0.46 ± 0.25	0.020 ± 0.010 0.51 ± 0.25	inches mm
HVC2512	0.250 ± 0.01 6.35 ± 0.25	0.125 ± 0.005 3.18 ± 0.13	0.030 0.76	0.020 ± 0.010 0.51 ± 0.25	0.024 ± 0.010 0.61 ± 0.25	inches mm
HVC3512	0.350 ± 0.01 8.89 ± 0.25	0.125 ± 0.005 3.18 ± 0.13	0.030 0.76	0.020 ± 0.010 0.51 ± 0.25	0.024 ± 0.010 0.61 ± 0.25	inches mm

Performance Characteristics

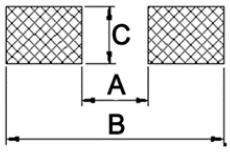
Test	Typical Performance
Short Time Overload	0.1%
Load Life	0.1%
Temperature Cycle	0.1%
Moisture Resistance	0.1%
Shock	0.05%
Vibration	0.05%
Dielectric Withstanding Voltage	0.05%
Resistance to Soldering Heat	0.05%
Parameter	**Typical**
TCR	measured from 25°C to 75°C
Pulse Capability	10X rated wattage Consult Stackpole for custom pulse applications
Resistance Value	Measured at 100V Consult Stackpole for custom test voltages

Operating temperature range is -55ºC to +150ºC

Power Derating Curve:



Recommended Pad Layouts



Type / Code	A	B	C	Unit
HVC0603	0.031 0.80	0.083 2.10	0.035 0.90	inches mm
HVC0805	0.047 1.20	0.118 3.00	0.051 1.30	inches mm

Recommended Pad Layouts (cont.)				
Type / Code	A	B	C	Unit
HVC1206	0.087 2.20	0.165 4.20	0.063 1.60	inches mm
HVC2010	0.138 3.50	0.240 6.10	0.110 2.80	inches mm
HVC2512	0.150 3.80	0.315 8.00	0.138 3.50	inches 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 Tin / RoHS Compliant Terminations

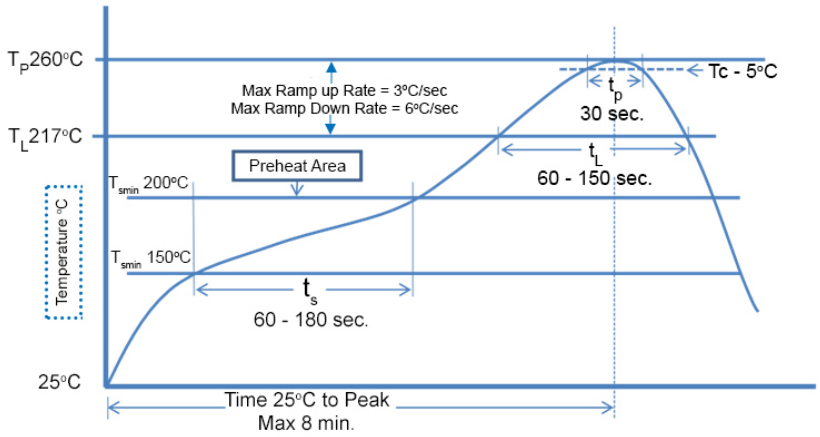
Soldering iron recommended temperatures: 330°C to 350°C with minimum duration.
Maximum number of reflow cycles: 3.

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 Lead Free Resistor Reflow Profile



Part Marking Instructions

1% Marking
The nominal resistance is marked on the surface of the overcoating with the use of 4 digit markings.
0201 and 0402 are not marked.

5% Marking
The nominal resistance is marked on the surface of the overcoating with the use of 3 digit markings.
0201 and 0402 are not marked.

For shared E24/E96 values, 1% tolerance product may be marked with three-digit marking instead of the standard four-digit marking for all other E96 values. All E24 values available in 1% tolerance are also marked with three-digit marking.

Marking Instructions for 0603 1% Chip Resistors (per EIA-J)

A two-digit number is assigned to each standard R-Value (E96) as shown in the chart below. This is followed by one alpha character which is used as a multiplier. Each letter represents a specific multiplier as follows:

Z = 0.01	A = 10	D = 10,000
Y = 0.1	B = 100	E = 100,000
X = 1	C = 1,000	F = 1,000,000

EXAMPLE:

Chip Marking	Explanation	Value
01B	01 means 10.0 and B = 100	10.0 x 100 = 1 Kohm
25C	25 means 17.8 and C = 1,000	17.8 x 1,000 = 17.8 Kohm
93D	93 means 90.9 and D = 10,000	90.9 x 10,000 = 909 Kohm

E96											
#	R-Value	#	R-Value	#	R-Value	#	R-Value	#	R-Value	#	R-Value
01	10.0	**17**	14.7	**33**	21.5	**49**	31.6	**65**	46.4	**81**	68.1
02	10.2	**18**	15.0	**34**	22.1	**50**	32.4	**66**	47.5	**82**	69.8
03	10.5	**19**	15.4	**35**	22.6	**51**	33.2	**67**	48.7	**83**	71.5
04	10.7	**20**	15.8	**36**	23.2	**52**	34.0	**68**	49.9	**84**	73.2
05	11.0	**21**	16.2	**37**	23.7	**53**	34.8	**69**	51.1	**85**	75.0
06	11.3	**22**	16.5	**38**	24.3	**54**	35.7	**70**	52.3	**86**	76.8
07	11.5	**23**	16.9	**39**	24.9	**55**	36.5	**71**	53.6	**87**	78.7
08	11.8	**24**	17.4	**40**	25.5	**56**	37.4	**72**	54.9	**88**	80.6
09	12.1	**25**	17.8	**41**	26.1	**57**	38.3	**73**	56.2	**89**	82.5
10	12.4	**26**	18.2	**42**	26.7	**58**	39.2	**74**	57.6	**90**	84.5
11	12.7	**27**	18.7	**43**	27.4	**59**	40.2	**75**	59.0	**91**	86.6
12	13.0	**28**	19.1	**44**	28.0	**60**	41.2	**76**	60.4	**92**	88.7
13	13.3	**29**	19.6	**45**	28.7	**61**	42.2	**77**	61.9	**93**	90.9
14	13.7	**30**	20.0	**46**	29.4	**62**	43.2	**78**	63.4	**94**	93.1
15	14.0	**31**	20.5	**47**	30.1	**63**	44.2	**79**	64.9	**95**	95.3
16	14.3	**32**	21.0	**48**	30.9	**64**	45.3	**80**	66.5	**96**	97.6

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)
HVC	High Voltage Thick Film Surface Mount Chip Resistor	SMD	YES(1)	100% Matte Sn ("T")	Always	Always

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.

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

H	V	C	B	2	5	1	2	F	K	C	1	0	M	0

Product Series

Code	Description
HVCB	Solderable wraparound (100% matte tin)
HVCG	Wire bondable (gold)
HVCS	Solderable single surface (Sn/Pb)
HVCZ	Solderable single surface (100% matte tin)

Size

Code	W
0603	0.06
0805	0.2
1206	0.33
2010	1
2512	2
3512	3

Tolerance

Code	Tol
B	0.1%
C	0.25%
D	0.5%
F	1%
G	2%
J	5%
K	10%
M	20%

Packaging

Code	Description	Size	Quantity
T	7" Reel - Paper Tape	0603, 0805	5000
		1206	4000
	7" Reel - Plastic Tape	2010	4000
		2512	2000
K	7" Reel - Paper Tape	0603, 0805, 1206	1000
	7" Reel - Plastic Tape	2010, 2512, 3512	1000
D	7" Reel - Paper Tape	0603, 0805, 1206	500
	7" Reel - Plastic Tape	2010, 2512, 3512	500
B	Bulk	All Sizes	1000

TCR

Code	ppm
E	25
C	50
D	100
L	200
M	300

Resistance Value

Four characters with the multiplier used as the decimal holder.

10 Kohm = 10K0
1 Mohm = 1M00
10 Gohm = 10G0