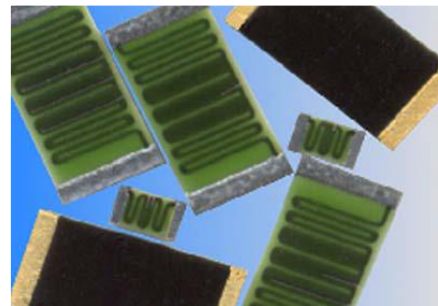


Features:

- Available with wire bondable terminations
- Utilizes fine film resistor deposition technology
- Superior pulse handling capabilities
- Low TCR to 25 ppm/°C
- Low VCR to 1 ppm/volt
- Very low noise
- Ultra-high stability
- Higher (up to 1TΩ) or lower resistance values may be available (contact Stackpole)
- RoHS compliant, REACH compliant, and halogen free



Electrical Specifications

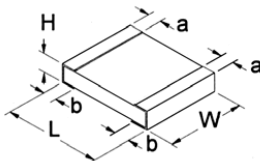
Type / Code	Power Rating (W) @ 70°C	Maximum Working Voltage (V) ⁽¹⁾	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance							
				0.1%	0.25%	0.5%	1%	2%	5%	10%	20%
HVC0603	0.06	400	±50	-	10K - 10M	10K - 100M	10K - 500M				
			±100			10K - 500M	10K - 1G		10K - 1G	10K - 10G	10K - 50G
			±200			10K - 1G		10K - 1G		10K - 10G	10K - 50G
HVC0805	0.2	600	±50	-	10K - 10M	10K - 500M		10K - 1G			
			±100			10K - 1G		10K - 1G		10K - 10G	10K - 50G
			±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	100K - 50G	
			±200	10K - 10G		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	100K - 50G	
			±200	10K - 10G		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.)

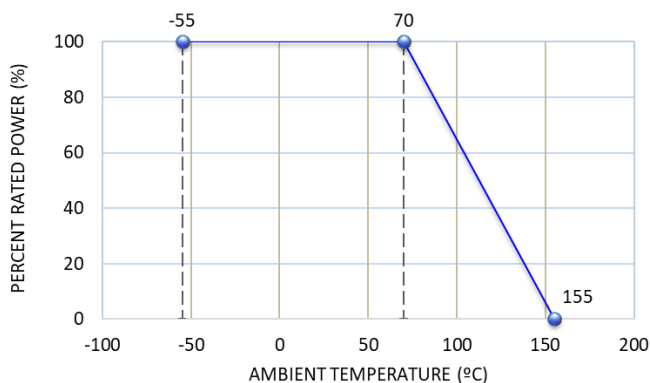
Type / Code	L Body Length	W Body Width	H Body Height (Max.)	a Top Termination	b Bottom Termination	Unit
HVC2010	0.200 ± 0.01	0.100 ± 0.005	0.030	0.018 ± 0.010	0.020 ± 0.010	inches
	5.08 ± 0.25	2.54 ± 0.13	0.76	0.46 ± 0.25	0.51 ± 0.25	mm
HVC2512	0.250 ± 0.01	0.125 ± 0.005	0.030	0.020 ± 0.010	0.024 ± 0.010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

Performance Characteristics

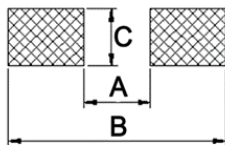
Test	Typical Performance
Short Time Overload	0.1%
Load Life	0.1%
Temperature Cycle	0.1%
Moisture Resistance	0.1%
Shock	0.05%
Vibration	0.05%
Dielectric Withstanding Voltage	0.05%
Resistance to Soldering Heat	0.05%
Parameter	Typical
TCR	measured from 25°C to 75°C
Pulse Capability	10X rated wattage Consult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

Operating temperature range is -55°C to +155°C

Power Derating Curve:



Recommended Pad Layouts



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

Recommended Pad Layouts (cont.)				
Type/Code	A	B	C	Unit
HVC1206	0.087	0.165	0.063	inches
	2.20	4.20	1.60	mm
HVC2010	0.138	0.240	0.110	inches
	3.50	6.10	2.80	mm
HVC2512	0.193	0.315	0.138	inches
	4.90	8.00	3.50	mm
HVC3512	0.290	0.415	0.138	inches
	7.37	10.54	3.50	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

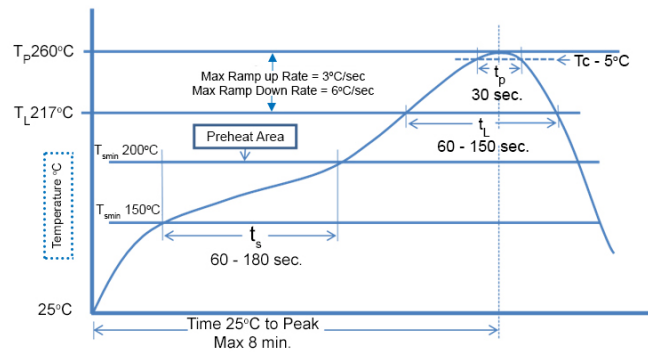
Soldering iron recommended temperatures: 330°C to 350°C with minimum duration.
Maximum number of reflow cycles: 3.

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

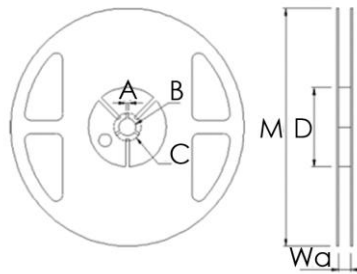
Temperature Diff. = Difference between final preheat stage and soldering stage.

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

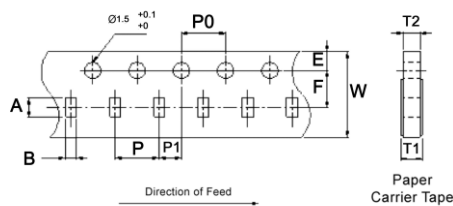


Reel Specifications



Reel Type	Wa	M	A	B	C	D	Unit
7" reel for 8 mm tape	0.354 ± 0.020	7.008 ± 0.079	0.079 ± 0.020	0.531 ± 0.020	0.827 ± 0.020	2.362 ± 0.039	inches
	9.00 ± 0.50	178.00 ± 2.00	2.00 ± 0.50	13.50 ± 0.50	21.00 ± 0.50	60.00 ± 1.00	mm

Paper Tape Specifications



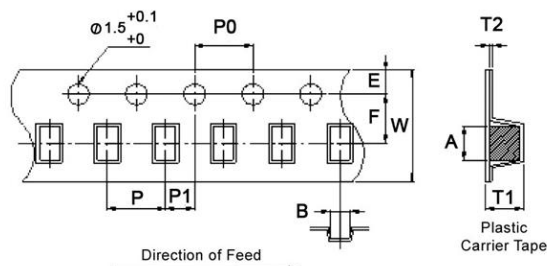
Type/Code	7" Reel Quantity ⁽¹⁾	Typical Full Reel Weight (g)	Tape Width	A	B	W	E	Unit
HVC0603	5000	118.3 ± 11.0	0.315 8.00	0.071 ± 0.008 1.80 ± 0.20	0.041 ± 0.008 1.05 ± 0.20	0.315 ± 0.008 8.00 ± 0.20	0.069 ± 0.004 1.75 ± 0.10	inches
HVC0805	5000	139.2 ± 13.0		0.093 ± 0.010 2.35 ± 0.25	0.063 ± 0.010 1.60 ± 0.25			inches
HVC1206	4000	151.4 ± 15.0		0.140 ± 0.010 3.55 ± 0.25	0.077 ± 0.010 1.95 ± 0.25			mm

(1) Quantities shown here are for T packaging only.

Paper Tape Specifications (cont.)

Type/Code	F	T1	T2	P	P0	P1	Unit
HVC0603	0.138 ± 0.002 3.50 ± 0.05	0.024 ± 0.008 0.60 ± 0.20	0.024 ± 0.004 0.60 ± 0.10	0.157 ± 0.004 4.00 ± 0.10	0.157 ± 0.004 4.00 ± 0.10	0.079 ± 0.002 2.00 ± 0.05	inches
HVC0805		0.030 ± 0.008 0.75 ± 0.20	0.030 ± 0.004 0.75 ± 0.10				mm
HVC1206		0.030 ± 0.008 0.75 ± 0.20	0.030 ± 0.004 0.75 ± 0.10				inches
HVC2010		0.030 ± 0.008 0.75 ± 0.20	0.030 ± 0.004 0.75 ± 0.10				mm

Plastic Tape Specifications



Type/Code	7" Reel Quantity ^(*)	Typical Full Reel Weight (g)	Tape Width	A	B	W	E	F	Unit
HVC2010	4000	183.1 ± 18.0	0.472 12.00	0.217 ± 0.012 5.50 ± 0.30	0.110 ± 0.008 2.80 ± 0.20	0.472 ± 0.008 12.00 ± 0.20	0.069 ± 0.004 1.75 ± 0.10	0.217 ± 0.002 5.50 ± 0.05	inches mm
HVC2512	2000	255.3 ± 25.0		0.264 ± 0.008 6.70 ± 0.20	0.134 ± 0.008 3.40 ± 0.20	0.472 ± 0.008 12.00 ± 0.20	0.069 ± 0.004 1.75 ± 0.10	0.217 ± 0.002 5.50 ± 0.05	inches mm
HVC3512	1000	255.3 ± 25.0		0.370 ± 0.004 9.40 ± 0.10	0.154 ± 0.004 3.90 ± 0.10	0.945 ± 0.012 24.00 ± 0.30	0.069 ± 0.004 1.75 ± 0.10	0.453 ± 0.004 11.50 ± 0.10	inches mm

(*) Quantities shown here are for T packaging only.

Type/Code	T1	T2	P	P0	P1	Unit
HVC2010	0.041 ± 0.008 1.05 ± 0.20	0.009 ± 0.006 0.23 ± 0.15	0.157 ± 0.004 4.00 ± 0.10	0.157 ± 0.004 4.00 ± 0.10	0.079 ± 0.002 2.00 ± 0.05	inches
HVC2512						mm
HVC3512						mm

Part Marking

Parts are unmarked.

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-l.

"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		Size		Tolerance		Packaging			TCR		Resistance Value			
Code	Description	Code	W	Code	Tol	Code	Description	Size	Quantity	Code	ppm	Four characters with the multiplier used as the decimal holder.		
HVCB	Solderable wraparound (100% matte tin)	0603	0.06	B	0.1%	T	7" Reel - Paper Tape	0603, 0805	5000	E	25	10 Kohm = 10K0 1 Mohm = 1M00 10 Gohm = 10G0		
HVCG	Wire bondable (gold)	0805	0.2	C	0.25%			1206	4000	C	50			
HVCS	Solderable single surface (Sn/Pb)	1206	0.33	D	0.5%	7" Reel - Plastic Tape	2010	4000	D	100				
		2010	1	F	1%		2512	2000	L	200				
		2512	2	G	2%			3512	1000	M	300			
HVCZ	Solderable single surface (100% matte tin)	3512	3	J	5%	K	7" Reel - Paper Tape	0603, 0805, 1206	1000					
				K	10%			7" Reel - Plastic Tape	2010, 2512	1000				
				M	20%	D	7" Reel - Paper Tape	0603, 0805, 1206	500					
								7" Reel - Plastic Tape	2010, 2512	500				

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