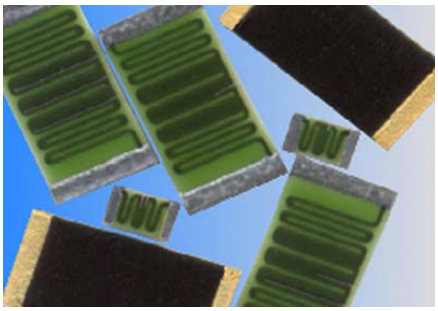
HVC Series

High Voltage Thick Film Chip Resistor

Stackpole Electronics, Inc.
Resistive Product Solutions

Features:

- Absolute voltage ratings up to 25,000 volts
- 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
- Standard HVC parts are unmarked
- RoHS compliant / lead-free



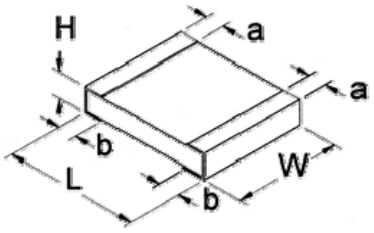
Electrical Specifications

Type	Package Type	Power Rating (3) (Watts) @ 70ºC	Maximum Working Voltage (1)	Absolute Maximum Voltage (2)	Resistane Temperature Coefficient	Ohmic Range (Ω) and Tolerance							
						0.1%	0.25%	0.5%	1%	2%	5%	10%	20%
HVC0603	0603	0.06W	400V	5KV	± 50 ppm/ºC			10K - 10M	10K - 100M	10K - 500M	10K - 500M	10K - 500M	10K - 500M
					± 100 ppm/ºC			10K - 10M	10K - 500M	10K - 1G	10K - 1G	10K - 10G	10K - 10G
					± 200 ppm/ºC			10K - 10M	10K - 500M	10K - 1G	10K - 1G	10K - 10G	10K - 50G
HVC0805	0805	0.2W	600V	10KV	± 50 ppm/ºC			10K - 10M	10K - 500M	10K - 500M	10K - 500M	10K - 500M	10K - 500M
					± 100 ppm/ºC			10K - 10M	10K - 1G	10K - 1G	10K - 1G	10K - 1G	10K - 1G
					± 200 ppm/ºC			10K - 10M	10K - 1G	10K - 1G	10K - 10G	10K - 10G	10K - 50G
HVC1206	1206	0.33	1200V	15KV	± 25 ppm/ºC	1M - 10M	1M - 100M	1M - 100M	1M - 100M	1M - 100M	1M - 100M	1M - 100M	1M - 100M
					± 50 ppm/ºC	100K - 10M	100K - 100M	100K - 500M	100K - 500M	100K - 500M	100K - 500M	100K - 500M	100K - 500M
					± 100 ppm/ºC	10K - 10M	10K - 100M	10K - 500M	10K - 1G	10K - 1G	10K - 1G	10K - 1G	10K - 1G
					± 200 ppm/ºC	10K - 10M	10K - 100M	10K - 500M	10K - 1G	10K - 10G	10K - 10G	10K - 10G	10K - 10G
HVC2010	2010	1W	1,700V	20KV	± 25 ppm/ºC	1M - 10M	1M - 100M	1M - 100M	1M - 100M	1M - 100M	1M - 100M	1M - 100M	1M - 100M
					± 50 ppm/ºC	100K - 10M	100K - 100M	100K - 500M	100K - 500M	100K - 500M	100K - 500M	100K - 500M	100K - 500M
					± 100 ppm/ºC	10K - 10M	10K - 100M	10K - 500M	10K - 1G	10K - 1G	10K - 1G	10K - 1G	10K - 1G
					± 200 ppm/ºC	10K - 10M	10K - 100M	10K - 500M	10K - 1G	10K - 10G	10K - 10G	10K - 10G	10K - 10G
HVC2512	2512	2W	2,500V	25KV	± 25 ppm/ºC	1M - 100M	1M - 500M	1M - 500M	1M - 500M	1M - 500M	1M - 500M	1M - 500M	1M - 500M
					± 50 ppm/ºC	100K - 100M	100K - 500M	100K - 1G	100K - 1G	100K - 1G	100K - 1G	100K - 1G	100K - 1G
					± 100 ppm/ºC	10K - 100M	10K - 500M	10K - 1G	10K - 10G	10K - 10G	10K - 10G	100K - 50G	100K - 50G
					± 200 ppm/ºC	10K - 100M	10K - 500M	10K - 1G	10K - 10G	10K - 10G	10K - 10G	100K - 50G	100K - 50G
HVC3512	3512	3W	3,500V	40KV	± 25 ppm/ºC	1M - 100M	1M - 500M	1M - 500M	1M - 500M	1M - 500M	1M - 500M	1M - 500M	1M - 500M
					± 50 ppm/ºC	100K - 100M	100K - 500M	100K - 1G	100K - 1G	100K - 1G	100K - 1G	100K - 1G	100K - 1G
					± 100 ppm/ºC	10K - 100M	10K - 500M	10K - 1G	10K - 10G	10K - 10G	10K - 10G	100K - 50G	100K - 50G
					± 200 ppm/ºC	10K - 100M	10K - 500M	10K - 1G	10K - 10G	10K - 10G	10K - 10G	100K - 50G	100K - 50G

(1) The continuous maximum voltage applied cannot exceed the maximum power rating and is ohmic value dependent.
(2) To achieve, the terminals must be properly isolated from each other with appropriate potting material.
(3) Contact factory for higher power ratings: 0805: 0.2W 1206:0.33W 2010: 1W 2512: 2W
Note: Other case sizes and tolerances are available.

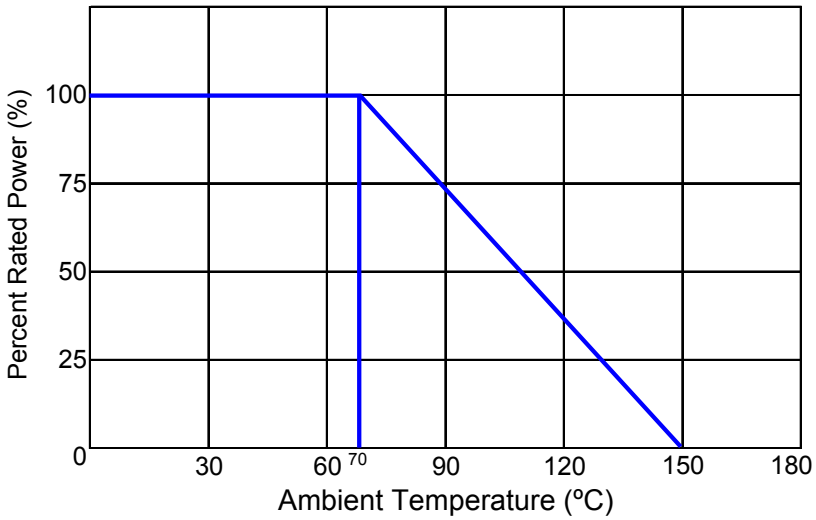
Datasheet Live

This specification may be changed at any time without prior notice
Please confirm technical specifications before you order and/or use.



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/-0.005 1.60 + 0.25/-0.13	0.031 ± 0.005 0.79 ± 0.13	0.02 0.51	0.010 ± 0.005 0.25 ± 0.13	0.012 ± 0.008 0.30 ± 0.20	inches mm
HVC0805	0.079 + 0.01/-0.005 2.01 + 0.25/-0.13	0.050 ± 0.005 1.27 ± 0.13	0.025 0.64	0.010 ± 0.005 0.25 ± 0.13	0.013 ± 0.008 0.33 ± 0.20	inches mm
HVC1206	0.126 + 0.01/-0.005 3.20 + 0.25/0.13	0.063 ± 0.005 1.60 ± 0.13	0.03 0.76	0.010 ± 0.005 0.25 ± 0.13	0.020 ± 0.010 0.51 ± 0.25	inches mm
HVC2010	0.2 + 0.01/-0.005 5.08 + 0.25/-0.13	0.100 ± 0.005 2.54 ± 0.13	0.03 0.76	0.018 ± 0.010 0.46 ± 0.25	0.020 ± 0.010 0.51 ± 0.25	inches mm
HVC2512	0.25 + 0.01/-0.005 6.35 + 0.25/-0.13	0.125 ± 0.005 3.18 ± 0.13	0.03 0.76	0.020 ± 0.010 0.51 ± 0.25	0.024 ± 0.010 0.61 ± 0.25	inches mm
HVC3512	0.35 + 0.01/-0.005 8.89 + 0.25/-0.13	0.125 ± 0.005 3.18 ± 0.13	0.03 0.76	0.020 ± 0.010 0.51 ± 0.25	0.024 ± 0.010 0.61 ± 0.25	inches mm

Power Derating Curve:



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Performance Characteristics

Test	Test Method	Acceptable Parameter
Load Life	MIL-STD-202G Method 108A Test Condition D	ΔR = 2%
Temperature Cycle (Thermal Shock)	MIL-STD-202G Method 107G Test Condition A	ΔR = 0.02%
Resistance to Soldering Heat	IPC/EIA J-STD-002A Paragraph 4.2.4	IPC/EIA J-STD-002A Paragraph 4.2.4.4
Solderability	IPC/EIA J-STD-002A Paragraph 4.2.2	IPC/EIA J-STD-002A Paragraph 4.2.2.4.2
Short Time Overload	MIL-PRF-55342H Pg. 32, Paragraph 4.8.6	MIL-PRF-55342H Pg 11, Paragraph 3.12

Operating Temperature Range: -55ºC to +150ºC

How to Order

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
H	V	C	B	2	5	1	2	F	K	C	1	0	M	0

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

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

Tolerance	
Code	Tol
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	5,000
	7" reel - plastic tape	1206, 2010	4,000
		2512	2,000
K	7" reel - paper tape	0603, 0805, 1206	1,000
	7" reel - plastic tape	2010, 2512, 3512	
D	7" reel - paper tape	0603, 0805, 1206	500
	7" reel - plastic tape	2010, 2512, 3512	
B	Bulk	All Sizes	1,000

TCR	
Code	ppm
E	25
C	50
D	100
L	200

Resistance Value
Four characters with the multiplier used as the decimal holder.
10 Kohm = 10K0 1 Mohm = 1M00 10 Gohm = 10G0

Legacy Part Number (before January 3, 2011):

SEI Type & Termination	Size	TCR	Nominal Resistance	Tolerance	Packaging
HVCB	1206	T2	100M	5%	R

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

TCR
T0 = 200ppm
T1 = 100ppm
T2 = 50ppm
T9 = 25ppm

Tol
± 0.5%
± 1%
± 2%
± 5%
± 10%
± 20%

SEI Types	Pkg Qty	Description	Code
0603, 0805	5,000	7" reel - paper tape	R
1206, 2010	4,000	7" reel - plastic tape	R
2512	2,000	7" reel - plastic tape	
0603, 0805, 1206	1,000	7" reel - paper tape	I
2010, 2512, 3512		7" reel - plastic tape	
0603, 0805, 1206	500	7" reel - paper tape	D
2010, 2512, 3512		7" reel - plastic tape	
All Types	1,000	Bulk	A

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