

# HVS Series

High Voltage / High Temperature  
Thick Film Chip Resistors



- Resistances from 100k to 10T Ohms
- Power Rating 0.125 to 1.5 Watt
- Resistance Tolerances to  $\pm 0.25\%$
- TCR's to  $\pm 25$  ppm/ $^{\circ}\text{C}$
- Non-Magnetic (contact PtAg)
- High Value Thick Film Resistance Element
- Sizes: 0805 / 1206 / 1210 / 2010 / 2512 / 4020
- Special HT Version to 300 $^{\circ}\text{C}$



## SPECIFICATIONS

Type		0805 <sup>4</sup>	1206	1210	2010	2512	4020
Power Rating - P <sub>70</sub> (W @ 70 $^{\circ}\text{C}$ )		0.125	0.25	0.35	0.5	1.0	1.5
Working Voltage (VAC)	Trimmed	200	600	800	1500	2000	4000
	Untrimmed ( $\geq 5\%$ )	400	1000	1200	2000	3000	6000
Resistance Range ( $\Omega$ )		Tolerances Available ( % ) Temperature Coefficients Available ( $\pm$ ppm/ $^{\circ}\text{C}$ ) Voltage Coefficients Available ( ppm / V )					
100k - 100M		0.5% to 10% 25 / 50 / 100 100ppm/V	0.5% to 10% 25 / 50 / 100 50ppm/V	0.5% to 10% 25 / 50 / 100 50ppm/V	0.5% to 10% 25 / 50 / 100 25ppm/V	0.5% to 10% 25 / 50 / 100 10ppm/V	0.25% to 10% 25 / 50 / 100 5ppm/V
>100M - 1G		2% to 20% 50 / 100 / 250 250ppm/V	2% to 20% 50 / 100 / 250 100ppm/V	1% to 20% 25 / 50 / 100 50ppm/V	1% to 20% 25 / 50 / 100 50ppm/V	1% to 20% 25 / 50 / 100 25ppm/V	0.5% to 20% 25 / 50 / 100 10ppm/V
>1G - 10G		5% to 20% 250 / 500 500ppm/V	5% to 20% 50 / 100 / 250 250ppm/V	2% to 20% 25 / 50 / 100 100ppm/V	2% to 20% 25 / 50 / 100 100ppm/V	2% to 20% 25 / 50 / 100 50ppm/V	1% to 20% 25 / 50 / 100 10ppm/V
>10G - 100G		10% to 30% 2000 2000ppm/V	10% to 30% 250 / 500 / 1000 1000ppm/V	5% to 30% 250 / 500 / 1000 500ppm/V	5% to 30% 100 / 250 / 500 500ppm/V	5% to 30% 100 / 250 / 500 100ppm/V	2% to 30% 100 / 250 / 500 50ppm/V
>100G - 1T		20% to 30% 3000 5000ppm/V	10% to 30% 1000 / 2000 2000ppm/V	5% to 30% 1000 / 2000 1000ppm/V	5% to 30% 500 / 1000 1000ppm/V	5% to 30% 250 / 500 500ppm/V	5% to 30% 250 / 500 250ppm/V
>1T - 10T		-	20% to 30% TCR / VCR on request	20% to 30% TCR / VCR on request	20% to 30% TCR / VCR on request	10% to 30% TCR / VCR on request	10% to 30% TCR / VCR on request

1) Solder pads must have sufficient heat conduction

2) TCR in ppm/K; +25 $^{\circ}\text{C}$  to +125 $^{\circ}\text{C}$ ; TCR below standard TCR (highest value) and values >100G; +25 $^{\circ}\text{C}$  to +85 $^{\circ}\text{C}$

3) VCR: typical values, all negative, not for all TCR values available

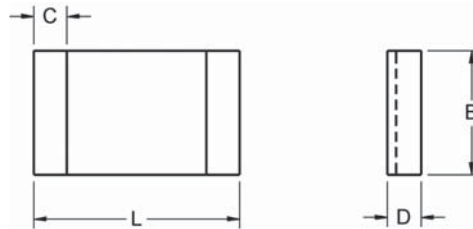
4) Best tolerance for High Temp version is 2%

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Specification	Value		
Temperature Range	-55°C to +155°C (Standard) -55°C to +300°C (HT Version, TCR valid +25°C to +125°C)		
Climactic Category	55 / 155 / 56		
Solderability	250°C / 3s (up to 6 month after shipment resp. at storage in Nitrogen)		
Max. Soldering Temperature	260°C / 10s		
Long Term Stability	Max ΔR		
	<1 GΩ	1 GΩ - 10 GΩ	>10 GΩ
Load Life 70°C / 1000h / P <sub>70</sub>	±0.25%	±0.5%	±1%
Storage 125°C / 1000h	±0.5%	±1%	±2%
Maximum Voltage / 1000h	±0.5%	±1%	±2%



Type	Dimensions			
	L	B	D	C
HVS 0805	0.080 +0.006 / -0.002 [ 2.0 +0.15 / -0.05 ]	0.050 +0.006 / -0.002 [ 1.25 +0.15 / -0.05 ]	0.016 +0.006 / -0.002 [ 0.4 +0.15 / -0.05 ]	0.012 +0.008 / -0.004 [ 0.3 +0.2 / -0.1 ]
HVS 1206	0.126 +0.006 / -0.002 [ 3.2 +0.15 / -0.05 ]	0.060 +0.008 / -0.002 [ 1.5 +0.2 / -0.05 ]	0.016 +0.006 / -0.002 [ 0.4 +0.15 / -0.05 ]	0.012 +0.008 / -0.004 [ 0.3 +0.2 / -0.1 ]
HVS 1210	0.126 +0.006 / -0.002 [ 3.2 +0.15 / -0.05 ]	0.098 +0.008 / -0.002 [ 2.5 +0.2 / -0.05 ]	0.020 +0.006 / -0.002 [ 0.5 +0.15 / -0.05 ]	0.032 ±0.008 [ 0.8 ±0.2 ]
HVS 2010	0.20 +0.008 / -0.002 [ 5.1 +0.2 / -0.05 ]	0.098 +0.008 / -0.002 [ 2.5 +0.2 / -0.05 ]	0.024 +0.006 / -0.002 [ 0.6 +0.15 / -0.05 ]	0.05 ±0.008 [ 1.2 ±0.2 ]
HVS 2512	0.250 +0.006 / -0.002 [ 6.3 +0.15 / -0.05 ]	0.138 +0.008 / -0.002 [ 3.5 +0.2 / -0.05 ]	0.024 +0.006 / -0.002 [ 0.6 +0.15 / -0.05 ]	0.035 ±0.008 [ 0.9 ±0.2 ]
HVS 4020	0.40 +0.006 / -0.002 [ 10.20 +0.15 / -0.05 ]	0.20 +0.008 / -0.002 [ 5.1 +0.2 / -0.05 ]	0.024 +0.006 / -0.002 [ 0.6 +0.15 / -0.05 ]	0.035 ±0.008 [ 0.9 ±0.2 ]

## Packaging:

Bulk or Tape & Reel per IEC 286-3 / EIA 481-1-A

Tape width 8mm / Reel Diameter 180 or 330mm  
Minimum quantity Bulk / 100 pieces per value  
Minimum quantity Tape & Reel / 500 pieces per value

## Ordering Information

Part Description: Part Type - Resistance - Tolerance - TCR

Example: HVS 2512 10G 10% 50ppm

(Note: if no TCR is specified, highest value will be supplied)

Power Derating Curve

