



Features

- Thick film
- High working voltage
- Wide resistance range
- RoHS compliant*

Applications

- Higher voltage applications
- Consumer electronics

CHV-ST Series – Thick Film High Voltage Chip Resistors

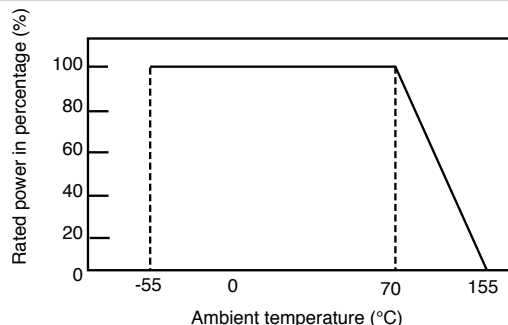
Electrical Characteristics

Specification		Model				
		CHV 0603 -ST	CHV 0805 -ST	CHV 1206 -ST	CHV 2010 -ST	CHV 2512 -ST
Power Rating @ 70 °C		0.1 W	0.125 W	0.25 W	0.5 W	1.0 W
Operating Temperature Range		-55 °C to +155 °C				
Maximum Working Voltage		200 V	400 V	800 V	2000 V	3000 V
Maximum Overload Voltage		400 V	800 V	1600 V	3000 V	4000 V
Resistance Range	1 % E-96 + E-24	100 kΩ ~ 10 MΩ				
	5 % E-24	100 kΩ ~ 22 MΩ		100 kΩ ~ 100 MΩ		
Temperature Coefficient	1 %	±100 PPM/°C				
	5 %	±200 PPM/°C				

Environmental Characteristics

Test	Conditions	Specification
Short Time Overload	5 times rated power or max overload voltage for 5 seconds	$\Delta R \leq \pm (2 \% + 0.1 \Omega)$
Solderability	+245 ±5 °C for 3 ± 0.5 seconds	Over 95 % coverage
Resistance to Solder Heat	+260 ±5 °C for 10 ±1 seconds	$\Delta R \leq \pm (1 \% + 0.1 \Omega)$
Load Life Humidity	+40 ±2 °C, 90~95 % 1.5 hours ON, 0.5 hours OFF for 1000 hours at rated power	$\Delta R \leq \pm (3 \% + 0.1 \Omega)$
Load Life	+70°C 1.5 hours ON, 0.5 hours OFF for 1000 hours at rated power	$\Delta R \leq \pm (3 \% + 0.1 \Omega)$
Temperature Cycle	-55 °C (30 minutes), +25 °C (2~3 minutes), +155 °C (30 minutes), +25 °C (2~3 minutes) for five cycles	$\Delta R \leq \pm (1 \% + 0.1 \Omega)$

Derating Curve



Additional Information

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How to Order

CHV 2512 - F X - 1000 E ST

Model _____
(CHV = Thick Film
High Voltage
Chip Resistor)

Size _____
• 0603 • 2010
• 0805 • 2512
• 1206

Resistance Tolerance _____
F = ±1 % (Use with "X"
TCR Code)
J = ±5 % (Use with "W"
TCR Code)

TCR _____
X = ±100 PPM/°C
W = ±200 PPM/°C

Resistance Value _____
1 % Tolerance: First three digits are
significant, fourth digit represents
the number of zeroes to follow

5 % Tolerance: First two digits are
significant, third digit represents
the number of zeroes to follow

Packaging _____
E = Paper tape:
• 5,000 pcs. on 7 " plastic reel
(CHV0603-ST, CHV0805-ST,
CHV1206-ST)
• 4,000 pcs. on 7 " plastic reel
(CHV2010-ST, CHV2512-ST)

Termination _____
ST = Tin-plated (RoHS compliant)



WARNING
Cancer and Reproductive Harm
www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

Specifications are subject to change without notice.

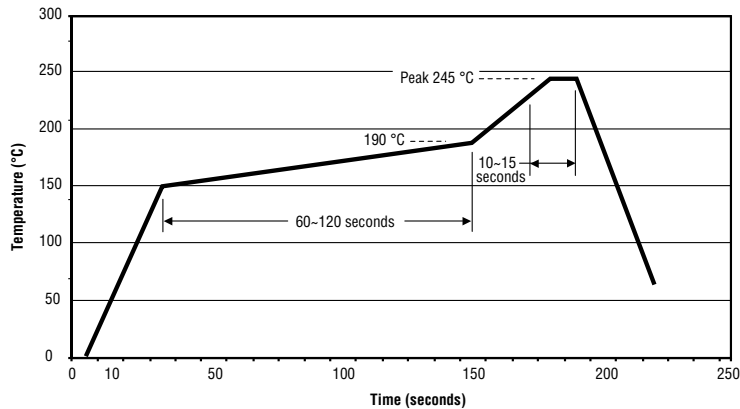
Users should verify actual device performance in their specific applications.

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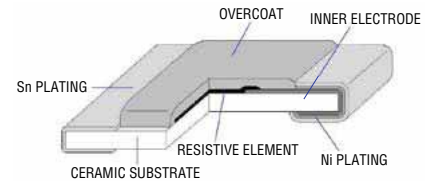
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Soldering Profile

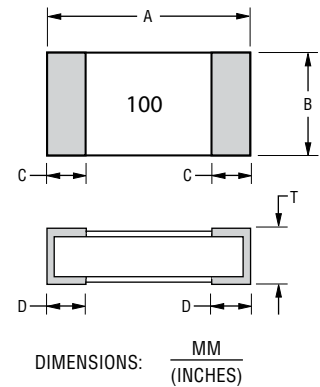


Construction



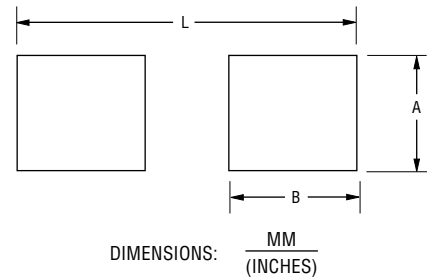
Product Dimensions

Dim.	Model				
	CHV0603-ST	CHV0805-ST	CHV1206-ST	CHV2010-ST	CHV2512-ST
A	$\frac{1.60 \pm 0.10}{(0.063 \pm 0.004)}$	$\frac{2.00 \pm 0.10}{(0.079 \pm 0.004)}$	$\frac{3.10 \pm 0.10}{(0.122 \pm 0.004)}$	$\frac{5.00 \pm 0.20}{(0.197 \pm 0.008)}$	$\frac{6.40 \pm 0.20}{(0.252 \pm 0.008)}$
B	$\frac{0.80 \pm 0.10}{(0.031 \pm 0.004)}$	$\frac{1.25 \pm 0.10}{(0.049 \pm 0.004)}$	$\frac{1.60 \pm 0.10}{(0.063 \pm 0.004)}$	$\frac{2.50 \pm 0.20}{(0.098 \pm 0.008)}$	$\frac{3.20 \pm 0.20}{(0.126 \pm 0.008)}$
C	$\frac{0.30 \pm 0.20}{(0.012 \pm 0.008)}$	$\frac{0.40 \pm 0.20}{(0.016 \pm 0.008)}$	$\frac{0.50 \pm 0.20}{(0.020 \pm 0.008)}$	$\frac{0.65 \pm 0.25}{(0.026 \pm 0.010)}$	$\frac{0.65 \pm 0.25}{(0.026 \pm 0.010)}$
D	$\frac{0.30 \pm 0.20}{(0.012 \pm 0.008)}$	$\frac{0.40 \pm 0.20}{(0.016 \pm 0.008)}$	$\frac{0.50 \pm 0.20}{(0.020 \pm 0.008)}$	$\frac{0.60 \pm 0.25}{(0.024 \pm 0.010)}$	$\frac{0.90 \pm 0.25}{(0.035 \pm 0.010)}$
T	$\frac{0.45 \pm 0.10}{(0.018 \pm 0.004)}$	$\frac{0.50 \pm 0.10}{(0.020 \pm 0.004)}$	$\frac{0.55 \pm 0.10}{(0.022 \pm 0.004)}$	$\frac{0.60 \pm 0.10}{(0.024 \pm 0.004)}$	$\frac{0.60 \pm 0.15}{(0.024 \pm 0.006)}$



Recommended Land Pattern

Dim.	Model				
	CHV0603-ST	CHV0805-ST	CHV1206-ST	CHV2010-ST	CHV2512-ST
A	$\frac{0.90}{(0.035)}$	$\frac{1.30}{(0.051)}$	$\frac{1.80}{(0.071)}$	$\frac{3.00}{(0.118)}$	$\frac{3.70}{(0.146)}$
B	$\frac{1.00}{(0.039)}$	$\frac{1.15}{(0.045)}$	$\frac{1.30}{(0.051)}$	$\frac{1.50}{(0.059)}$	$\frac{1.60}{(0.063)}$
L	$\frac{3.00}{(0.118)}$	$\frac{3.50}{(0.138)}$	$\frac{4.70}{(0.185)}$	$\frac{6.80}{(0.268)}$	$\frac{7.60}{(0.299)}$



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CHV-ST Series – Thick Film High Voltage Chip Resistors

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Resistor Markings

CHV0603-ST
CHV0805-ST
CHV1206-ST
CHV2010-ST
CHV2512-ST

CHV0805-ST
CHV1206-ST
CHV2010-ST
CHV2512-ST

CHV0603-ST

CHV0603-ST



3-Digit
E-24 $\pm 5\%$ Marking

30×10^1
Value = 300 ohms



4-Digit
E-96/E-24 Marking

154×10^2
Value = 15.4K ohms



3-Digit
E-24 $\pm 1\%$ Marking

222×10^2
Value = 2.2K ohms



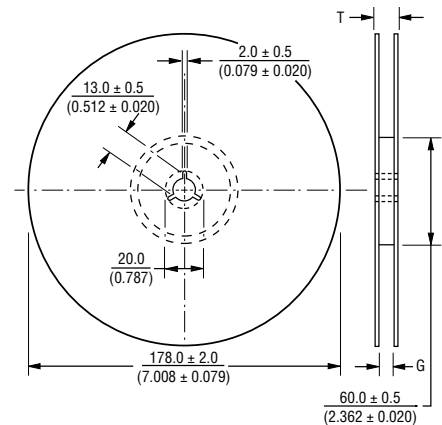
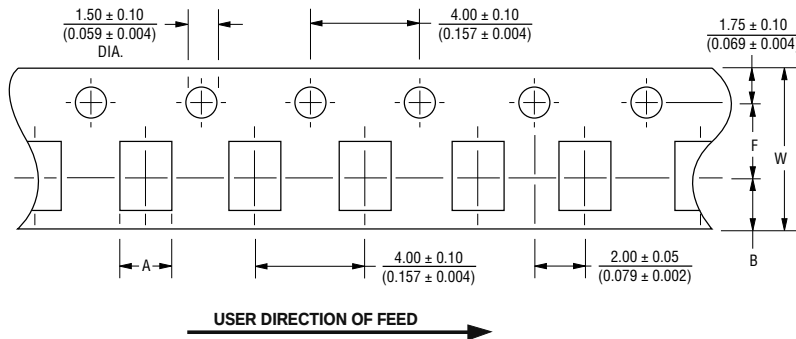
3-Digit
E-96 $\pm 1\%$ Marking

10×10^0
Value = 10 ohms

Marking Explanation

- The chip color is red to identify high voltage product.
- 1 % Tolerance: 4 digits, first three digits are significant, fourth digit represents the number of zeros to follow.
- 5 % Tolerance: 3 digits, first two digits are significant, third digit represents the number of zeros to follow.

Packaging Dimensions - Tape



DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

Dim.	Model				
	CHV0603-ST	CHV0805-ST	CHV1206-ST	CHV2010-ST	CHV2512-ST
A	1.10 ± 0.20 (0.043 $\pm$ 0.008)	1.60 ± 0.20 (0.063 $\pm$ 0.008)	2.00 ± 0.20 (0.079 $\pm$ 0.008)	2.80 ± 0.20 (0.110 $\pm$ 0.008)	3.50 ± 0.20 (0.138 $\pm$ 0.008)
B	1.90 ± 0.30 (0.075 $\pm$ 0.012)	2.40 ± 0.30 (0.094 $\pm$ 0.012)	3.57 ± 0.30 (0.141 $\pm$ 0.012)	5.50 ± 0.30 (0.217 $\pm$ 0.012)	6.70 ± 0.30 (0.264 $\pm$ 0.012)
W	8.00 ± 0.05 (0.315 $\pm$ 0.002)	8.00 ± 0.05 (0.315 $\pm$ 0.002)	8.00 ± 0.05 (0.315 $\pm$ 0.002)	12.00 ± 0.05 (0.472 $\pm$ 0.002)	12.00 ± 0.05 (0.472 $\pm$ 0.002)
F	3.50 ± 0.05 (0.138 $\pm$ 0.002)	3.50 ± 0.05 (0.138 $\pm$ 0.002)	3.50 ± 0.05 (0.138 $\pm$ 0.002)	5.50 ± 0.05 (0.217 $\pm$ 0.002)	5.50 ± 0.05 (0.217 $\pm$ 0.002)
G	10.0 ± 1.5 (0.394 $\pm$ 0.059)	10.0 ± 1.5 (0.394 $\pm$ 0.059)	10.0 ± 1.5 (0.394 $\pm$ 0.059)	13.8 ± 1.5 (0.543 $\pm$ 0.059)	13.8 ± 1.5 (0.543 $\pm$ 0.059)
T	14.9 (0.587)	14.9 (0.587)	14.9 (0.587)	16.7 (0.657)	16.7 (0.657)

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