



Features

- Thick film
- High voltage
- Wide resistance range
- RoHS compliant*
- UL/IEC 60950 & 60065 compatible
- UL 1676 listed

Applications

- High voltage applications
- Consumer electronics

CHV Series - Thick Film High Voltage Chip Resistors

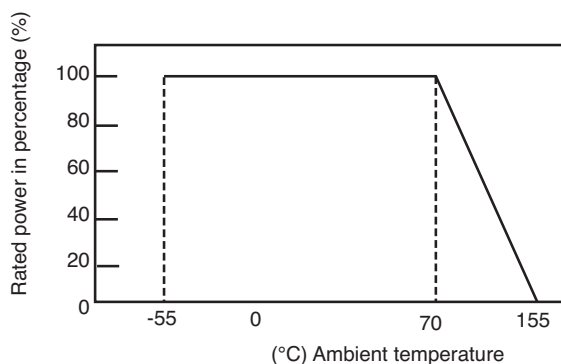
Electrical Characteristics

Specification		Model				
		CHV0603	CHV0805	CHV1206	CHV2010	CHV2512
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 Operating Voltage		200 V	400 V	800 V	2000 V	3000 V
Maximum Working 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	2 times rated voltage or max overload voltage for 5 seconds	$\Delta R \leq \pm (1 \% + 0.1 \Omega)$
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	$\Delta R \leq \pm (5 \% + 0.1 \Omega)$
Load Life	+70°C 1.5 hours ON, 0.5 hours OFF for 1000 hours at rated power	$\Delta R \leq \pm (5 \% + 0.1 \Omega)$
Temperature Cycle	-55 °C (30 minutes), +25 °C (2~3 minutes), +155 °C (30 minutes), +25 °C (2~3 minutes) for five cycles	$\Delta R \leq \pm (5 \% + 0.05 \Omega)$

Derating Curve



Agency Listing

Description	
UL1676	File Number: E466353

How to Order

CHV 2512 - F X - 1000 E LF

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, CHV0805, CHV1206)
• 4,000 pcs. on 7 " plastic reel
(CHV2010, CHV2512)

Termination
LF = Tin-plated (RoHS compliant)

* RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

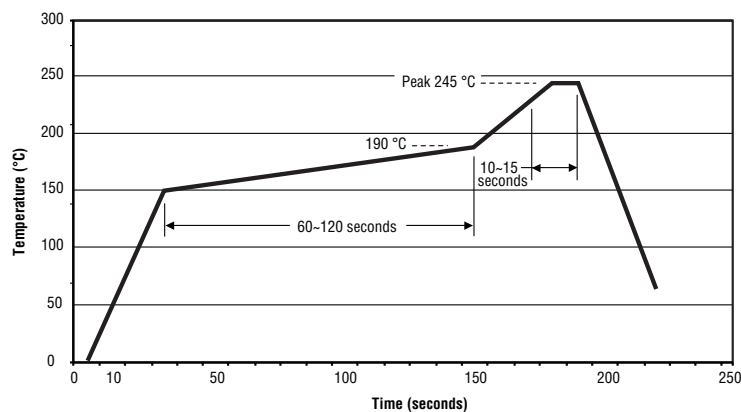
**Bourns® products have not been specifically designed and tested for FDA Class III applications and their use in such applications is neither recommended nor supported. Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

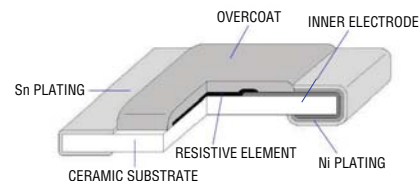
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Soldering Profile

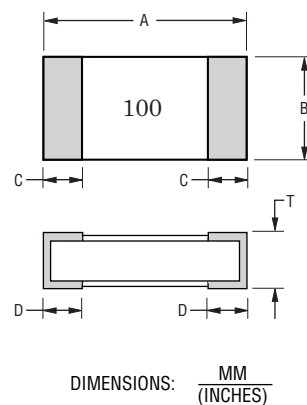


Construction



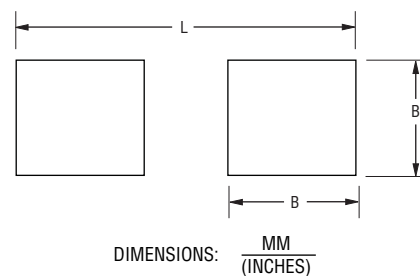
Product Dimensions

Dim.	Model				
	CHV0603	CHV0805	CHV1206	CHV2010	CHV2512
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	CHV0805	CHV1206	CHV2010	CHV2512
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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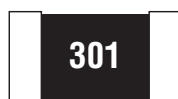
Resistor Markings

CHV0603
CHV0805
CHV1206
CHV2010
CHV2512

CHV0805
CHV1206
CHV2010
CHV2512

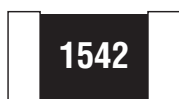
CHV0603

CHV0603



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



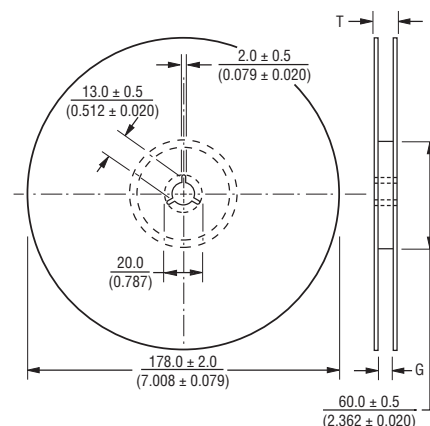
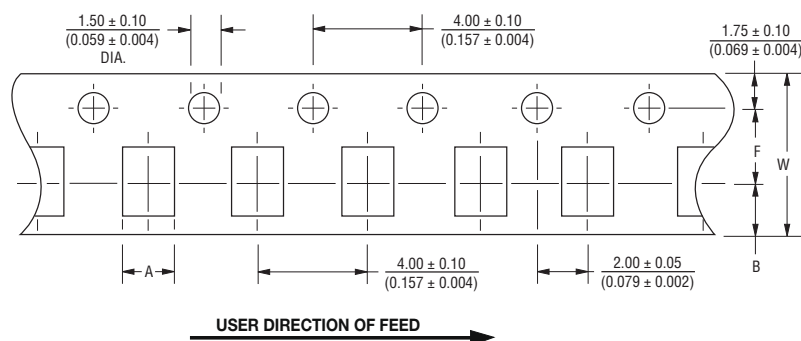
3-Digit
E-96 $\pm 1\%$ Marking

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

BOURNS®

Asia-Pacific:

Tel: +886-2 2562-4117
Fax: +886-2 2562-4116

EMEA:

Tel: +36 88 520 390
Fax: +36 88 520 211

The Americas:

Tel: +1-951 781-5500
Fax: +1-951 781-5700

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