

*RoHS COMPLIANT



BOURNS®

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

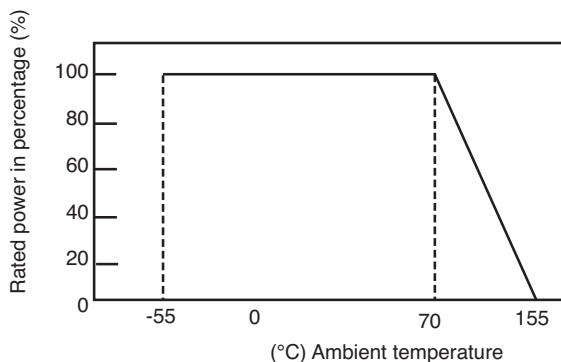
Electrical Characteristics

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 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	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.

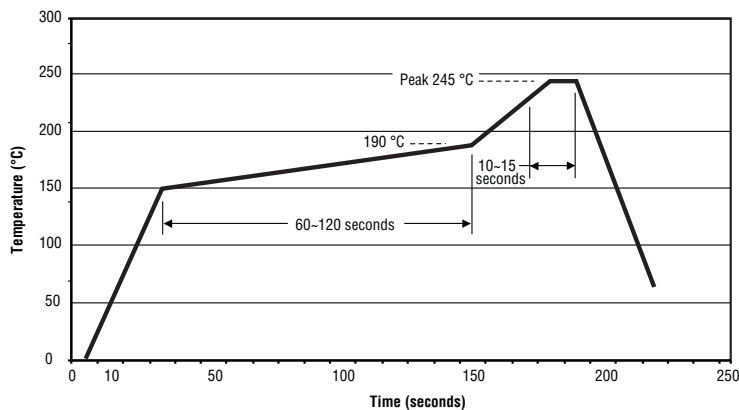
**Bourns® products have not been specifically designed and tested for FDA Class III applications and their use in such applications is neither recommended nor supported. Specifications are subject to change without notice.

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.

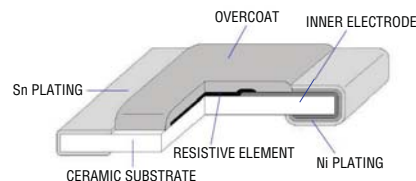
CHV Series - Thick Film High Voltage Chip Resistors

BOURNS®

Soldering Profile

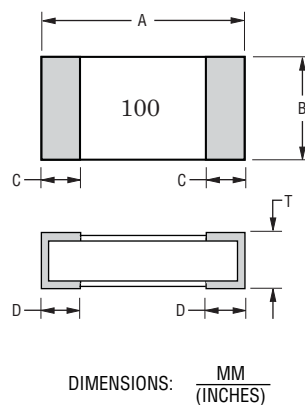


Construction



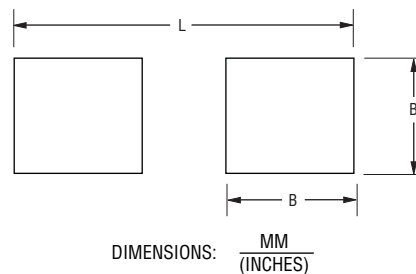
Product Dimensions

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	$\frac{3.00}{(0.118)}$	$\frac{3.50}{(0.138)}$	$\frac{4.70}{(0.185)}$	$\frac{6.80}{(0.268)}$	$\frac{7.60}{(0.299)}$



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.

CHV Series - Thick Film High Voltage Chip Resistors

BOURNS®

Resistor Markings

CHV0603
CHV0805
CHV1206
CHV2010
CHV2512

CHV0805
CHV1206
CHV2010
CHV2512

CHV0603

CHV0603



3-Digit
E-24 ±5 % Marking

4-Digit
E-96/E-24 Marking

3-Digit
E-24 ±1 % Marking

3-Digit
E-96 ±1 % Marking

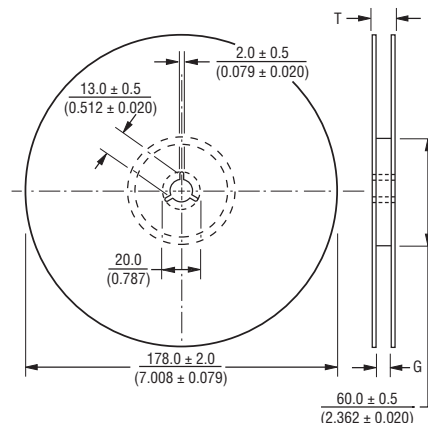
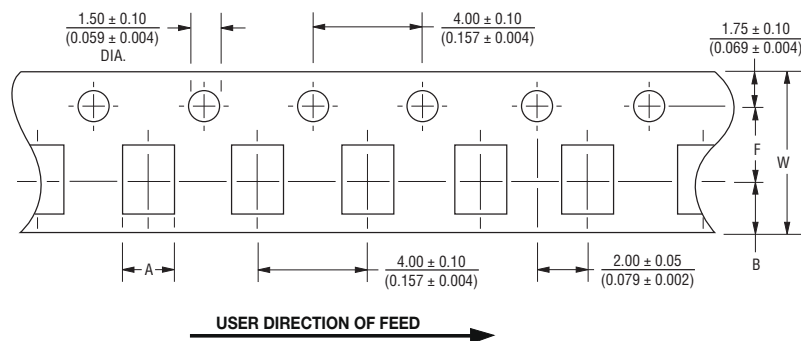
30×10^1
Value = 300 ohms

154×10^2
Value = 15.4K ohms

222×10^2
Value = 2.2K ohms

10×10^0
Value = 10 ohms

Packaging Dimensions - Tape



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	$\frac{14.9}{(0.587)}$	$\frac{14.9}{(0.587)}$	$\frac{14.9}{(0.587)}$	$\frac{16.7}{(0.657)}$	$\frac{16.7}{(0.657)}$

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

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.

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

www.bourns.com

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Bourns:

[CHV2010-JW-475ELF](#) [CHV2010-FX-2203ELF](#) [CHV2010-FX-1003ELF](#) [CHV2010-JW-104ELF](#) [CHV2010-JW-516ELF](#)
[CHV2010-FX-3304ELF](#) [CHV2010-FX-1005ELF](#) [CHV2512-FX-2203ELF](#) [CHV1206-FX-1004ELF](#) [CHV2512-FX-](#)
[2204ELF](#) [CHV2512-FX-1004ELF](#) [CHV0805-JW-334ELF](#) [CHV0805-FX-1804ELF](#) [CHV1206-JW-106ELF](#) [CHV1206-](#)
[FX-4993ELF](#) [CHV1206-JW-224ELF](#) [CHV2512-FX-1003ELF](#) [CHV0805-FX-2203ELF](#) [CHV2512-FX-1005ELF](#)
[CHV0805-FX-3603ELF](#) [CHV0805-FX-7503ELF](#) [CHV1206-FX-1003ELF](#) [CHV1206-JW-105ELF](#) [CHV2512-JW-106ELF](#)
[CHV1206-FX-3304ELF](#) [CHV1206-FX-1005ELF](#) [CHV0805-FX-4994ELF](#) [CHV2512-JW-107ELF](#) [CHV0805-JW-](#)
[335ELF](#) [CHV0603-JW-334ELF](#) [CHV0603-FX-9104ELF](#) [CHV1206-FW-1004ELF](#) [CHV0805-JW-226ELF](#) [CHV0805-FX-](#)
[1004ELF](#) [CHV0805-FX-1103ELF](#) [CHV2512-FX-1243ELF](#) [CHV0805-JW-106ELF](#) [CHV2010-FW-4703ELF](#) [CHV0805-](#)
[FX-1005ELF](#) [CHV1206-JW-154ELF](#) [CHV0603-FX-1103ELF](#) [CHV0805-JW-104ELF](#) [CHV1206-JW-104ELF](#) [CHV0603-](#)
[FX-3304ELF](#) [CHV0805-JW-186ELF](#) [CHV0603-JW-475ELF](#) [CHV0603-FX-9103ELF](#) [CHV2512-FX-1505ELF](#)
[CHV2010-FW-1004ELF](#) [CHV1206-JW-276ELF](#) [CHV1206-FW-1503ELF](#) [CHV2512-JW-104ELF](#) [CHV1206-FX-](#)
[1103ELF](#) [CHV0603-JW-105ELF](#) [CHV2010-FX-2005ELF](#) [CHV0805-JW-105ELF](#) [CHV0603-JW-106ELF](#) [CHV0805-FX-](#)
[1003ELF](#) [CHV0805-JW-474ELF](#) [CHV0603-FX-5104ELF](#) [CHV0603-JW-104ELF](#) [CHV0603-FX-2203ELF](#) [CHV2010-](#)
[JW-154ELF](#) [CHV2512-JW-516ELF](#) [CHV0805-FX-3903ELF](#) [CHV1206-FX-2403ELF](#) [CHV0805-FX-3904ELF](#)
[CHV2512-JW-105ELF](#) [CHV2512-JW-685ELF](#)