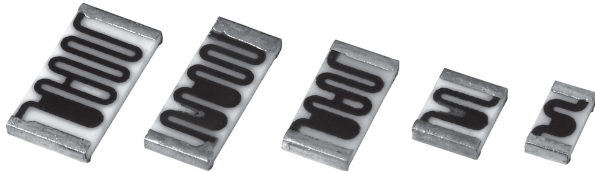


## Thick Film Chip Resistors, High Voltage



### FEATURES

- High voltage up to 3000 V
- Outstanding stability < 0.5 %
- Flow solderable
- Custom sizes available
- Automatic placement capability
- Available with either wraparound terminations or as a single termination flip chip
- Tape and reel packaging available
- Internationally standardized sizes
- Suitable for solderable, epoxy bondable, or wire bondable applications
- Termination: Gold, palladium silver, platinum gold, platinum silver, platinum palladium gold or solder-coated nickel barrier available
- Multiple styles, termination materials and configurations, allow wide design flexibility
- Non-magnetic terminations available
- Compliant to RoHS directive 2002/95/EC
- Halogen-free according to IEC 61249-2-21 definition



Available  
**RoHS\***  
COMPLIANT  
HALOGEN  
**FREE**

STANDARD ELECTRICAL SPECIFICATIONS					
GLOBAL MODEL	POWER RATING $P_{70\text{ }^\circ\text{C}}$ W	RESISTANCE RANGE (1) $\Omega$	TOLERANCE (2) $\pm \%$	TEMPERATURE COEFFICIENT (3) (- 55 °C to + 150 °C) $\pm \text{ppm}/^\circ\text{C}$	MAXIMUM WORKING VOLTAGE (4) V
CRHV1206	0.30	2M to 1G	1, 2, 5, 10, 20	100	1500
		1.1G to 8G	2, 5, 10, 20		
CRHV1210	0.45	4M to 1G	1, 2, 5, 10, 20	100	1750
		1.1G to 10G	2, 5, 10, 20		
CRHV2010	0.50	6M to 1G	1, 2, 5, 10, 20	100	2000
		1.1G to 10G	2, 5, 10, 20		
CRHV2510	0.60	11G to 35G	5, 10, 20	100	2500
		10M to 1G	1, 2, 5, 10, 20		
CRHV2510	0.60	1.1G to 10G	2, 5, 10, 20	100	2500
		11G to 40G	5, 10, 20		
CRHV2512	0.70	12M to 1G	1, 2, 5, 10, 20	100	3000
		1.1G to 10G	2, 5, 10, 20		
		11G to 50G	5, 10, 20		

**Notes**

- For non-standard sizes, lower values or higher power rating requirement, contact factory
- (1) Resistance values are calibrated at 100 V<sub>DC</sub>. Calibration at other voltages available upon request.
- (2) Contact factory for tighter tolerances
- (3) Reference only: Not for all values specified. Consult factory for your size and value
- (4) Continuous working voltage shall be  $\sqrt{P \times R}$  or maximum working voltage, whichever is less

GLOBAL PART NUMBER INFORMATION																		
New Global Part Numbering: CRHV1206AF100MFKFB (preferred part number format)																		
C	R	H	V	1	2	0	6	A	F	1	0	0	M	F	K	F	B	
GLOBAL MODEL	SIZE	TERM STYLE	TERM MATERIAL	RESISTANCE VALUE	TOLERANCE	TCR	SOLDER TERMINATION	PACKAGING										
CRHV	1206 1210 2010 2510 2512	A = 3-sided B = Top only C = 5-sided	A = Palladium silver B = Platinum gold C = Gold D = Platinum silver E = Platinum palladium gold F = Nickel barrier	M = M $\Omega$ G = G $\Omega$ 4M70 = 4.7 M $\Omega$ 10M0 = 10 M $\Omega$ 1G00 = 1 G $\Omega$	F = $\pm 1 \%$ G = $\pm 2 \%$ J = $\pm 5 \%$ K = $\pm 10 \%$ M = $\pm 20 \%$	K = 100 ppm N = 200 ppm W = 350 ppm P = 500 ppm	E = Sn100 F = Sn95/Ag5 N = No solder S = Sn62/Pb36/Ag2 T = Sn90/Pb10	B = Bulk T = Tape and reel W = Waffle										
Historical Part Numbering: CRHV1206AF1006F100e2 (will continue to be accepted)																		
CRHV	1206	A	F	1006	F	100	e2											
HISTORICAL MODEL	SIZE	TERM STYLE	TERM MATERIAL	RESISTANCE VALUE	TOLERANCE	TCR	SOLDER TERMINATION											

\* Pb containing terminations are not RoHS compliant, exemptions may apply

MECHANICAL SPECIFICATIONS	
Resistive Element	Ruthenium oxide
Encapsulation	Glass
Substrate	96 % alumina
Termination	Solder-coated nickel barrier standard. Gold, palladium silver, platinum gold, platinum silver, platinum palladium gold terminations available.
Solder Finish	Pure tin or tin/lead solder alloys standard. Hot solder dipped tin/silver or tin/lead/silver solder alloys available.

**ENVIRONMENTAL SPECIFICATIONS**

**Operating Temperature:** - 55 °C to + 150 °C

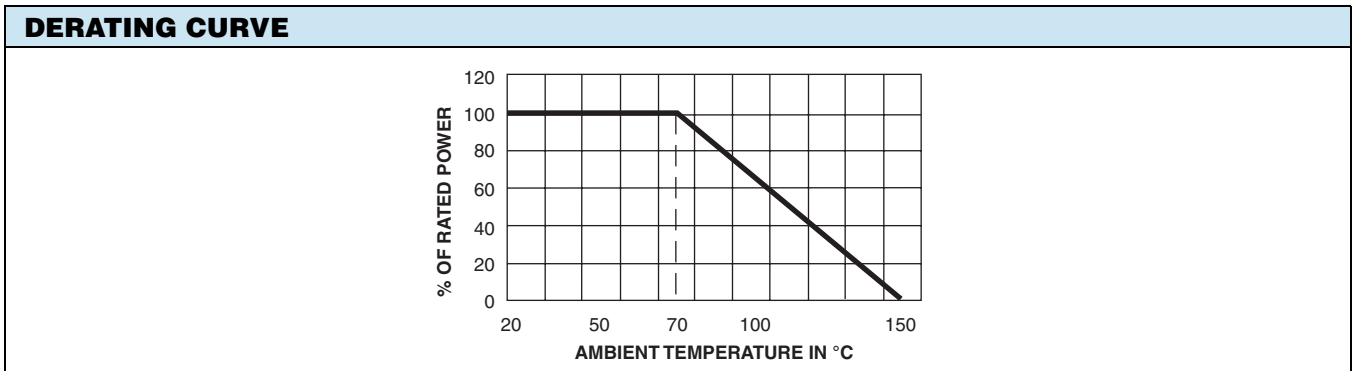
**Life:** Less than 0.5 % change when tested at full rated power

**Short Time Overload:** Less than 0.5 % ΔR

(Reference only: Not for all values specified. Consult factory for your size and value.)

VOLTAGE COEFFICIENT OF RESISTANCE CHART			
SIZE	VALUE (Ω)	VCR (ppm/V)	FURTHER INSTRUCTIONS
CRHV1206	2M to 199M	25	Values over 200M, consult factory
CRHV1210	4M to 200M	25	Values over 200M, consult factory
CRHV2010	6M to 99M	15	Values over 1G, consult factory
	100M to 1G	20	
CRHV2510	10M to 99M	10	Values over 1G, consult factory
	100M to 1G	15	
CRHV2512	12M to 999M	10	Values over 5G, consult factory
	1G to 5G	25	

DIMENSIONS in inches (millimeters)																											
<p><b>Termination Style A</b> (3-sided wraparound)</p>	<p><b>Termination Style B</b> (Top conductor only)</p>																										
<p><b>Termination Style C</b> (5-sided wraparound)</p>	<table border="1"> <thead> <tr> <th>MODEL</th> <th>LENGTH (L) ± 0.006 (0.152)</th> <th>WIDTH (W) ± 0.006 (0.152)</th> <th>THICKNESS (T) ± 0.002 (0.051)</th> </tr> </thead> <tbody> <tr> <td>CRHV1206</td> <td>0.125</td> <td>0.063</td> <td>0.025</td> </tr> <tr> <td>CRHV1210</td> <td>0.125</td> <td>0.100</td> <td>0.025</td> </tr> <tr> <td>CRHV2010</td> <td>0.200</td> <td>0.100</td> <td>0.025</td> </tr> <tr> <td>CRHV2510</td> <td>0.250</td> <td>0.100</td> <td>0.025</td> </tr> <tr> <td>CRHV2512</td> <td>0.250</td> <td>0.126</td> <td>0.025</td> </tr> </tbody> </table>	MODEL	LENGTH (L) ± 0.006 (0.152)	WIDTH (W) ± 0.006 (0.152)	THICKNESS (T) ± 0.002 (0.051)	CRHV1206	0.125	0.063	0.025	CRHV1210	0.125	0.100	0.025	CRHV2010	0.200	0.100	0.025	CRHV2510	0.250	0.100	0.025	CRHV2512	0.250	0.126	0.025		
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(Reference only: Not for all values specified. Consult factory for your size and value.)

TYPE	TERMINATION MATERIAL	TERMINATION STYLE	TERMINATION STYLE/ MATERIAL CODE	SOLDER TERMINATION CODE
Solderable	Nickel barrier	3-sided (wraparound)	AF	E, F, S, or T <sup>(3)</sup>
		Top only (flip chip)	BF	
Wire bondable/ Solderable	Platinum palladium gold	3-sided (wraparound)	AE	N, F or S <sup>(1)</sup>
		Top only (flip chip)	BE	
		5-sided (wraparound)	CE	
Wire bondable/ Epoxy bondable	Gold	3-sided (wraparound)	AC	N
		Top only (flip chip)	BC	
		5-sided (wraparound)	CC	
Epoxy bondable	Palladium silver <sup>(2)</sup>	3-sided (wraparound)	AA	N
		Top only (flip chip)	BA	
		5-sided (wraparound)	CA	
	Platinum gold	3-sided (wraparound)	AB	
		Top only (flip chip)	BB	
		5-sided (wraparound)	CB	
	Platinum silver	3-sided (wraparound)	AD	
		Top only (flip chip)	BD	
		5-sided (wraparound)	CD	

**Notes**

- <sup>(1)</sup> Use solder termination N for applications requiring wire bondable mounting, and solder terminations F or S for applications requiring solderable mounting.
- <sup>(2)</sup> While not recommended, palladium silver terminations could be used for solderable applications when using a solder alloy containing silver.
- <sup>(3)</sup> Standard solder plating for the nickel barrier parts are solder terminations E or T. Hot solder dipped terminations F or S are also available.



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