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Preliminary

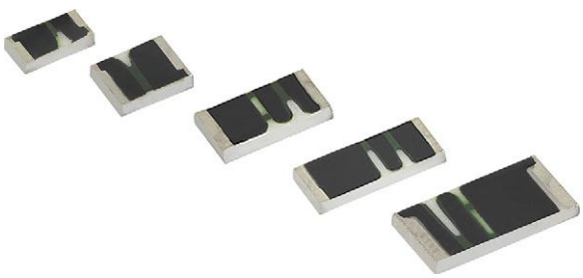
VISHAY

www.vishay.com

CRHA

Vishay Techno

Thick Film Chip Resistors, High Voltage



FEATURES

- AEC-Q200 qualified
- High voltage up to 3000 V
- Automatic placement capability
- Tape and reel packaging available
- Termination style: 3-sided wraparound termination
- Internationally standardized sizes
- Termination material: solder-coated nickel barrier
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT
HALOGEN FREE

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	CASE SIZE	POWER RATING $P_{70\,°C}$ W	MAXIMUM WORKING VOLTAGE (1) V	RESISTANCE RANGE (2) Ω	TOLERANCE ± %	TEMPERATURE COEFFICIENT (3) (-55 °C to +155 °C) ± ppm/°C
CRHA1206	1206	0.30	1500	2M to 100M	1, 2, 5, 10, 20	100
CRHA1210	1210	0.45	1750	4M to 100M	1, 2, 5, 10, 20	100
CRHA2010	2010	0.50	2000	6M to 100M	1, 2, 5, 10, 20	100
CRHA2510	2510	0.60	2500	10M to 500M	1, 2, 5, 10, 20	100
CRHA2512	2512	1.0	3000	10M to 500M	1, 2, 5, 10, 20	100

Notes

(1) Continuous working voltage shall be $\sqrt{P \times R}$ or maximum working voltage, whichever is less
(2) Resistance values are calibrated at 100 V_{DC}. Calibration at other voltages available upon request
(3) Reference only: not for all values specified. Consult factory for your size and value

GLOBAL PART NUMBER INFORMATION

Global Part Numbering: CRHA1206AF100MFKFB

C	R	H	A	1	2	0	6	A	F	1	0	0	M	F	K	F	B

GLOBAL MODEL	SIZE	TERMINAL STYLE	TERMINAL MATERIAL	RESISTANCE VALUE	TOLERANCE	TCR	SOLDER TERMINATION	PACKAGING
CRHA	**1206** **1210** **2010** **2510** **2512**	**A** = 3-sided	**F** = nickel barrier	**M** = MΩ **4M70** = 4.7 MΩ **10M0** = 10 MΩ	**F** = ± 1 % **G** = ± 2 % **J** = ± 5 % **K** = ± 10 % **M** = ± 20 %	**K** = 100 ppm **L** = 150 ppm **N** = 200 ppm **R** = 250 ppm **M** = 300 ppm **W** = 350 ppm **P** = 500 ppm	**E** = Sn100	**B** = bulk (250 pcs max.) **F** = T/R (full reel) **1** = T/R (1000 pcs) **5** = T/R (500 pcs) **T** = T/R (250 pcs min.)

Note

- For additional information on packaging, refer to the Surface Mount Resistor Packaging document (www.vishay.com/doc?31543)

For technical questions, contact: te1resistors@vishay.com
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Preliminary

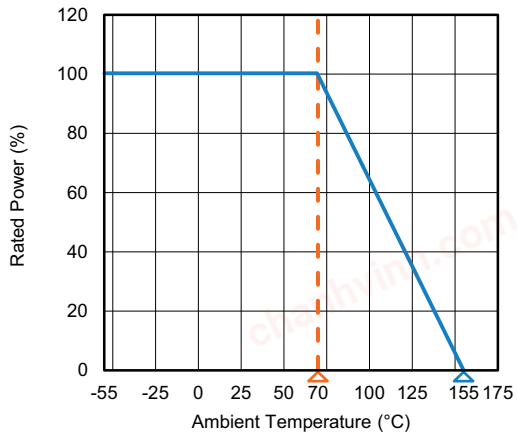
MECHANICAL SPECIFICATIONS

Resistive element	Ruthenium oxide
Encapsulation	Glass
Substrate	96 % alumina
Termination	Nickel barrier (standard)
Solder finish	Pure tin

ENVIRONMENTAL SPECIFICATIONS

Operating temperature	-55 °C to +155 °C
Life	Less than 1.0 % change when tested at full rated power
Short time overload	Less than 0.5 % ΔR

DERATING CURVE



Note

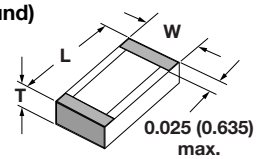
- Reference only: not for all values specified. Consult factory for your size and value

VOLTAGE COEFFICIENT OF RESISTANCE CHART

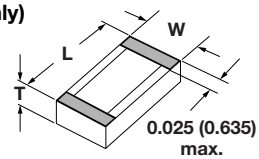
SIZE	VALUE (Ω)	VCR (ppm/V)
CRHA1206	2M to 100M	25
CRHA1210	4M to 100M	25
CRHA2010	6M to 100M	15
CRHA2510	10M to 99M	10
	100M to 500M	15
CRHA2512	10M to 500M	10

DIMENSIONS in inches (millimeters)

Termination Style A
(3-sided wraparound)



Termination Style B
(top conductor only)



MODEL	LENGTH (L) ± 0.006 (0.152)	WIDTH (W) ± 0.006 (0.152)	THICKNESS (T) ± 0.004 (0.102)
CRHA1206	0.125	0.063	0.025
CRHA1210	0.125	0.100	0.025
CRHA2010	0.200	0.100	0.025
CRHA2510	0.250	0.100	0.025
CRHA2512	0.250	0.126	0.025

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PERFORMANCE		
TEST	**CONDITIONS OF TEST**	**TEST RESULTS (TYPICAL TEST LOTS)**
Thermal shock	-55 °C to +150 °C, 1000 cycles, 15 min at each extreme	± (1.0 % + 0.05 Ω)
High temperature exposure	2000 h at +125 °C	± (1.0 % + 0.05 Ω)
Bias humidity	+85 °C, 85 % RH, 10 % bias, 1000 h	± (1.0 % + 0.05 Ω) (1)
Mechanical shock	100 *g*'s for 6 ms, 5 pulses	± (0.5 % + 0.05 Ω)
Vibration	Frequency varied 10 Hz to 2000 Hz in 1 min, 3 directions, 12 h	± (0.5 % + 0.05 Ω)
Load life	1000 h at rated power, +70 °C, 1.5 h "ON", 0.5 h "OFF"	± (1.0 % + 0.05 Ω)
Resistance to solder heat	+260 °C solder, 10 s to 12 s dwell, 25 mm/s emergence	± (1.0 % + 0.05 Ω)
Moisture resistance	MIL-STD-202, method 106, 0 % power, 7a and 7b not required	± (1.0 % + 0.05 Ω)

Note

(1) Due to the high values and small case size, it is recommended the 1206 case size parts be potted for electrical isolation from high humidity conditions

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