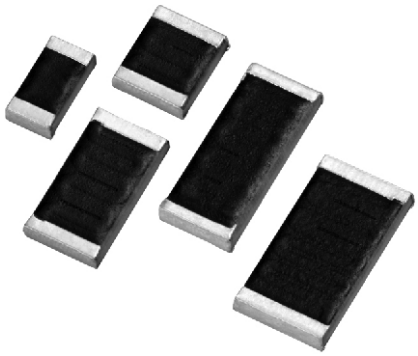
Thick Film Chip Resistors, High Voltage



FEATURES

- Voltages up to 3000 V
- Automatic placement capability
- Termination style: 3-sided wraparound termination or single termination flip chip available
- Tape and reel packaging available
- Suitable for solderable, epoxy bondable, or wire bondable applications
- Internationally standardized sizes, custom sizes available
- Termination material: solder-coated nickel barrier or solder coated non-magnetic terminations standard; gold, palladium silver, platinum gold, platinum silver or platinum palladium gold terminations available
- Multiple styles, termination materials and configurations, allow wide design flexibility
- Epoxy bondable or wire bondable non-magnetic terminations available
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb Available

RoHS* Available

HALOGEN FREE

LINKS TO ADDITIONAL RESOURCES

3D Models

Note

* This datasheet provides information about parts that are RoHS-compliant and / or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	CASE SIZE	POWER RATING $P_{70\,°C}$ W	MAX. WORKING VOLTAGE (2) V	RESISTANCE RANGE (1) Ω	TOLERANCE ± %	TEMPERATURE COEFFICIENT (3) ± ppm/°C
CRMV1206	1206	0.30	1000	150 to 15M	0.5, 1, 2, 5, 10, 20	100
CRMV1210	1210	0.35	1250	300 to 20M	0.5, 1, 2, 5, 10, 20	100
CRMV2010	2010	0.50	2000	500 to 40M	0.5, 1, 2, 5, 10, 20	100
CRMV2510	2510	0.80	2500	1K to 60M	0.5, 1, 2, 5, 10, 20	100
CRMV2512	2512	1.0	3000	1K to 75M	0.5, 1, 2, 5, 10, 20	100

Notes

- For non-standard sizes, lower values or higher power rating requirement, contact factory

(1) Resistance values calibrated at 10 V_{DC}. Calibration at other voltages available upon request

(2) Continuous working voltage shall be $\sqrt{P \times R}$ or Maximum Working Voltage, whichever is less

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

TECHNICAL SPECIFICATIONS

PARAMETER	UNIT	CRMV1206	CRMV1210	CRMV2010	CRMV2510	CRMV2512
Rated dissipation at 70 °C	W	0.30	0.35	0.50	0.80	1.0
Limiting element voltage	V≅	1000	1250	2000	2500	3000
Insulation resistance	Ω	≥ 10^{11}	≥ 10^{11}	≥ 10^{11}	≥ 10^{11}	≥ 10^{11}
Category temperature range	°C	-55 to +155	-55 to +155	-55 to +155	-55 to +155	-55 to +155
Weight/1000 (typical)	g	12.2	19.6	32.2	39.8	49.7

VOLTAGE COEFFICIENT OF RESISTANCE

MODEL	VALUE (Ω)	VCR (ppm/V)	FURTHER INSTRUCTIONS
CRMV1206	150 to 15M	Consult factory	Consult factory
CRMV1210	300 to 20M	Consult factory	Consult factory
CRMV2010	500 to 40M	Consult factory	Consult factory
CRMV2510	1K to 60M	Consult factory	Consult factory
CRMV2512	1K to 75M	Consult factory	Consult factory

For technical questions, contact: te1resistors@vishay.com

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GLOBAL PART NUMBER INFORMATION

Global Part Numbering: CRMV1210AF1K00FLET (preferred part number format)

C	R	M	V	1	2	1	0	A	F	1	K	0	0	F	L	E	T

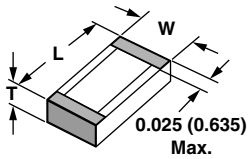
GLOBAL MODEL	SIZE	TERMINAL STYLE	TERMINAL MATERIAL	RESISTANCE VALUE	TOLERANCE	TCR	SOLDER TERMINATION	PACKAGING
CRMV	**1206** **1210** **2010** **2510** **2512**	**A** = 3-sided **B** = top only	**F** = nickel barrier **G** = non-magnetic **A** = palladium silver **B** = palladium gold **C** = gold **D** = platinum silver **E** = platinum palladium gold	**R** = Ω **K** = kΩ **M** = MΩ **110R** = 110 Ω **49K9** = 49.9 kΩ **10M0** = 10 MΩ	**D** = ± 0.5 % **F** = ± 1 % **G** = ± 2 % **J** = ± 5 % **K** = ± 10 % **M** = ± 20 %	**K** = 100 ppm **L** = 150 ppm	**E** = Sn100 **N** = no solder **T** = Sn90 / Pb10	**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.) **W** = waffle tray

Note

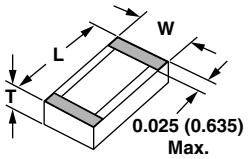
- For additional information on packaging, refer to the Surface Mount Resistor Packaging document (www.vishay.com/doc?31543)

DIMENSIONS in inches (millimeters)

TERMINATION STYLE A (3-SIDED WRAPAROUND)



TERMINATION STYLE B (TOP CONDUCTOR ONLY)



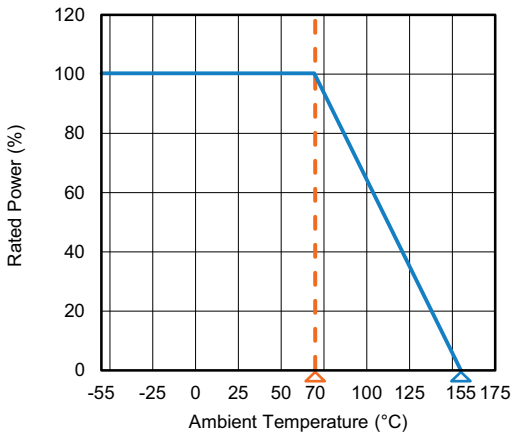
MODEL	LENGTH (L)	WIDTH (W)	THICKNESS (T)
CRMV1206	0.125 ± 0.006 (3.18 ± 0.15)	0.063 ± 0.006 (1.60 ± 0.15)	0.025 ± 0.004 (0.64 ± 0.10)
CRMV1210	0.125 ± 0.006 (3.18 ± 0.15)	0.100 ± 0.006 (2.54 ± 0.15)	0.025 ± 0.004 (0.64 ± 0.10)
CRMV2010	0.200 ± 0.006 (5.08 ± 0.15)	0.100 ± 0.006 (2.54 ± 0.15)	0.025 ± 0.004 (0.64 ± 0.10)
CRMV2510	0.250 ± 0.006 (6.35 ± 0.15)	0.100 ± 0.006 (2.54 ± 0.15)	0.025 ± 0.004 (0.64 ± 0.10)
CRMV2512	0.250 ± 0.006 (6.35 ± 0.15)	0.126 ± 0.006 (3.20 ± 0.15)	0.025 ± 0.004 (0.64 ± 0.10)

TYPE	TERMINATION MATERIAL	TERMINATION STYLE	TERMINATION STYLE / MATERIAL CODE	SOLDER TERMINATION CODE
Solderable	Nickel barrier	3-sided (wraparound)	AF	E or T
		Top only (flip chip)	BF	
Solderable	Non-magnetic	3-sided (wraparound)	AG	E or T
		Top only (flip chip)	BG	
Epoxy bondable / solderable	Platinum palladium gold	Top only (flip chip)	BE	N
Wire bondable / epoxy bondable	Gold	Top only (flip chip)	BC	N
Epoxy bondable	Palladium silver	Top only (flip chip)	BA	N
	Platinum gold		BB	
	Platinum silver		BD	

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DERATING CURVE



MATERIAL SPECIFICATIONS

Resistive element	Ruthenium oxide
Encapsulation	Epoxy
Substrate	96 % alumina
Termination	Solder-coated nickel barrier or solder coated non-magnetic terminations standard. Gold, platinum silver, platinum palladium gold terminations available.
Solder finish	Pure tin or tin / lead solder alloys standard.

PERFORMANCE

TEST	CONDITIONS OF TEST	TEST RESULTS (TYPICAL TEST LOTS)
Life	MIL-STD-202, method 108 1000 h rated power at +70 °C	≤ ± 0.50 %
Short time overload	MIL-PRF-55342, paragraph 4.8.6	≤ ± 0.02 %
Thermal shock	MIL-STD-202, method 107 -55 °C to +150 °C	≤ ± 0.50 %
Low temperature operation	MIL-PRF-55342, paragraph 4.8.5	≤ ± 0.02 %
Resistance to bonding exposure	MIL-STD-202, methods 210	≤ ± 0.05 %
Moisture resistance	MIL-PRF-55342, paragraph 4.8.9	≤ ± 0.06 %
Solder mounting integrity	MIL-PRF-55342, paragraph 4.8.13 2 kg for 30 s	No evidence of mechanical damage
Solderability	MIL-STD-202, method 208	95 % coverage

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