Thick Film Chip Resistors, Industrial

MECHANICAL SPECIFICATIONS	
Resistive element	Ruthenium oxide
Encapsulation	Epoxy
Substrate	96 % alumina
Termination	Solder-coated nickel barrier
Solder finish	Pure tin or tin/lead solder alloy

FEATURES

Pb Available

e3

RoHS* COMPLIANT

HALOGEN FREE

- Same materials and construction as MIL-PRF-55342 chip resistors
- Construction is sulfur impervious against a high sulfur environment (ASTM B 809-95 test method)
- Termination: Tin/lead wraparound termination over nickel barrier. Also available with lead (Pb)-free wraparound terminations
- Capability to develop specific reliability programs designed to customer requirements
- Size, value, packaging and materials can be customized for special customer requirements
- Operating temperature range: - 55 °C to + 150 °C
- For zero ohm jumpers, see Vishay Dale's RCWP Jumper datasheet (www.vishay.com/doc?31017)
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Note

* Lead (Pb)-containing terminations are not RoHS-compliant. Exemptions may apply.

STANDARD ELECTRICAL SPECIFICATIONS

GLOBAL MODEL	HISTORICAL MODEL	CASE SIZE	POWER RATING (1) $P_{70\,°C}$ W	MAXIMUM WORKING VOLTAGE (2) V	RESISTANCE RANGE Ω	TOLERANCE ± %	TEMPERATURE COEFFICIENT ± ppm/°C
RCWP0201	RCWP-0201	0201	0.05	30	10 to 46	5, 10	300
					47 to 1M	1, 2, 5, 10	100, 300
RCWP0502	RCWP-0502	0502	0.05	40	1 to 9.1	2, 5, 10	300
					10 to 22M	1, 2, 5, 10	100, 300
RCWP0302	RCWP-0302	0302	0.04	15	1 to 9.1	2, 5, 10	300
					10 to 22M	1, 2, 5, 10	100, 300
RCWP0402	RCWP-0402	0402	0.05	30	1 to 9.1	2, 5, 10	300
					10 to 22M	1, 2, 5, 10	100, 300
RCWP0603	RCWP-0603	0603	0.10	50	1 to 5.6	2, 5, 10	300
					5.62 to 22M	1, 2, 5, 10	100, 300
RCWP0540	RCWP-540	0504	0.08	40	1 to 9.1	2, 5, 10	300
					10 to 22M	1, 2, 5, 10	100, 300
RCWP0550	RCWP-550	0505	0.125	50	1 to 9.1	2, 5, 10	300
					10 to 22M	1, 2, 5, 10	100, 300
RCWP0575	RCWP-575	0705 (3)	0.15	70	1 to 5.6	2, 5, 10	300
					5.62 to 22M	1, 2, 5, 10	100, 300
RCWP5100	RCWP-5100	1005	0.20	100	1 to 5.6	2, 5, 10	300
					5.62 to 22M	1, 2, 5, 10	100, 300
RCWP1206	RCWP-1206	1206	0.25	100	1 to 5.6	2, 5, 10	300
					5.62 to 22M	1, 2, 5, 10	100, 300
RCWP5150	RCWP-5150	1505	0.35	125	1 to 5.6	2, 5, 10	300
					5.62 to 22M	1, 2, 5, 10	100, 300
RCWP1100	RCWP-1100	1010	0.50	100	1 to 5.6	2, 5, 10	300
					5.62 to 22M	1, 2, 5, 10	100, 300
RCWP7225	RCWP-7225	2208	0.60	200	1 to 5.6	2, 5, 10	300
					5.62 to 22M	1, 2, 5, 10	100, 300
RCWP2010	RCWP-2010	2010	0.80	200	1 to 5.6	2, 5, 10	300
					5.62 to 22M	1, 2, 5, 10	100, 300
RCWP2512	RCWP-2512	2512	1.0	200	1 to 5.6	2, 5, 10	300
					5.62 to 22M	1, 2, 5, 10	100, 300

Notes

- Consult factory for extended resistance range.

(1) Power rating depends on the maximum temperature at the solder point, the component placement density and the substrate material.

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

(3) MIL case size 0705 and EIA case size 0805 are dimensionally the same.

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: RCWP510010K0GMWB (preferred part numbering format)

R	C	W	P	5	1	0	0	1	0	K	0	G	M	W	B		

GLOBAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	TEMPERATURE COEFFICIENT	PACKAGING CODE [1]	SPECIAL
(See Standard Electrical Specifications table)	R = Ω K = kΩ M = MΩ **10R0** = 10 Ω **1K30** = 1.3 kΩ **1M00** = 1.0 MΩ **0000** = 0 Ω Jumper	**F** = ± 1 % **G** = ± 2 % **J** = ± 5 % **K** = ± 10 % **Z** = 0 Ω Jumper	**K** = 100 ppm **M** = 300 ppm **S** = Special, 0 Ω Jumper	**TP** = Tin/lead, T/R (full), plastic tape **S3** = Tin/lead, T/R (1000 pieces), plastic tape **WB** = Tin/lead, waffle tray **S2** = Tin/lead, T/R (500 pieces), plastic tape **S6** = Tin/lead, T/R (300 pieces), plastic tape **UA** = Tin/lead, T/R (full), paper tape **UD** = Tin/lead, T/R (1000 pieces), paper tape **UC** = Tin/lead, T/R (500 pieces), paper tape **UB** = Tin/lead, T/R (300 pieces), paper tape **EA** = Lead (Pb)-free, T/R (full) **EB** = Lead (Pb)-free, T/R (1000 pieces) **ET** = Lead (Pb)-free, waffle tray **EC** = Lead (Pb)-free, T/R (500 pieces) **ED** = Lead (Pb)-free, T/R (300 pieces)	Blank = Standard (Dash number) (Up to 2 digits) From **1 to 99** as applicable 99 = 0 Ω Jumper

Historical Part Number: RCWP-5100103G (will continue to be accepted)

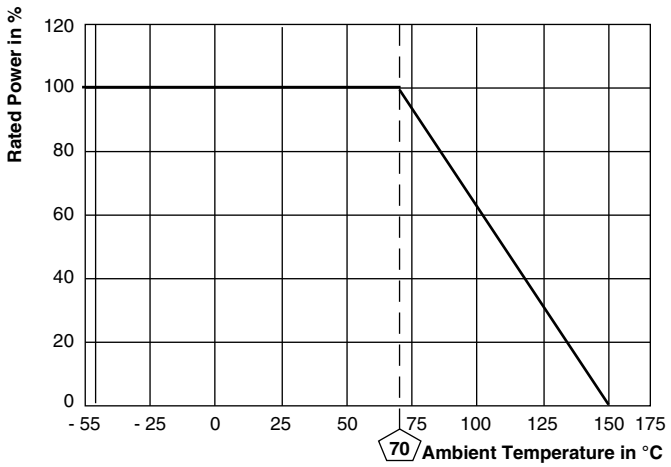
RCWP-5100	103	G	T03
HISTORICAL MODEL	RESISTANCE VALUE	TOLERANCE CODE	PACKAGING CODE

Notes

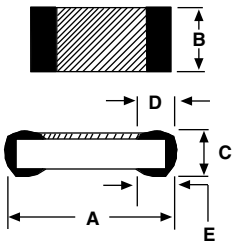
- For additional information on packaging, refer to the Surface Mount Resistor Packaging document (www.vishay.com/doc?31543).

(1) Tape and reel packaging with plastic tape standard for all case sizes except 0201. For the 0201 case size, the product is only offered in tape and reel packaging with paper tape.

DERATING CURVE



DIMENSIONS in inches (millimeters)



GLOBAL MODEL	A (LENGTH)	B (WIDTH)	C (HEIGHT)	D (TOP TERM)	E (BOTTOM TERM)
RCWP0201	0.024 ± 0.002 (0.61 ± 0.05)	0.012 ± 0.002 (0.30 ± 0.05)	0.009 ± 0.002 (0.23 ± 0.05)	0.006 ± 0.003 (0.15 ± 0.08)	0.006 + 0.002 - 0.004 (0.15 + 0.05 - 0.10)
RCWP0302	0.034 ± 0.004 (0.86 ± 0.10)	0.021 ± 0.003 (0.53 ± 0.08)	0.013 ± 0.003 (0.33 ± 0.08)	0.007 ± 0.005 (0.18 ± 0.13)	0.008 ± 0.005 (0.20 ± 0.13)
RCWP0402	0.039 ± 0.003 (0.99 ± 0.08)	0.020 ± 0.003 (0.51 ± 0.08)	0.013 ± 0.003 (0.33 ± 0.08)	0.010 ± 0.005 (0.25 ± 0.13)	0.010 ± 0.005 (0.25 ± 0.13)
RCWP0502	0.055 ± 0.005 (1.40 ± 0.13)	0.023 ± 0.003 (0.58 ± 0.08)	0.015 ± 0.003 (0.38 ± 0.08)	0.010 ± 0.005 (0.25 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)
RCWP0540	0.055 ± 0.005 (1.40 ± 0.13)	0.040 ± 0.005 (1.02 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.010 ± 0.005 (0.25 ± 0.13)	0.010 ± 0.005 (0.25 ± 0.13)
RCWP0550	0.055 ± 0.005 (1.40 ± 0.13)	0.050 ± 0.005 (1.27 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.010 ± 0.005 (0.25 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)
RCWP0575	0.080 ± 0.005 (2.03 ± 0.13)	0.050 ± 0.005 (1.27 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.016 ± 0.008 (0.41 ± 0.20)	0.015 ± 0.005 (0.38 ± 0.13)
RCWP0603	0.063 ± 0.005 (1.60 ± 0.13)	0.032 ± 0.005 (0.81 ± 0.13)	0.018 ± 0.005 (0.46 ± 0.13)	0.012 ± 0.005 (0.30 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)
RCWP1100	0.105 ± 0.005 (2.67 ± 0.13)	0.100 ± 0.005 (2.54 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)
RCWP1206	0.125 ± 0.005 (3.18 ± 0.13)	0.063 ± 0.005 (1.60 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)
RCWP2010	0.197 ± 0.006 (5.00 ± 0.15)	0.098 ± 0.005 (2.49 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)
RCWP2512	0.250 ± 0.006 (6.35 ± 0.15)	0.124 ± 0.005 (3.15 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)
RCWP5100	0.105 ± 0.005 (2.67 ± 0.13)	0.050 ± 0.005 (1.27 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)
RCWP5150	0.155 ± 0.005 (3.94 ± 0.13)	0.050 ± 0.005 (1.27 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)	0.015 ± 0.005 (0.38 ± 0.13)
RCWP7225	0.230 ± 0.005 (5.84 ± 0.13)	0.075 ± 0.005 (1.91 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)	0.020 ± 0.005 (0.51 ± 0.13)

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