Thick Film Chip Resistors, Alternate Terminations

FEATURES

- Suitable for solderable, epoxy bondable, or wire bondable applications
- Termination material: gold, platinum silver, platinum palladium gold or solder coated non-magnetic terminations available
- Multiple styles, termination materials and configurations, allow wide design flexibility
- Epoxy bondable or wire bondable non-magnetic terminations available
- Flow solderable
- Custom sizes available
- Burn-in data available
- Automatic placement capability
- Termination style: 3-sided wraparound termination or single termination flip chip standard; 5-sided wraparound termination available
- Tape and reel packaging available
- Internationally standardized sizes
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb Available

RoHS* Available

HALOGEN FREE

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	MAXIMUM WORKING VOLTAGE (1) V	RESISTANCE RANGE (2) Ω	TOLERANCE ± %	TEMPERATURE COEFFICIENT (3) (-55 °C to +155 °C) ± ppm/°C
RC0540	0504	0.100	40	10 to 500K	1, 2, 5, 10, 20	100
RC0550	0505	0.100	50	10 to 500K	1, 2, 5, 10, 20	100
RC0575	0705 (4)	0.200	70	10 to 1M	1, 2, 5, 10, 20	100
RC5100	1005	0.250	100	10 to 1M	1, 2, 5, 10, 20	100
RC1100	1010	0.450	100	10 to 1M	1, 2, 5, 10, 20	100
RC1206	1206	0.300	100	10 to 1M	1, 2, 5, 10, 20	100
RC5150	1505	0.325	125	10 to 1M	1, 2, 5, 10, 20	100
RC7225	2208	0.525	200	10 to 1M	1, 2, 5, 10, 20	100
RC2010	2010	0.575	200	10 to 1M	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) Higher values available. Please consult factory.

(3) ± 100 ppm/°C standard thru 1 MΩ, ± 200 ppm/°C offered from 1.1 MΩ to 10 MΩ.

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

GLOBAL PART NUMBER INFORMATION

New Global Part Numbering: RC0540AA1K00FKSB (preferred part number format)

R	C	0	5	4	0	A	A	1	K	0	0	F	K	S	B

GLOBAL MODEL	SIZE	TERM STYLE	TERM MATERIAL	RESISTANCE VALUE	TOLERANCE	TCR	SOLDER TERMINATION	PACKAGING
RC	**0540** **0550** **0575** **5100** **1100** **1206** **5150** **7225** **2010**	**A** = 3-sided **B** = Top only **C** = 5-sided	**G** = Non-magnetic **A** = Palladium silver **B** = Platinum gold **C** = Gold **D** = Platinum silver **E** = Platinum palladium gold	R = Ω K = kΩ M = MΩ **100R** = 100 Ω **1K00** = 1 kΩ **1M00** = 1 MΩ	**F** = ± 1 % **G** = ± 2 % **J** = ± 5 % **K** = ± 10 % **M** = ± 20 %	**K** = 100 ppm **L** = 150 ppm **N** = 200 ppm **W** = 350 ppm	**E** = Sn100 **F** = Sn95/Ag5, HSD **S** = Sn62/Pb36/Ag2, HSD **T** = Sn90/Pb10 **N** = No solder	**B** = Bulk **F** = T/R (full reel) **1** = T/R (1000 pcs) **5** = T/R (500 pcs) **T** = T/R (250 pcs min.) **W** = Waffle tray

Historical Part Numbering: CR1AA1001F100S2 (will continue to be accepted)

CR	1	A	A	1001	F	100	S2
HISTORICAL MODEL	SIZE	TERM STYLE	TERM MATERIAL	RESISTANCE VALUE	TOLERANCE	TCR	SOLDER TERMINATION

Note

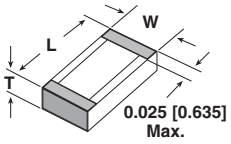
- For additional information on packaging, refer to the Surface Mount Resistor Packaging document (www.vishay.com/doc?31543).

MECHANICAL SPECIFICATIONS	
Resistive element	Ruthenium oxide
Encapsulation	Glass
Substrate	96 % alumina
Termination	Gold, palladium silver, platinum gold, platinum silver, platinum palladium gold or solder coated non-magnetic terminations available.
Solder finish	Base metallization without a solder finish standard. Hot solder dipped tin/silver or tin/lead/silver solder alloys available.

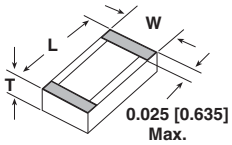
ENVIRONMENTAL SPECIFICATIONS	
Operating temperature	-55 °C to +155 °C
Moisture resistance	Less than 0.5 % change when tested per method 106 of MIL-STD-202
Life	Less than 1 % change when tested per method 108D (+85 °C) of MIL-STD-202
Short time overload	Less than 0.5 % ΔR

DIMENSIONS in inches (millimeters)

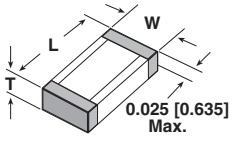
Termination Style A (3-sided wraparound)



Termination Style B (Top conductor only)



Termination Style C (5-sided wraparound)



MODEL	LENGTH (L) (1) ± 0.006 (0.152)	WIDTH (W) (1) ± 0.006 (0.152)	THICKNESS (T) (1) ± 0.005 (0.127)
RC0540	0.050 (1.27)	0.040 (1.02)	0.020 (0.508)
RC0550	0.050 (1.27)	0.050 (1.27)	0.020 (0.508)
RC0575	0.075 (1.90)	0.050 (1.27)	0.020 (0.508)
RC5100	0.100 (2.54)	0.050 (1.27)	0.020 (0.508)
RC1100	0.100 (2.54)	0.100 (2.54)	0.020 (0.508)
RC1206	0.125 (3.18)	0.062 (1.57)	0.025 (0.635)
RC5150	0.150 (3.81)	0.050 (1.27)	0.020 (0.508)
RC7225	0.225 (5.72)	0.075 (1.90)	0.020 (0.508)
RC2010	0.200 (5.08)	0.100 (2.54)	0.025 (0.635)

Note

(1) All dimensions are before solder coating.

TYPE	TERMINATION MATERIAL	TERMINATION STYLE	TERMINATION STYLE/ MATERIAL CODE	SOLDER TERMINATION CODE
Solderable	Non-magnetic	3-sided (wraparound)	AG	E or T (standard); F or S (optional) (2)
		Top only (flip chip)	BG	
Epoxy bondable/ solderable	Platinum palladium gold	3-sided (wraparound)	AE	N (standard); F or S (optional) (3)
		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 (4)	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

(2) Standard solder plating for the non-magnetic parts are solder terminations E or T. Hot solder dipped terminations F or S are also available.

(3) Use solder termination N for applications requiring epoxy bondable mounting, and solder terminations F or S for applications requiring solderable mounting.

(4) While not recommended, palladium silver terminations could be used for solderable applications when using a solder alloy containing silver. If the solder paste being used to solder the palladium silver terminated parts to the boards does not have a silver-based composition, then the silver in the terminations could begin to leach when it is exposed to liquidus non-silver-based solders, causing the potential for solderability and/or solder joint issues.

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