

Thick Film Chip Resistors, Industrial, High Power, **Aluminum Nitride Substrate**



Aluminum nitride over 3 x more power - same size

LINKS TO ADDITIONAL RESOURCES



MATERIAL SPECIFICATIONS				
Resistive element	Ruthenium oxide			
Encapsulation	Ероху			
Substrate	Aluminum nitride			
Termination	Solder-coated nickel barrier			
Solder finish	Pure tin or tin / lead solder alloy			

FEATURES

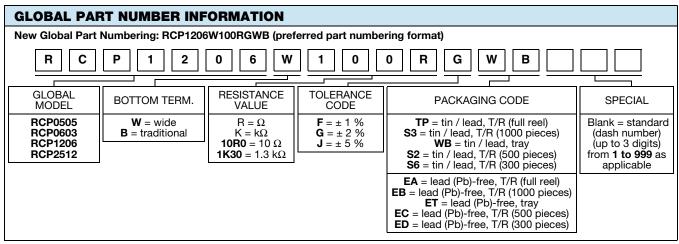
- · Thick film resistive element on an aluminum nitride (AIN) substrates
- Very high thermal conductivity in a small package size
- Termination: tin / lead wraparound termination RoHS over nickel barrier. Also available lead (Pb)-free wraparound terminations
 - HALOGEN FREE
- Capability to develop specific reliability programs designed to customer requirements
- Operating temperature range: -65 °C to +155 °C
- High frequency performance to 6 GHz
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

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 (1) (Standard Board Mount) P _{25°C} W	POWER RATING ⁽¹⁾ (Active Temperature Control) W	MAXIMUM WORKING VOLTAGE V	RESISTANCE RANGE Ω	TOLERANCE ± %	TEMPERATURE COEFFICIENT ± ppm/°C
RCP0505	0505	1.4	5.0	√P x R	10 to 2K	1, 2, 5	150
RCP0603	0603	1.5	3.9	√P x R	10 to 2K	1, 2, 5	150
RCP1206	1206	2.4	11	√PxR	10 to 2K	1, 2, 5	150
BCP2512	2512	3.5	22	√P x B	10 to 2K	1, 2, 5	150

Notes

- Consult factory for availability of additional case sizes
- The power rating depends on the maximum temperature of the resistive element. The temperature of the resistive element and adjacent materials will rise due to the power dissipation of the resistor. The majority of this heat/energy is dissipated by conduction through the substrate, terminations, solder joints, and printed circuit board. The maximum power rating in a particular application only applies if the temperature of the resistive element is maintained at or below 155 °C



Note

Revision: 10-Aug-2021

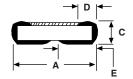
For additional information on packaging, refer to the Surface Mount Resistor Packaging document (www.vishav.com/doc?31543)

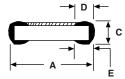


TEST Resistance to soldering heat Resistance temperature characteristic Low temperature operation		CONDITIONS OF TEST	TEST RESULTS (TYPICAL TEST LOTS) $\leq \pm 0.20 \%$ $\leq \pm 120 \text{ ppm}$ $\leq \pm 0.02 \%$	
		2 cycles; > 183 °C for 90 s to 120 s		
		-55 °C to +125 °C		
		-65 °C at rated voltage		
	RCP0505	3.1 W applied for 5 s		
Short time overload	RCP0603	4.4 W applied for 5 s	< 1.0.10.0/	
	RCP1206	4.7 W applied for 5 s	_ ≤ ± 0.10 %	
	RCP2512	7.7 W applied for 5 s		
High temperature exposure		+150 °C for 100 h	≤ ± 0.10 %	
Moisture resistance		240 h at ≥ 80 % RH	≤ ± 0.15 %	
Life		1000 h at +70 °C	≤ ± 0.10 %	
Solderability		J-STD-202, test B	95 % coverage	
		Per MIL-PRF-55342:		
Solder mounting integrity	RCP0505	1 kg force applied		
	RCP0603	2 kg force applied	No evidence of mechanical damage	
	RCP1206	2 kg force applied	7	
	RCP2512	3 kg force applied	7	

DIMENSIONS in inches (millimeters)





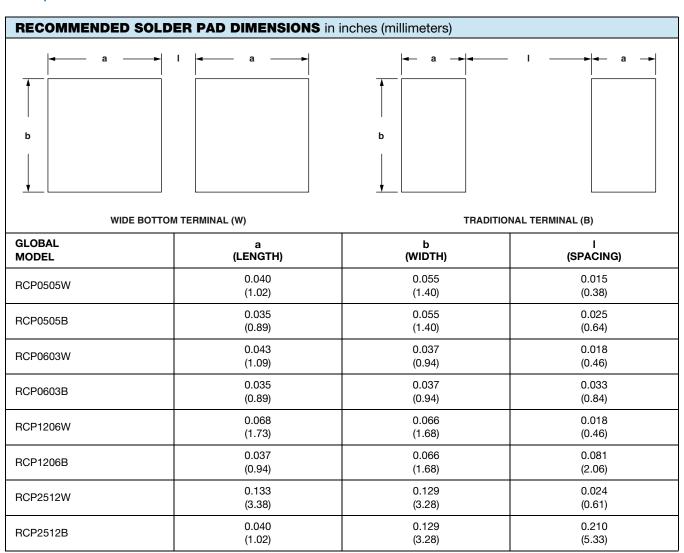


WIDE BOTTOM TERMINAL (W)

TRADITIONAL TERMINAL (B)

GLOBAL	A	B	C	D	E
MODEL	(LENGTH)	(WIDTH)	(HEIGHT)	(TOP TERM)	(BOTTOM TERM)
RCP0505W	0.055 ± 0.005	0.050 ± 0.005	0.020 ± 0.005	0.010 ± 0.005	0.020 ± 0.005
	(1.40 ± 0.13)	(1.27 ± 0.13)	(0.51 ± 0.13)	(0.25 ± 0.13)	(0.51 ± 0.13)
RCP0505B	0.055 ± 0.005	0.050 ± 0.005	0.020 ± 0.005	0.010 ± 0.005	0.015 ± 0.005
	(1.40 ± 0.13)	(1.27 ± 0.13)	(0.51 ± 0.13)	(0.25 ± 0.13)	(0.38 ± 0.13)
RCP0603W	0.063 ± 0.005	0.032 ± 0.005	0.018 ± 0.005	0.012 ± 0.005	0.023 ± 0.005
	(1.60 ± 0.13)	(0.81 ± 0.13)	(0.46 ± 0.13)	(0.30 ± 0.13)	(0.58 ± 0.13)
RCP0603B	0.063 ± 0.005	0.032 ± 0.005	0.018 ± 0.005	0.012 ± 0.005	0.015 ± 0.005
	(1.60 ± 0.13)	(0.81 ± 0.13)	(0.46 ± 0.13)	(0.30 ± 0.13)	(0.38 ± 0.13)
RCP1206W	0.122 ± 0.005	0.060 ± 0.005	0.020 ± 0.005	0.015 ± 0.005	0.048 ± 0.005
	(3.10 ± 0.13)	(1.52 ± 0.13)	(0.51 ± 0.13)	(0.38 ± 0.13)	(1.22 ± 0.13)
RCP1206B	0.122 ± 0.005	0.060 ± 0.005	0.020 ± 0.005	0.015 ± 0.005	0.015 ± 0.005
	(3.10 ± 0.13)	(1.52 ± 0.13)	(0.51 ± 0.13)	(0.38 ± 0.13)	(0.38 ± 0.13)
RCP2512W	0.250 ± 0.005	0.124 ± 0.005	0.020 ± 0.005	0.020 ± 0.005	0.113 ± 0.005
	(6.35 ± 0.13)	(3.15 ± 0.13)	(0.51 ± 0.13)	(0.51 ± 0.13)	(2.87 ± 0.13)
RCP2512B	0.250 ± 0.005	0.124 ± 0.005	0.020 ± 0.005	0.020 ± 0.005	0.020 ± 0.005
	(6.35 ± 0.13)	(3.15 ± 0.13)	(0.51 ± 0.13)	(0.51 ± 0.13)	(0.51 ± 0.13)







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