Vishay Dale

RCP

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



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Aluminum nitride over 3 x more power - same size

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 with HALOGEN lead (Pb)-free wraparound terminations. 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

Note

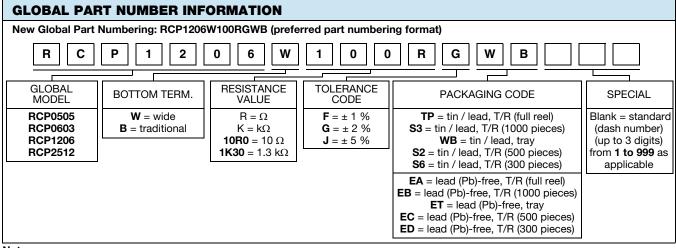
This datasheet provides information about parts that are RoHS-compliant and / or parts that are non RoHS-compliant. For example, parts with lead (Pb) terminations are not RoHS-compliant. Please see the information / tables in this datasheet for details

STANDARD ELECTRICAL SPECIFICATIONS							
GLOBAL MODEL	CASE SIZE	POWER RATING ⁽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	√P x R	10 to 2K	1, 2, 5	150
RCP2512	2512	3.5	22	√P x R	10 to 2K	1, 2, 5	150

Notes

Consult factory for availability of additional case sizes

(1) 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

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

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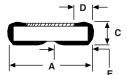
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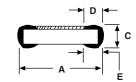
_	_		_				_
P	=:	REC)R	M	ΔΓ	чC	E

PERFORMANCE						
TEST		CONDITIONS OF TEST	TEST RESULTS (TYPICAL TEST LOTS)			
Resistance to soldering heat		2 cycles; > 183 °C for 90 s to 120 s	\leq ± 0.20 %			
Resistance temperature characteristic		-55 °C to +125 °C	≤ ± 120 ppm			
Low temperature operation		-65 °C at rated voltage	\leq ± 0.02 %			
	RCP0505	3.1 W applied for 5 s				
Short time overload	RCP0603	4.4 W applied for 5 s	< ± 0.10 %			
Short time overload	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	7			
	RCP0603	2 kg force applied	No evidence of mechanical damage			
	RCP1206	2 kg force applied				
	RCP2512	3 kg force applied				

DIMENSIONS in inches (millimeters)







WIDE BOTTOM TERMINAL (W)

TRADITIONAL TERMINAL (B)

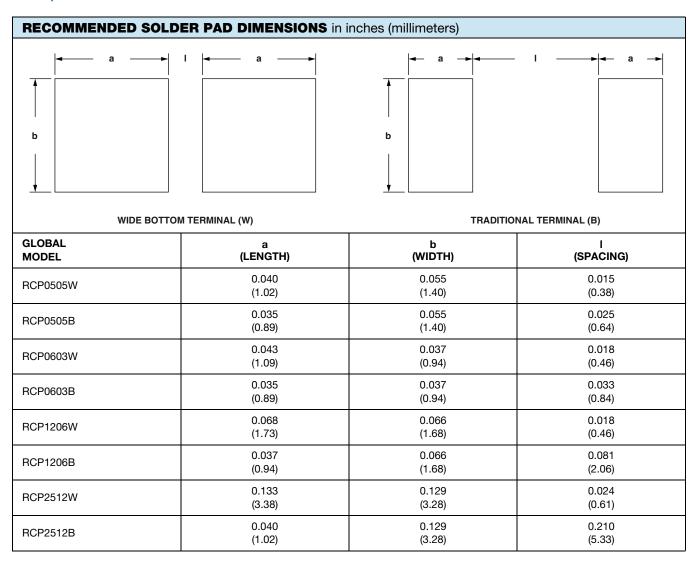
GLOBAL	A	B	C	D	E
MODEL	(LENGTH)	(WIDTH)	(HEIGHT)	(TOP TERM)	(BOTTOM TERM)
RCP0505W	0.055 ± 0.005	0.050 ± 0.005	0.020 ± 0.005	0.010 ± 0.005	0.020 ± 0.005
	(1.40 ± 0.13)	(1.27 ± 0.13)	(0.51 ± 0.13)	(0.25 ± 0.13)	(0.51 ± 0.13)
RCP0505B	0.055 ± 0.005	0.050 ± 0.005	0.020 ± 0.005	0.010 ± 0.005	0.015 ± 0.005
	(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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