

Features:

- Small size and light weight
- Reliability and high quality
- “-HP” denotes high power
- “-UP” denotes ultra-high power
- Inner termination engineered to deter sulfur contamination
- RoHS compliant, REACH compliant, and halogen free
- AEC-Q200 qualified



Electrical Specifications - RMCA

Type/Code	Power Rating (W) @ 70°C	Maximum Working Voltage ⁽¹⁾ (V)	Maximum Overload Voltage (V)	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance			
					0.1%	0.5%	1%	5%
RMCA0201	0.05	25	50	±200	-	100 - 10K	10 - 3M	10 - 10M
				+600/-200	-	-	1 - 9.76	-
RMCA0402	0.063	0.12 - 0.25	0.624	±1000	-	-	0.22 - 0.45	
				±800			0.475 - 0.976	0.47 - 0.91
		±400	1 - 9.76					
		±200	10.2M - 29.4M	11M - 30M				
	50	100	±100	10 - 1M	10 - 10M			
RMCA0603	0.1	0.1 - 0.31	0.775	±1000	-	-	0.075 - 0.976	
				±800			0.1 - 0.324	0.1 - 0.33
				±600			0.332 - 0.976	0.36 - 0.91
		±400	1 - 9.76					
		±200	10.2M - 29.4M	11M - 30M				
		±100	10 - 1M	10 - 10M				
RMCA0805	0.125	0.04 - 0.35	0.875	±1800	-	-	0.01 - 0.049	
				±800			0.05 - 0.976	
				±600			0.1 - 0.976	0.1 - 0.91
		±400	1 - 9.76					
		±200	10.2M - 29.4M	11M - 30M				
		±100	10 - 1M	10 - 10M				
RMCA1206	0.25	0.05 - 0.5	1.25	±1800	-	-	0.01 - 0.049	
				±800			0.05 - 0.976	
				±600			0.1 - 0.976	0.1 - 0.91
		±400	1 - 9.76					
		±200	10.2M - 29.4M	11M - 30M				
		±100	10 - 1M	10 - 10M				
RMCA1210	0.5	0.07 - 0.7	1.75	±1800	-	-	0.01 - 0.05	0.01 - 0.05
				±800			0.051 - 0.1	0.051 - 0.1
				±600			0.102 - 0.976	0.11 - 0.91
		±400	1 - 9.76					
		±200	10.2M - 29.4M	11M - 30M				
		±100	10 - 1M	10 - 10M				
RMCA2010	0.75	0.08 - 0.8	2.15	±1800	-	-	0.01 - 0.049	
				±800			0.05 - 0.976	
				±600			0.1 - 0.976	0.1 - 0.91
		±400	1 - 9.76					
		±200	10.2M - 29.4M	11M - 30M				
		±100	10 - 1M	10 - 10M				
	200	400	±200					
			±100	10 - 1M	10 - 10M			

Electrical Specifications - RMCA (cont.)

Type/Code	Power Rating (Watts) @ 70°C	Maximum Working Voltage ⁽¹⁾	Maximum Overload Voltage	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance			
					0.1%	0.5%	1%	5%
RMCA2512	1	0.1 - 0.99	2.475	±1800	-	0.01 - 0.049		
				±800		0.05 - 0.976		
				±600		0.1 - 0.976	0.1 - 0.91	
		200	400	±400		1 - 9.76		
				±200		10.2M - 29.4M	11M - 30M	
				±100		10 - 1M	10 - 10M	

(1) Lesser of $\sqrt{P \cdot R}$ or maximum working voltage.

Operating Temperature Range: -55 ~ +155°C

Electrical Specifications – RMCA_-HP

Type/Code	Power Rating (W) @ 70°C	Maximum Working Voltage ⁽¹⁾ (V)	Maximum Overload Voltage (V)	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance
					1% and 5%
RMCA0402-HP	0.1	0.15 - 0.31	0.786	±1000	0.22 - 0.45
				±800	0.46 - 0.97
		50	100	±400	1 - 9.76
				±100	10 - 10M
				±200	10.1M - 30M
RMCA0603-HP	0.125	0.1 - 0.35	0.879	±1000	0.075 - 0.097
				±800	0.1 - 0.33
		75	150	±600	0.34 - 0.97
				±400	1 - 9.76
				±100	10 - 10M
RMCA0805-HP	0.25	0.05 - 0.5	1.244	±1800	0.01 - 0.049
				±800	0.05 - 0.097
		150	300	±600	0.1 - 0.97
				±400	1 - 9.76
				±100	10 - 10M
RMCA1206-HP	0.5	0.07 - 0.7	1.759	±1800	0.01 - 0.049
				±800	0.05 - 0.097
		200	400	±600	0.1 - 0.97
				±400	1 - 9.76
				±100	10 - 10M
RMCA1210-HP	0.66	0.07 - 0.7	1.759	±200	10.1M - 30M
				±1800	0.01 - 0.049
		200	400	±800	0.05 - 0.097
				±600	0.1 - 0.97
				±400	1 - 9.76
RMCA2010-HP	1	0.1 - 0.99	2.487	±100	10 - 10M
				±1800	0.01 - 0.049
		200	400	±800	0.05 - 0.097
				±600	0.1 - 0.97
				±400	1 - 9.76
RMCA2512-HP	2	0.14 - 1.41	3.518	±200	10.1M - 30M
				±1800	0.01 - 0.049
		200	400	±800	0.05 - 0.097
				±600	0.1 - 0.97
				±400	1 - 9.76

Electrical Specifications – Ultra-high Power

Type/Code	Power Rating (W) @ 70°C	Maximum Working Voltage ⁽¹⁾ (V)	Maximum Overload Voltage (V)	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance	
					0.5%	1% and 5%
RMCA0402-UP	0.2	50	100	±400 ±100	- 10 - 1M	1 - 9.76 10 - 10M
RMCA0603-UP	0.33	75	125	±400 ±100	- 10 - 1M	1 - 9.76 10 - 10M
RMCA0805-UP	0.5	200	300	±400 ±100	- 10 - 1M	1 - 9.76 10 - 10M
RMCA1206-UP	0.75	200	400	±400 ±100	- 10 - 1M	1 - 9.76 10 - 10M
RMCA1210-UP	1			±400 ±100	- 10 - 1M	1 - 9.76 10 - 10M
RMCA2010-UP	1.5			±400 ±150	- 10 - 1M	1 - 9.76 10 - 10M
RMCA2512-UP	3			±400 ±150	- 10 - 1M	1 - 9.76 10 - 10M

Electrical Specifications – RMCA Jumper

Type	0201	0402	0603	0805	1206	1210	1812	2010	2512
Jumper Resistance Value (Ω)	0.05Ω Max								
Jumper Rated Current (A)	0.5	1			2				

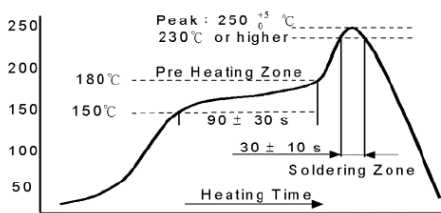
Electrical Specifications – High Power Jumper

Type	0402	0603	0805	1206	1210	1812	2010	2512
Jumper Resistance Value (Ω)	0.02Ω Max.							
Jumper Rated Current (A)	2	2.5	3.5	5	6	7	7	10
Max. Overload Current (A) < 1 second and 1 time	6	9	13	16	19	22	22	30

Mechanical Specifications



Type/Code	L Body Length	W Body Width	H Body Height	I ₁ Top Termination	I ₂ Bottom Termination	Unit
RMCA0201	0.024 ± 0.001	0.012 ± 0.001	0.009 ± 0.001	0.004 ± 0.002	0.006 ± 0.004	inches
	0.60 ± 0.03	0.30 ± 0.03	0.23 ± 0.03	0.10 ± 0.05	0.15 ± 0.05	mm
RMCA0402	0.039 ± 0.004	0.020 ± 0.002	0.012 ± 0.002	0.006 ± 0.004	0.008 ± 0.004	inches
	1.00 ± 0.10	0.50 ± 0.05	0.30 ± 0.05	0.15 ± 0.10	0.20 ± 0.10	mm
RMCA0603	0.063 ± 0.008	0.031 ± 0.006	0.016 ± 0.004	0.012 ± 0.008	0.012 ± 0.004	inches
	1.60 ± 0.20	0.80 ± 0.15	0.40 ± 0.10	0.30 ± 0.20	0.30 ± 0.10	mm
RMCA0805	0.079 ± 0.008	0.049 ± 0.006	0.020 ± 0.006	0.012 ± 0.006	0.016 ± 0.006	inches
	2.00 ± 0.20	1.25 ± 0.15	0.50 ± 0.15	0.30 ± 0.15	0.40 ± 0.15	mm
RMCA1206	0.120 ± 0.004	0.063 ± 0.008	0.022 ± 0.006	0.016 ± 0.008	0.020 ± 0.008	inches
	3.05 ± 0.10	1.60 ± 0.20	0.55 ± 0.15	0.40 ± 0.20	0.50 ± 0.20	mm
RMCA1210	0.120 ± 0.004	0.098 ± 0.008	0.022 ± 0.006	0.020 ± 0.008	0.020 ± 0.008	inches
	3.05 ± 0.10	2.50 ± 0.20	0.55 ± 0.15	0.50 ± 0.20	0.50 ± 0.20	mm
RMCA2010	0.197 ± 0.008	0.098 ± 0.008	0.022 ± 0.004	0.024 ± 0.008	0.024 ± 0.008	inches
	5.00 ± 0.20	2.50 ± 0.20	0.55 ± 0.10	0.60 ± 0.20	0.60 ± 0.20	mm
RMCA2512	0.248 ± 0.008	0.126 ± 0.008	0.022 ± 0.004	0.024 ± 0.008	0.024 ± 0.008	inches
	6.30 ± 0.20	3.20 ± 0.20	0.55 ± 0.10	0.60 ± 0.20	0.60 ± 0.20	mm
RMCA2512-HP	0.248 ± 0.008	0.126 ± 0.008	0.026 ± 0.006	0.024 ± 0.008	0.024 ± 0.008	inches
	6.30 ± 0.20	3.20 ± 0.20	0.65 ± 0.15	0.60 ± 0.20	0.60 ± 0.20	mm
RMCA2512-UP	0.248 ± 0.008	0.126 ± 0.008	0.027 ± 0.006	0.024 ± 0.008	0.024 ± 0.008	inches
	6.30 ± 0.20	3.20 ± 0.20	0.68 ± 0.15	0.60 ± 0.20	0.60 ± 0.20	mm

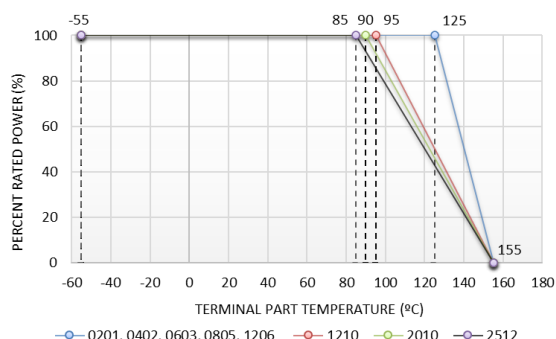
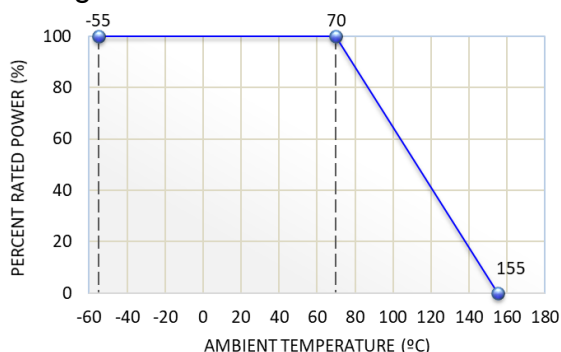
Performance Characteristics			
Test	Test Method	Test Specification	Test Condition
Temperature Coefficient of Resistance (TCR)	JIS C-5201-1 4.8 IEC-60115-1 4.8	Refer to Electrical Specifications table	At 25°C/-55°C and 25°C/+155°C, 25°C is the reference temperature, except for 0201 0201: at 25°C/-55°C and 25°C/+125°C
Short Time Overload	JIS-C-5201-1 4.13 IEC-60115-1 4.13	± 1 : $\pm(1\% + 0.05\Omega)$ ± 5 : $\pm(2\% + 0.1\Omega)$ Value < 1 Ω : $\pm(2\% + 0.1\Omega)$ 0201: $\pm(3\% + 0.1\Omega)$	RMCA 2.5 times RCWV or Max. Overload voltage, whichever is less for 5 seconds
			RMCA-HP 2.5 times RCWV or Max. Overload voltage, whichever is less for 2 seconds
			RMCA-UP 5 times Rated Power or Max. Overload voltage, whichever is less for 5 seconds
IR Reflow		± 1 : $\pm(1\% + 0.05\Omega)$ ± 5 : $\pm(1\% + 0.05\Omega)$	 <p>The graph shows a temperature profile for IR reflow. The y-axis is temperature in °C (50 to 250) and the x-axis is Heating Time. The profile starts at 150°C, rises to a peak of 250°C (labeled as 230°C or higher), and then cools. Key zones are marked: Pre Heating Zone (180°C), Soldering Zone (90 ± 30 s), and Heating Time (30 ± 10 s).</p>
Leaching	JIS-C-5201-1 4.18 IEC-60068-2-58 8.2.1	Individual leaching area $\leq 5\%$ Total leaching area $\leq 10\%$	260 \pm 5°C for 30 seconds
Temperature Cycling	JIS C-5201-1 clause 4.19	0.1%, 0.5%, 1%: $\pm(0.5\% + 0.05\Omega)$ 5%: $\pm(1\% + 0.1\Omega)$ Values < 1 Ω : $\pm(1\% + 0.1\Omega)$	-55 to +155°C, 5 cycles
Electric Iron		± 1 : $\pm(1\% + 0.05\Omega)$ ± 5 : $\pm(1\% + 0.05\Omega)$ Values < 1 Ω : $\pm(1\% + 0.05\Omega)$	Preheating temperature: 350 \pm 10°C Electric iron preheating time: 3 + 1/-0 seconds
Resistance to Solvent	JIS C-5201-1 clause 4.29	1%: $\pm(0.5\% + 0.05\Omega)$ 5%: $\pm(0.5\% + 0.05\Omega)$ Values < 1 Ω : $\pm(1\% + 0.05\Omega)$	The tested resistor shall be immersed into isopropyl alcohol at 20 ~ 25°C for 60 seconds. Then the resistor is left in the room for 48 hours.
Load Life and Moisture	JIS C-5201-1 clause 4.24	0.1%, 0.5%, 1%: $\pm(1\% + 0.05\Omega)$ 5%: $\pm(2\% + 0.05\Omega)$ Values < 1 Ω : $\pm(2\% + 0.05\Omega)$	40 \pm 2°C, 90 ~ 95% R.H. RCWV or Max. Working Voltage, whichever is less for 1000 hours, with 1.5 hours "ON" and 0.5 hour "OFF".
Load Life (Endurance)	JIS C-5201-1 clause 4.25	0.1%, 0.5%, 1%: $\pm(1\% + 0.05\Omega)$ 5%: $\pm(3\% + 0.1\Omega)$ Values < 1 Ω : $\pm(3\% + 0.1\Omega)$	70 \pm 2°C, RCWV or Max. Working Voltage, whichever is less for 1000 hours, with 1.5 hours "ON" and 0.5 hour "OFF".
Insulation Resistance	JIS C-5201-1 clause 4.6	$\geq 10G\Omega$	100 V for 1 minute
Terminal Bending Strength	JIS C-5201-1 clause 4.33	± 1 : $\pm(1\% + 0.05\Omega)$ ± 5 : $\pm(1\% + 0.05\Omega)$	Bending once for 5 seconds D: 0402, 0603, 0805 = 5 mm 1206, 1210 = 3 mm 2010, 2512 = 2 mm
Sulfur Test (FoS)	ATSM B809-95 ANSI/EIZ-977	For standard and high power products: $\pm(1\% + 0.05\Omega)$	60 \pm 2°C, no power rating for 1000 hours
		For ultra high power products: $\pm(1\% + 0.05\Omega)$	105 \pm 2°C, no power rating for 1000 hours
		For 0201 0.5% and 1%: $\pm(1\% + 0.05\Omega)$	105 \pm 2°C, no power rating for 360 hours

Operating temperature range is -55 to +155°C

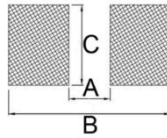
AEC-Q200 Test			
Test	Test Method	Test Specification	Test Condition
Temperature Cycling	JESD22 Method JA-104	0.1%, 0.5%, 1%: $\pm(0.5\% + 0.05\Omega)$ 5%: $\pm(1\% + 0.1\Omega)$	1000 cycles (-55 to +125°C) Measurement at 24 ± 4 hours after test conclusion. 30 min. maximum dwell time at each temperature extreme. 1 min. maximum transition time.
Resistance to Solvent	MIL-STD-202 Method 215	1%: $\pm(0.5\% + 0.05\Omega)$ 5%: $\pm(0.5\% + 0.05\Omega)$	Add aqueous wash chemical - OKEM clean or equivalent a. Isopropyl Alcohol: Mineral Spirits = 1:3 b. Terpene Defluxer (Bioact EC-7R) c. Deionized water: Propylene Glycol Monomethyl Ether: monoethanolamide = 42:1:1
Biased Humidity	MIL-STD-202 Method 103	0.1%, 0.5%, 1%: $\pm(1\% + 0.05\Omega)$ 5%: $\pm(3\% + 0.05\Omega)$	1000 hours 85°C/85% R.H. 10% of operation power. Measurement at 24 ± 4 hours after test conclusion
High Temperature Exposure (Storage)	MIL-STD-202 Method 108	0.1%, 0.5%, 1%: $\pm(0.5\% + 0.05\Omega)$ 5%: $\pm(2\% + 0.05\Omega)$	1000 hours. T=155°C Unpowered. 0201: 1000 hours. T=125°C Unpowered. Measurement at 24 ± 2 hours after test conclusion
Operational Life	MIL-STD-202 Method 108	0.1%, 0.5%, 1%: $\pm(1\% + 0.05\Omega)$ 5%: $\pm(3\% + 0.1\Omega)$ 0201: $\pm(5\% + 0.1\Omega)$	Condition D steady state TA = 125°C at derated power. 0201: 1000 hours TA = 125°C at 35% rated power. Measurement at 24 ± 4 hours after test conclusion.
External Visual	MIL-STD-883 Method 2009	-	Electrical test not required. Inspect device construction, marking and workmanship.
Physical Dimension	AEC-Q200 REV D Test 10 JESD22 Method JB-100	-	Verify physical dimensions to the applicable device detail specification. Note: User(s) and suppliers spec. Electrical test not required
Mechanical Shock	MIL-STD-202 Method 213	± 1 : $\pm(1\% + 0.05\Omega)$ ± 5 : $\pm(2\% + 0.1\Omega)$	Wave Form: Tolerance for half sine shock pulse. Peak value is 100 g. Normal duration is 6(ms)
Vibration	MIL-STD-202 Method 204	± 1 : $\pm(1\% + 0.05\Omega)$ ± 5 : $\pm(2\% + 0.1\Omega)$	5 g for 20 minutes 12 cycles each of 3 orientations. Note: Test from 10-2000 hours
Resistance to Soldering Heat	JIS-C-5201-1 4.18 IEC-60068-2-58 8.2.1	± 1 : $\pm(0.5\% + 0.05\Omega)$ ± 5 : $\pm(1\% + 0.05\Omega)$ Value < 1Ω: $\pm(1\% + 0.05\Omega)$ 0201: $\pm(2\% + 0.1\Omega)$	260 ± 5°C for 10 seconds
ESD	AEC-Q200-002 or ISO/DIS 10605	$\pm(3\% + 0.05\Omega)$	Human body model 0201: 500 V 0402/0603: 1 KV 0805 and above: 2 KV
Solderability	J-STD-002	± 1 : $\pm(0.5\% + 0.05\Omega)$ ± 5 : $\pm(1\% + 0.05\Omega)$	Method B, aging 4 hours at 155°C dry heat. Lead-free solder bath at 235 ± 3°C. Dipping time: 3 ± 0.5 seconds
Flammability	AEC-Q200 REV D Test 20 UL-94	V-0 or V-1	V-0 or V-1 are acceptable. Electrical test not required.
Terminal Strength (SMD)	AEC Q200-006	No breakage	Pressurizing force for 60 seconds 0402 / 0603: 8 N 0805 and above: 17.7 N
Board Flex	AEC Q200-005	$\pm(1\% + 0.05\Omega)$	Bending once for 60 seconds. 2010, 2512 sizes: 2 mm; other sizes: 3 mm

RCWV: Rated continuous working voltage

Power Derating Curve:



Recommended Pad Layout



Type/Code	A	B	C	Unit
RMCA0201	0.012	0.035	0.016	inches
	0.30	0.90	0.40	mm
RMCA0402	0.024	0.063	0.028	inches
	0.60	1.60	0.70	mm
RMCA0603	0.031	0.094	0.039	inches
	0.80	2.40	1.00	mm
RMCA0805	0.051	0.114	0.055	inches
	1.30	2.90	1.40	mm
RMCA1206	0.087	0.165	0.067	inches
	2.20	4.20	1.70	mm
RMCA1210	0.079	0.173	0.106	inches
	2.00	4.40	2.70	mm
RMCA2010	0.150	0.260	0.106	inches
	3.80	6.60	2.70	mm
RMCA2512	0.193	0.319	0.134	inches
	4.90	8.10	3.40	mm

Recommended Solder Profile

This information is intended as a reference for solder profiles for Stackpole resistive components. These profiles should be compatible with most soldering processes. These are only recommendations. Actual numbers will depend on board density, geometry, packages used, etc., especially those cells labeled with “*”.

100% Matte Tin / RoHS Compliant Terminations

Soldering iron recommended temperatures: 330 to 350°C with minimum duration.
Maximum number of reflow cycles: 3.

Wave Soldering

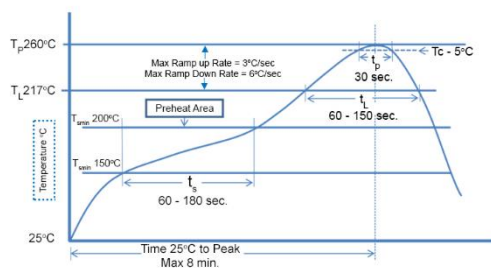
Description	Maximum	Recommended	Minimum
Preheat Time	80 seconds	70 seconds	60 seconds
Temperature Diff.	140°C	120°C	100°C
Solder Temp.	260°C	250°C	240°C
Dwell Time at Max.	10 seconds	5 seconds	*
Ramp DN (°C/sec)	N/A	N/A	N/A

Temperature Diff. = Difference between final preheat stage and soldering stage.

Convection IR Reflow

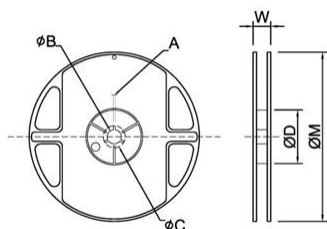
Description	Maximum	Recommended	Minimum
Ramp Up (°C/sec)	3°C/sec	2°C/sec	*
Dwell Time > 217°C	150 seconds	90 seconds	60 seconds
Solder Temp.	260°C	245°C	*
Dwell Time at Max.	30 seconds	15 seconds	10 seconds
Ramp DN (°C/sec)	6°C/sec	3°C/sec	*

Recommended Resistor Reflow Profile



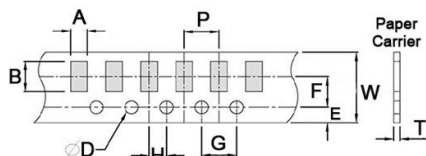
Packaging (EIA Standard RS-481)

Reel Specifications



Size	Size	A	B	C	D	W	M	Unit
0201	7" 10 K	0.079 ± 0.020 2.00 ± 0.50	0.512 ± 0.039 13.00 ± 1.00	0.827 ± 0.039 21.00 ± 1.00	2.362 ± 0.039 60.00 ± 1.00	0.453 ± 0.079 11.50 ± 2.00	7.008 ± 0.079 178.00 ± 2.00	inches mm
0402	7" 10 K		0.453 ± 0.079 11.50 ± 2.00			inches mm		
0603, 0805 1206, 1210	7" 5 K	0.079 ± 0.020 2.00 ± 0.50	0.531 ± 0.039 13.50 ± 1.00	0.827 ± 0.039 21.00 ± 1.00	2.362 ± 0.039 60.00 ± 1.00	0.453 ± 0.079 11.50 ± 2.00	7.008 ± 0.079 178.00 ± 2.00	inches mm
2010 and 2512	7" 4 K					0.630 ± 0.079 16.00 ± 2.00		inches mm

Packaging Specifications – Paper Tape

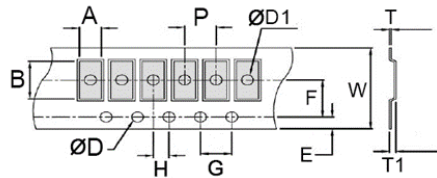


Size	A	B	W	E	F	Unit
RMCA0201	0.015 ± 0.002 0.37 ± 0.05	0.026 ± 0.004 0.67 ± 0.10	0.315 ± 0.008 8.00 ± 0.20	0.069 ± 0.004 1.75 ± 0.10	0.138 ± 0.002 3.50 ± 0.05	inches mm
RMCA0402	0.028 ± 0.004 0.70 ± 0.10	0.047 ± 0.004 1.20 ± 0.10				inches mm
RMCA0603	0.041 ± 0.008 1.05 ± 0.20	0.071 ± 0.008 1.80 ± 0.20	0.315 ± 0.008 8.00 ± 0.20	0.069 ± 0.004 1.75 ± 0.10	0.138 ± 0.002 3.50 ± 0.05	inches mm
RMCA0805	0.061 ± 0.008 1.55 ± 0.20	0.091 ± 0.008 2.30 ± 0.20				inches mm
RMCA1206	0.075 ± 0.008 1.90 ± 0.20	0.138 ± 0.008 3.50 ± 0.20	0.315 ± 0.008 8.00 ± 0.20	0.069 ± 0.004 1.75 ± 0.10	0.138 ± 0.002 3.50 ± 0.05	inches mm
RMCA1210	0.112 ± 0.008 2.85 ± 0.20	0.138 ± 0.008 3.50 ± 0.20				inches mm

Packaging Specifications – Paper Tape (cont.)

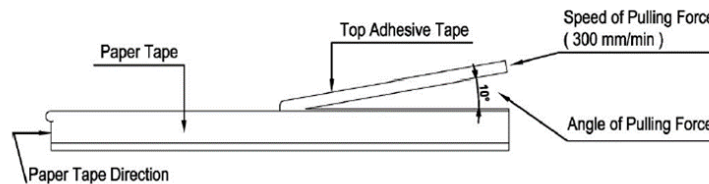
Size	G	H	T	D	P	Unit
RMCA0201	0.157 ± 0.004 4.00 ± 0.10	0.079 ± 0.002 2.00 ± 0.05	0.015 ± 0.004 0.37 ± 0.10	0.059 +0.004/-0 1.50 +0.1/-0	0.079 ± 0.002 2.00 ± 0.05	inches mm
RMCA0402			0.018 ± 0.004 0.45 ± 0.10		0.079 ± 0.004 2.00 ± 0.10	inches mm
RMCA0603			0.024 ± 0.004 0.60 ± 0.10		0.157 ± 0.004 4.00 ± 0.10	inches mm
RMCA0805			0.030 ± 0.004 0.75 ± 0.10		0.157 ± 0.004 4.00 ± 0.10	inches mm
RMCA1206			0.030 ± 0.004 0.75 ± 0.10		0.157 ± 0.004 4.00 ± 0.10	inches mm
RMCA1210			0.030 ± 0.004 0.75 ± 0.10		0.157 ± 0.004 4.00 ± 0.10	inches mm

Packaging Specifications – Plastic Tape



Size	A	B	W	E	F	G	Unit
RMCA2010	0.110 ± 0.008 2.80 ± 0.20	0.220 ± 0.008 5.60 ± 0.20	0.472 ± 0.004 12.00 ± 0.10	0.069 ± 0.004 1.75 ± 0.10	0.217 ± 0.002 5.50 ± 0.05	0.157 ± 0.004 4.00 ± 0.10	inches mm
RMCA2512 (-HP and -UP)	0.134 ± 0.008 3.40 ± 0.20	0.264 ± 0.008 6.70 ± 0.20					inches mm
Size	H	T	D	D1	T1	P	Unit
RMCA2010	0.079 ± 0.002 2.00 ± 0.05	0.009 ± 0.004 0.23 ± 0.10	0.059 +0.004/-0 1.50 +0.10/-0	0.059 ± 0.004 1.50 ± 0.10	0.033 ± 0.006 0.85 ± 0.15	0.157 ± 0.004 4.00 ± 0.10	inches mm
RMCA2512					0.033 ± 0.006 0.85 ± 0.15		inches mm
RMCA2512-HP RMCA2512-UP					0.037 ± 0.006 0.95 ± 0.15		inches mm

Peel-Off Strength Specifications



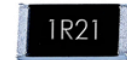
Top Adhesive Peel-off Strength: 10 g ~ 70 g.

Part Marking Instructions

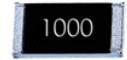
E96 and E24 Values for 0805-2512 (0.1%, 0.5% and 1% tolerances)

The nominal resistance is marked on the surface of the overcoating with the use of **four character markings.**

- 1. Values <100Ω will use "R" as the decimal holder.



1.21Ω

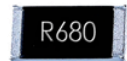


100Ω

E24 Values for 0805-2512 (5% tolerance, ≤ 0.91Ω)

The nominal resistance is marked on the surface of the overcoating with the use of **four character markings.**

- 1. Values ≤ 0.91Ω will use "R" as the decimal holder.

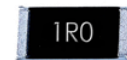


0.68Ω

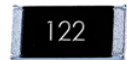
E24 Values for 0805-2512 (5% tolerance, ≥ 1Ω)

The nominal resistance is marked on the surface of the overcoating with the use of **three character markings.**

- 1. Values between 1Ω and 9.1Ω will use "R" as the decimal holder.



1Ω

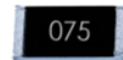


1.2 KΩ

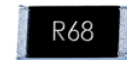
E24 Values for 0603 (5% tolerance)

The nominal resistance is marked on the surface of the overcoating with the use of **three character markings.**

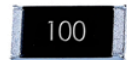
- 1. Values between 0.075Ω and 0.091Ω will use no decimal holder.
- 2. Values between 0.1Ω and 9.1Ω will use "R" as the decimal holder.
- 3. Values ≥10Ω will use no decimal holder.



0.075Ω



0.68Ω

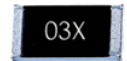


10Ω

E96 Values for 0603 size (0.1%, 0.5% and 1% tolerances)

A two character number is assigned to each standard R-Value (E96) as shown in the chart below. This is followed by one alpha character which is used as a multiplier.

Each letter from "Y" - "F" represents a specific multiplier.



10.5Ω

Alpha Character = Multiplier	
Y = 0.1	C = 1000
X = 1	D = 10000
A = 10	E = 100000
B = 100	F = 1000000

Chip Marking	Value
01B =	10.0 x 100 = 1 KΩ
25C =	17.8 x 1000 = 17.8 KΩ
93D =	90.9 x 10000 = 909 KΩ

E96

#	R-Value	#	R-Value	#	R-Value	#	R-Value	#	R-Value	#	R-Value
01	10.0	17	14.7	33	21.5	49	31.6	65	46.4	81	68.1
02	10.2	18	15.0	34	22.1	50	32.4	66	47.5	82	69.8
03	10.5	19	15.4	35	22.6	51	33.2	67	48.7	83	71.5
04	10.7	20	15.8	36	23.2	52	34.0	68	49.9	84	73.2
05	11.0	21	16.2	37	23.7	53	34.8	69	51.1	85	75.0
06	11.3	22	16.5	38	24.3	54	35.7	70	52.3	86	76.8
07	11.5	23	16.9	39	24.9	55	36.5	71	53.6	87	78.7
08	11.8	24	17.4	40	25.5	56	37.4	72	54.9	88	80.6
09	12.1	25	17.8	41	26.1	57	38.3	73	56.2	89	82.5
10	12.4	26	18.2	42	26.7	58	39.2	74	57.6	90	84.5
11	12.7	27	18.7	43	27.4	59	40.2	75	59.0	91	86.6
12	13.0	28	19.1	44	28.0	60	41.2	76	60.4	92	88.7
13	13.3	29	19.6	45	28.7	61	42.2	77	61.9	93	90.9
14	13.7	30	20.0	46	29.4	62	43.2	78	63.4	94	93.1
15	14.0	31	20.5	47	30.1	63	44.2	79	64.9	95	95.3
16	14.3	32	21.0	48	30.9	64	45.3	80	66.5	96	97.6

Note: 0402 sizes are unmarked.

RoHS Compliance

Stackpole Electronics has joined the worldwide effort to reduce the amount of lead in electronic components and to meet the various regulatory requirements now prevalent, such as the European Union's directive regarding "Restrictions on Hazardous Substances" (RoHS 3). As part of this ongoing program, we periodically update this document with the status regarding the availability of our compliant components. All our standard part numbers are compliant to EU Directive 2011/65/EU of the European Parliament as amended by Directive (EU) 2015/863/EU as regards the list of restricted substances.

RoHS Compliance Status						
Standard Product Series	Description	Package / Termination Type	Standard Series RoHS Compliant	Lead-Free Termination Composition	Lead-Free Mfg. Effective Date (Std Product Series)	Lead-Free Effective Date Code (YY/WW)
RMCA	Automotive Grade Anti-Sulfur and AEC Qualified Thick Film Chip Resistor	SMD	YES RoHS Compliant by means of exemption 7c-I	100% Matte Sn over Ni	Always	Always

"Conflict Metals" Commitment

We at Stackpole Electronics, Inc. are joined with our industry in opposing the use of metals mined in the "conflict region" of the eastern Democratic Republic of the Congo (DRC) in our products. Recognizing that the supply chain for metals used in the electronics industry is very complex, we work closely with our own suppliers to verify to the extent possible that the materials and products we supply do not contain metals sourced from this conflict region. As such, we are in compliance with the requirements of Dodd-Frank Act regarding Conflict Minerals.

Compliance to "REACH"

We certify that all passive components supplied by Stackpole Electronics, Inc. are SVHC (Substances of Very High Concern) free and compliant with the requirements of EU Directive 1907/2006/EC, "The Registration, Evaluation, Authorization and Restriction of Chemicals", otherwise referred to as REACH. Contact us for complete list of REACH Substance Candidate List.

Environmental Policy

It is the policy of Stackpole Electronics, Inc. (SEI) to protect the environment in all localities in which we operate. We continually strive to improve our effect on the environment. We observe all applicable laws and regulations regarding the protection of our environment and all requests related to the environment to which we have agreed. We are committed to the prevention of all forms of pollution.

How to Order

R M C A 0 4 0 2 F T 1 R 0 0 - H P

Product Series		Size and Wattage				Tolerance		Packaging				Resistance Value		Special		
Code	Description	Code	Std W	-HP W	-UP W	Code	Tol	Code	Description	Size	Quantity	Four characters with the multiplier used as the decimal holder. "L" used as multiplier of 10 ⁻³ for any value under 0.1 ohm.		Code	Description	
RMCA	Automotive Grade Thick Film Chip Resistors	0201	0.05	-	-	B	0.1%	T	7" Reel Paper Tape	0201, 0402	10000	0.010 ohm = 10L0 3.9 ohm = 3R90 10 Kohm = 10K0 1.1 Mohm = 1M10 Zero ohm jumper = 0R00	blank	Standard		
		0402	0.063	0.1	0.2	D	0.5%			1206, 1210	5000		-HP	High Power		
		0603	0.1	0.125	0.33	F	1%			7" Reel Plastic Tape	2010, 2512		4000	-UP	Ultra-high Power	
		0805	0.125	0.25	0.5	J	5%									
		1206	0.25	0.5	0.75	Z	Jumper									
		1210	0.5	0.66	1											
		2010	0.75	1	1.5											
2512	1	2	3													