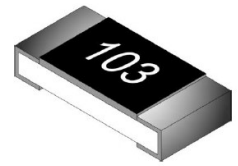


Features:

- Small size and light weight
- Reliability and high quality
- “-HP” denotes high power
- “-UP” denotes ultra-high power
- AEC-Q200 qualified
- RoHS compliant and halogen free
- REACH compliant



Electrical Specifications									
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%	10%	
RMCA0402	0.063	0.17 - 0.25	0.624	± 800	-	0.47 - 0.976	0.47 - 0.91	-	
		50	100	± 400		1 - 9.76			
				± 100		10 - 1M	10 - 10M		
				± 200		-	10.2M - 30M	11M - 30M	-
	Jumper: 1A	-	-	-	0.05 max.				
RMCA0603	0.1	0.1 - 0.31	0.775	± 800	-	0.1 - 0.324	0.1 - 0.33	-	
				± 600		0.331 - 0.976	0.36 - 0.91	-	
				± 400		1 - 9.76			
		75	150	± 200		-		10 - 10M	
				± 100		10 - 1M	10 - 10M	-	
				± 200		-	10.2M - 30M	11M - 30M	-
	Jumper: 1A	-	-	-	0.05 max.				
RMCA0805	0.125	0.04 - 0.35	0.875	± 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			
		150	300	± 200		-		10 - 10M	
				± 100		10 - 1M	10 - 10M	-	
				± 200		-	10.2M - 30M	11M - 30M	-
	Jumper: 1A	-	-	-	0.05 max.				
RMCA1206	0.25	0.05 - 0.5	1.25	± 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	400	± 200		-		10 - 10M	
				± 100		10 - 1M	10 - 10M	-	
				± 200		-	10.2M - 30M	11M - 30M	-
	Jumper: 1A	-	-	-	0.05 max.				
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	400	± 200		-		10 - 10M	
				± 100		10 - 1M	10 - 10M	-	
				± 200		-	10.2M - 30M	11M - 30M	-
	Jumper: 2A	-	-	-	0.05 max.				

Electrical Specifications (cont.)								
Type/Code	Power Rating (Watts) @ 70°C	Maximum Working Voltage ⁽¹⁾	Maximum Overload Voltage	Resistance Temperature Coefficient	Ohmic Range (Ω) and Tolerance			
					0.1%	1%	5%	10%
RMCA2010	0.75	0.08 - 0.8	2.15	± 1800	-	0.01 - 0.05	0.01 - 0.05	-
				± 800				
		± 600	0.102 - 0.976	0.11 - 0.91				
		± 400	1 - 9.76					
	200	400	± 200	-		10 - 10M		
			± 100	10 - 1M	10 - 10M	-		
			± 200	-	10.2M - 30M	11M - 30M	-	
			Jumper: 1A	-	-	-	0.05 max.	
RMCA2512	1	0.1 - 0.99	2.475	± 1800	-	0.01 - 0.05	0.01 - 0.05	-
				± 800				
		± 600	0.102 - 0.976	0.11 - 0.91				
		± 400	1 - 9.76					
	200	400	± 200	-		10 - 10M		
			± 100	10 - 1M	10 - 10M	-		
			± 200	-	10.2M - 30M	11M - 30M	-	
			Jumper: 2A	-	-	-	0.05 max.	

(1) Lesser of $\sqrt{P \cdot R}$ or maximum working voltage.
Operating Temperature Range: -55°C ~ +155°C

Electrical Specifications – 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
					1% and 5%
RMCA0402_-HP	0.1	50	100	± 400 ± 100	1 - 9.76 10 - 10M
RMCA0603_-HP	0.125	75	150	± 400 ± 100	1 - 9.76 10 - 10M
RMCA0805_-HP	0.25	150	300	± 400 ± 100	1 - 9.76 10 - 10M
RMCA1206_-HP	0.5	200	400	± 400 ± 100	1 - 9.76 10 - 10M
RMCA1210_-HP	0.66			± 400 ± 100	1 - 9.76 10 - 10M
RMCA2010_-HP	1			± 400 ± 100	1 - 9.76 10 - 10M
RMCA2512_-HP	2			± 400 ± 100	1 - 9.76 10 - 10M

Electrical Specifications – High Power Low Ohm					
Type/Code	Power Rating (W) @ 70°C	Rated Voltage Range (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 ± 800	0.22 - 0.442 0.452 - 1
RMCA0603_-HP	0.125	0.1 - 0.35	0.879	± 1000 ± 800 ± 600	0.075 - 0.0976 0.1 - 0.324 0.33 - 1
RMCA0805_-HP	0.25	0.05 - 0.5	1.244	± 1800 ± 800 ± 600	0.01 - 0.049 0.05 - 0.0976 0.1 - 1

Electrical Specifications – High Power Low Ohm (cont.)

Type/Code	Power Rating (W) @ 70°C	Rated Voltage Range (V)	Maximum Overload Voltage (V)	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance	
					1% and 5%	
RMCA1206_-HP	0.5	0.07 - 0.7	1.759	± 1800 ± 800 ± 600	0.01 - 0.049 0.05 - 0.0976 0.1 - 1	
RMCA1210_-HP	0.66	0.08 - 0.81	2.021	± 1800 ± 800 ± 600	0.01 - 0.049 0.05 - 0.0976 0.1 - 1	
RMCA2010_-HP	1	0.1 - 0.99	2.487	± 1800 ± 800 ± 600	0.01 - 0.049 0.05 - 0.0976 0.1 - 1	
RMCA2512_-HP	2	0.14 - 1.41	3.518	± 1800 ± 800 ± 600	0.01 - 0.049 0.05 - 0.0976 0.1 - 1	

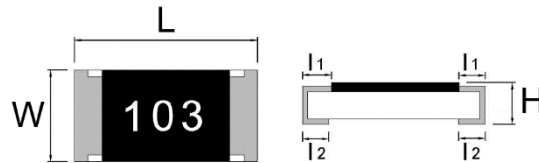
Electrical Specifications – High Power High Ohm

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	50	100	± 200	10.1M - 30M	
RMCA0603_-HP	0.125	75	150			
RMCA0805_-HP	0.25	150	300			
RMCA1206_-HP	0.5	200	400			
RMCA1210_-HP	0.66					
RMCA2010_-HP	1					
RMCA2512_-HP	2					

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	150	200	± 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	250	500	± 400 ± 150	- 10 - 1M	1 - 9.76 10 - 10M

Mechanical Specifications



Type/Code	L Body Length	W Body Width	H Body Height	l ₁ Top Termination	l ₂ Bottom Termination	Unit
RMCA0402	0.039 ± 0.004 1.00 ± 0.10	0.020 ± 0.002 0.50 ± 0.05	0.012 ± 0.002 0.30 ± 0.05	0.006 ± 0.004 0.15 ± 0.10	0.008 ± 0.004 0.20 ± 0.10	inches mm
RMCA0603	0.063 ± 0.008 1.60 ± 0.20	0.031 ± 0.006 0.80 ± 0.15	0.016 ± 0.004 0.40 ± 0.10	0.012 ± 0.008 0.30 ± 0.20	0.012 ± 0.004 0.30 ± 0.10	inches mm
RMCA0805	0.079 ± 0.008 2.00 ± 0.20	0.049 ± 0.006 1.25 ± 0.15	0.020 ± 0.006 0.50 ± 0.15	0.012 ± 0.006 0.30 ± 0.15	0.016 ± 0.006 0.40 ± 0.15	inches mm
RMCA1206	0.120 ± 0.004 3.05 ± 0.10	0.063 ± 0.008 1.60 ± 0.20	0.022 ± 0.006 0.55 ± 0.15	0.016 ± 0.008 0.40 ± 0.20	0.020 ± 0.008 0.50 ± 0.20	inches mm
RMCA1210	0.120 ± 0.004 3.05 ± 0.10	0.098 ± 0.008 2.50 ± 0.20	0.022 ± 0.006 0.55 ± 0.15	0.020 ± 0.008 0.50 ± 0.20	0.020 ± 0.008 0.50 ± 0.20	inches mm
RMCA2010	0.197 ± 0.008 5.00 ± 0.20	0.098 ± 0.008 2.50 ± 0.20	0.022 ± 0.004 0.55 ± 0.10	0.024 ± 0.008 0.60 ± 0.20	0.024 ± 0.008 0.60 ± 0.20	inches mm
RMCA2512	0.248 ± 0.008 6.30 ± 0.20	0.126 ± 0.008 3.20 ± 0.20	0.022 ± 0.004 0.55 ± 0.10	0.024 ± 0.008 0.60 ± 0.20	0.024 ± 0.008 0.60 ± 0.20	inches mm
RMCA2512_-HP RMCA2512_-UP	0.248 ± 0.008 6.30 ± 0.20	0.126 ± 0.008 3.20 ± 0.20	0.027 ± 0.006 0.68 ± 0.15	0.024 ± 0.008 0.60 ± 0.20	0.024 ± 0.008 0.60 ± 0.20	inches mm

Performance Characteristics

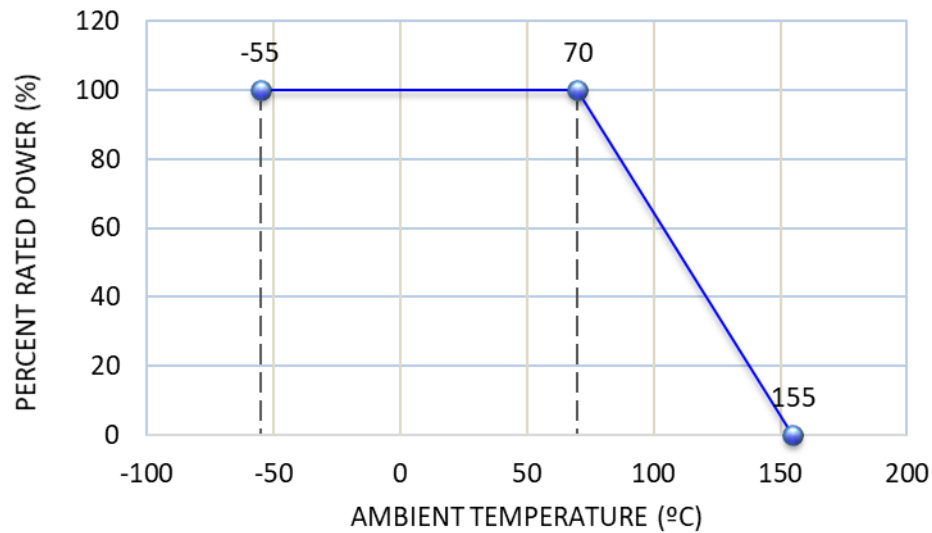
Test	Test Method	Test Specification	Test Condition
Temperature Coefficient of Resistance (TCR)	JIS C-5201-1 4.8 IEC-60115-1 4.8	Refer to Electrical Specifications table	At 25°C/-55°C and 25°C/+155°C, 25°C is the reference temperature
Short Time Overload	JIS-C-5201-1 4.13 IEC-60115-1 4.13	±1: ±(1% + 0.05 Ω) ±5: ±(2% + 0.1 Ω) Value <1 Ω: ±(2% + 0.1 Ω)	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: ±(1% + 0.05 Ω) ±5: ±(1% + 0.05 Ω)	
Leaching	JIS-C-5201-1 4.18 IEC-60068-2-58 8.2.1	Individual leaching area ≤ 5% Total leaching area ≤ 10%	260°C ± 5°C for 30 seconds
Soldering Heat	JIS-C-5201-1 4.18 IEC-60068-2-58 8.2.1	±1: ±(0.5% + 0.05 Ω) ±5: ±(1% + 0.05 Ω) Value <1 Ω: ±(1% + 0.05 Ω)	260°C ± 5°C for 10 seconds
Temperature Cycling	JIS C-5201-1 clause 4.19	0.1%, 0.5%, 1%: ±(0.5% + 0.05 Ω) 2%, 5%: ±(1% + 0.1 Ω) Values <1 Ω: ±(1% + 0.1 Ω)	-55°C to +155°C, 5 cycles

Performance Characteristics (cont.)			
Test	Test Method	Test Specification	Test Condition
Electric Iron		±1: ±(1% + 0.05 Ω) ±5: ±(1% + 0.05 Ω) Values <1 Ω: ±(1% + 0.05 Ω)	Preheating temperature: 350°C ± 10°C Electric iron preheating time: 3 + 1/-0 seconds
Resistance to Solvent	JIS C-5201-1 clause 4.29	1%: ±(0.5% + 0.05 Ω) 5%: ±(0.5% + 0.05 Ω) Values <1 Ω: ±(1% + 0.05 Ω)	The tested resistor shall be immersed into isopropyl alcohol at 20°C~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%: ±(1% + 0.05 Ω) 2%, 5%: ±(2% + 0.05 Ω) Values <1 Ω: ± (2% + 0.05 Ω)	40°C ± 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%: ±(1% + 0.05 Ω) 2%, 5%: ±(3% + 0.1 Ω) Values <1 Ω: ± (3% + 0.1 Ω)	70°C ± 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	≥ 10G Ω	100V for 1 minute
Terminal Bending Strength	JIS C-5201-1 clause 4.33	±1: ±(1% + 0.05 Ω) ±5: ±(1% + 0.05 Ω)	Bending once for 5 seconds D: 0402, 0603, 0805 = 5mm 1206, 1210 = 3mm 2010, 2512 = 2mm

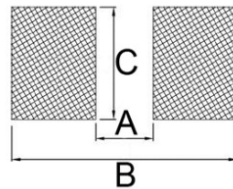
Operating temperature range is -55°C to +155°C

AEC-Q200 Test			
Test	Test Method	Test Specification	Test Condition
Temperature Cycling	JESD22 Method JA-104	0.1%, 0.5%, 1%: ±(0.5% + 0.05 Ω) 2%, 5%: ±(1% + 0.1 Ω)	1000 cycles (-55°C to +125°C) Measurement at 24 ± 4 hours after test conclusion.
Resistance to Solvent	MIL-STD-202 Method 215	1%: ±(0.5% + 0.05 Ω) 5%: ±(0.5% + 0.05 Ω)	Add aqueous wash chemical - OKEM clean or equivalent
Biased Humidity	MIL-STD-202 Method 103	0.1%, 0.5%, 1%: ±(1% + 0.05 Ω) 2%, 5%: ±(3% + 0.05 Ω)	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%: ±(0.5% + 0.05 Ω) 2%, 5%: ±(2% + 0.05 Ω)	1000 hours. T=155°C Unpowered. Measurement at 24 ± 4 hours after test conclusion
Operational Life	MIL-STD-202 Method 108	0.1%, 0.5%, 1%: ±(1% + 0.05 Ω) 2%, 5%: ±(3% + 0.1 Ω)	Condition D steady state TA = 125°C at derated power. Measurement at 24 ± 4 hours after test
External Visual	MIL-STD-883 Method 2009	-	Electrical test not required. Inspect device construction, marking and workmanship.
Mechanical Shock	MIL-STD-202 Method 213	±1: ±(1% + 0.05 Ω) ±5: ±(2% + 0.1 Ω)	Wafer Form: Tolerance for half sine shock pulse. Peak value is 100g. Normal duration is 6 minutes
Vibration	MIL-STD-202 Method 204	±1: ±(1% + 0.05 Ω) ±5: ±(2% + 0.1 Ω)	5g for 20 minutes 12 cycles each of 3 orientations. Note: Test from 10-2000 hours
ESD	AEC-Q200-002 or ISO/DIS 10605	±(3% + 0.05 Ω)	Human body model 0402 / 0603: 1 KV 0805 and above: 2 KV
Solderability	J-STD-002	±1: ±(0.5% + 0.05 Ω) ±5: ±(1% + 0.05 Ω)	(1) 4 hours 155°C, dry heat (2) 245°C ± 5°C, 3 seconds
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	±1: ±(1% + 0.05 Ω) ±5: ±(1% + 0.05 Ω)	Bending once for 60 seconds. 2010, 2512 sizes: 2 mm; other sizes: 3 mm

Power Derating Curve:

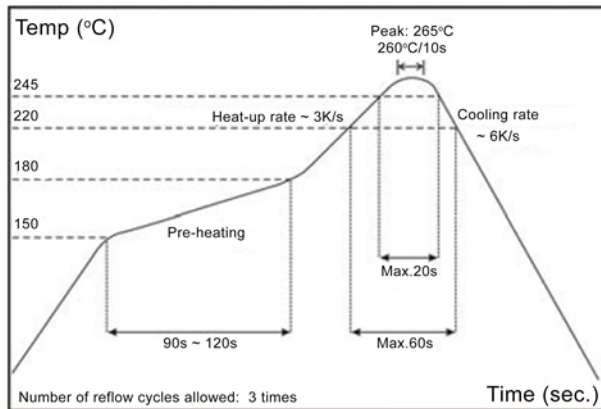


Recommended Pad Layout

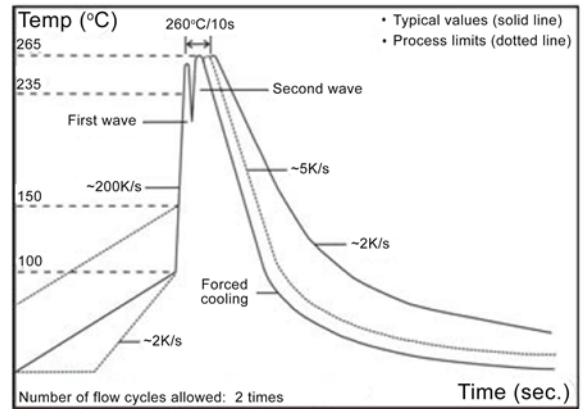


Type / Code	A	B	C	Unit
RMCA0402	0.024	0.063	0.028	inches
	0.60	1.60	0.70	mm
RMCA0603	0.031	0.094	0.039	inches
	0.80	2.40	1.00	mm
RMCA0805	0.051	0.114	0.055	inches
	1.30	2.90	1.40	mm
RMCA1206	0.087	0.165	0.067	inches
	2.20	4.20	1.70	mm
RMCA1210	0.079	0.173	0.106	inches
	2.00	4.40	2.70	mm
RMCA2010	0.150	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 Soldering Profile



IR Reflow Soldering



Wave Soldering (Flow Soldering)

Rework temperature (hot air equipment): 350°C, 3 – 5 seconds

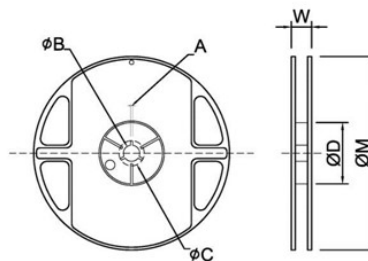
Recommended reflow methods:

- IR, vapor phase oven, hot air oven.

If reflow temperature exceed the recommended profile, devices may not meet the performance requirements.

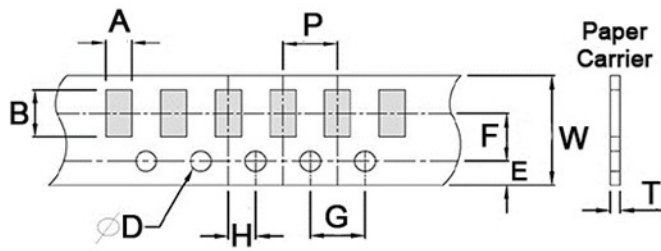
Packaging (EIA Standard RS-481)

Packaging Specifications



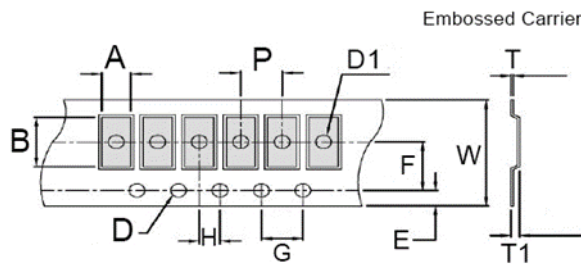
Size	Size	A	B	C	D	W	M	Unit
RMCA0402	7" 10K	0.079 ± 0.020 2.00 ± 0.50	0.531 ± 0.039 13.50 ± 1.00	0.827 ± 0.039 21.00 ± 1.00	2.362 ± 0.039 60.00 ± 1.00	0.453 ± 0.079	7.008 ± 0.079	inches
						11.50 ± 2.00		mm
RMCA0603 RMCA0805 RMCA1206 RMCA1210	7" 5K					0.453 ± 0.079		inches
						11.50 ± 2.00		mm
RMCA2010 RMCA2512	7" 4K					0.630 ± 0.079		inches
						16.00 ± 2.00		mm

Paper Tape Specifications

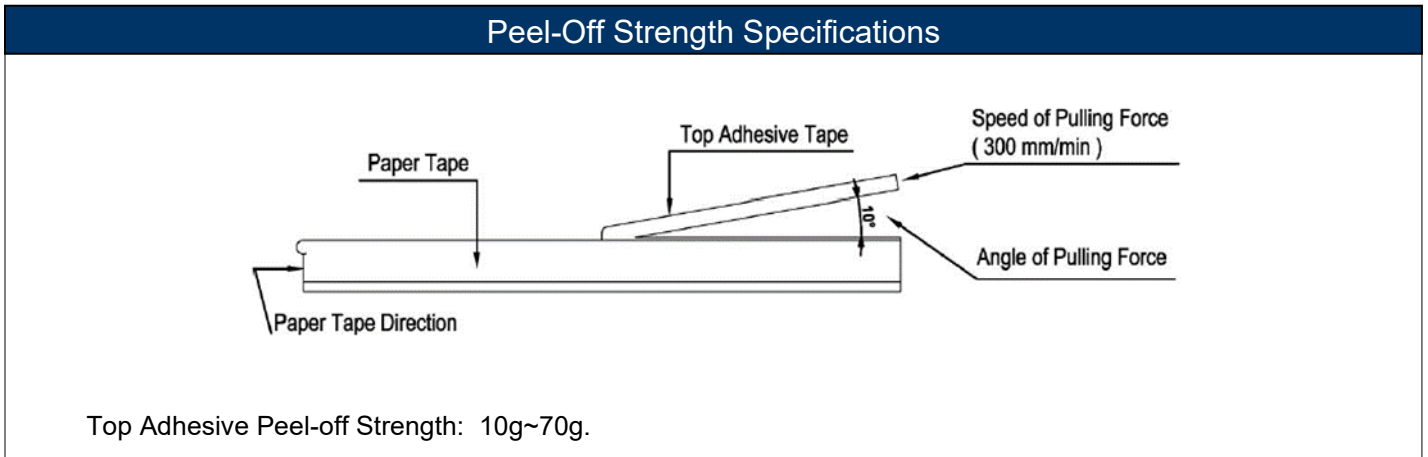


Size	A	B	W	E	F	Unit
RMCA0402	0.028 ± 0.004 0.70 ± 0.10	0.047 ± 0.004 1.20 ± 0.10	0.315 ± 0.008 8.00 ± 0.20	0.069 ± 0.004 1.75 ± 0.10	0.138 ± 0.002 3.50 ± 0.05	inches
RMCA0603	0.041 ± 0.008 1.05 ± 0.20	0.071 ± 0.008 1.80 ± 0.20				mm
RMCA0805	0.061 ± 0.008 1.55 ± 0.20	0.091 ± 0.008 2.30 ± 0.20				inches
RMCA1206	0.075 ± 0.008 1.90 ± 0.20	0.138 ± 0.008 3.50 ± 0.20				mm
RMCA1210	0.112 ± 0.008 2.85 ± 0.20	0.138 ± 0.008 3.50 ± 0.20				inches
						mm
Size	G	H	T	D	P	Unit
RMCA0402	0.157 ± 0.004 4.00 ± 0.10	0.079 ± 0.002 2.00 ± 0.05	0.018 ± 0.004 0.45 ± 0.10	0.059 +0.004/-0 1.50 +0.1/-0	0.079 ± 0.004 2.00 ± 0.10	inches
RMCA0603			0.024 ± 0.004 0.60 ± 0.10		0.157 ± 0.004 4.00 ± 0.10	inches
RMCA0805			0.030 ± 0.004 0.75 ± 0.10		0.157 ± 0.004 4.00 ± 0.10	inches
RMCA1206			0.030 ± 0.004 0.75 ± 0.10		0.157 ± 0.004 4.00 ± 0.10	inches
RMCA1210			0.030 ± 0.004 0.75 ± 0.10		0.157 ± 0.004 4.00 ± 0.10	inches

Embossed Tape Specifications



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
RMCA2512 (-HP and -UP)	0.134 ± 0.008 3.40 ± 0.20	0.264 ± 0.008 6.70 ± 0.20					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
RMCA2512					0.033 ± 0.006 0.85 ± 0.15		inches
RMCA2512_-HP RMCA2512_-UP					0.037 ± 0.006 0.95 ± 0.15		inches



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.

“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.

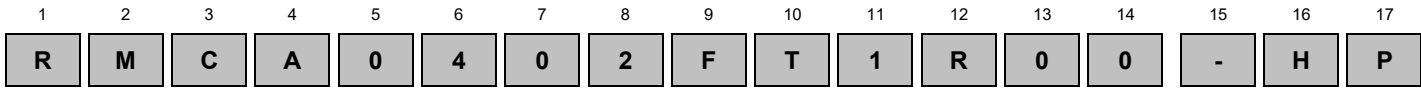
Compliance to “REACH”

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



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.		Code	Description
RMCA	Automotive Grade Thick Film Chip Resistors	0402	0.63	0.1	0.2	B	0.1%	T	7" Reel Paper Tape	0402	10000	3.9 ohm = 3R90 10 Kohm = 10K0 1.1 Mohm = 1M10 Zero ohm jumper = 0R00		-HP	High Power
		0603	0.1	0.125	0.33	D	0.5%			0603, 0805	5000			-UP	Ultra-high Power
		0805	0.125	0.25	0.5	F	1%			1206, 1210					
		1206	0.25	0.5	0.75	G	2%			2010, 2512	4000				
		1210	0.5	0.66	1	J	5%								
		2010	0.75	1	1.5	K	10%								
		2512	1	2	3	Z	Jumper								