

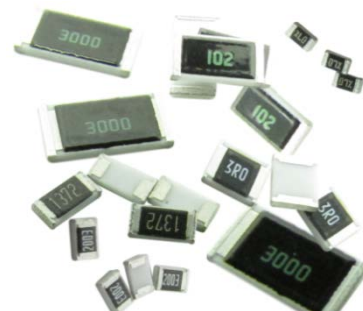
RMCF/RMCP Series

General Purpose Thick Film Standard Power and High Power Chip Resistor

Stackpole Electronics, Inc.

Resistive Product Solutions

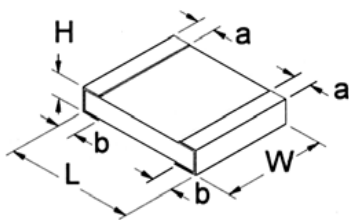
- Features:
- RMCF – standard power ratings
 - RMCP – high power ratings
 - Nickel barrier terminations standard
 - Power derating from 100% at 70°C to zero at +155°C
 - RMCF package sizes 0402 through 2512 are qualified to AEC-Q200
 - RoHS compliant



Electrical Specifications							
Type / Code	Power Rating (Watts) @ 70°C	Maximum Working Voltage (1)	Maximum Overload Voltage	Maximum Current	Resistance Temperature Coefficient	Ohmic Range (Ω) and Tolerance(2)	
						1%	5%
RMCF01005	0.03W	15V	30V	0.5 Amp	-200/+600 ppm/°C ± 250 ppm/°C	1 - 9.76 10 - 1M	
RMCF0201	0.05W	25V	50V	1 Amp	± 400 ppm/°C ± 200 ppm/°C	1 - 9.76 10 - 10M	
RMCF0402	0.063W	50V	100V	1 Amp	± 300 ppm/°C ± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C	0.2 - 0.59 0.604 - 9.76 10 - 1M	
RMCF0603	0.1W	75V	150V	1 Amp	± 600 ppm/°C ± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C	0.1 - 0.976 1 - 9.76 10 - 1M 1.02M - 10M	
RMCF0805	0.125W	150V	300V	2 Amp	± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C	1 - 9.76 10 - 1M 1.02M - 10M	
RMCF1206	0.25W	200V	400V	2 Amp	± 200 ppm/°C ± 100 ppm/°C ± 200 ppm/°C	1 - 9.76 10 - 1M 1.02M - 10M	
RMCF1210	0.33W ⁽³⁾	200V	400V	3 Amp	± 200 ppm/°C ± 400 ppm/°C ± 200 ppm/°C ± 100 ppm/°C	0.1 - 0.976 1 - 9.76 - 10 - 10M	
RMCF2010	0.75W	200V	400V	3 Amp	± 200 ppm/°C ± 400 ppm/°C ± 200 ppm/°C ± 100 ppm/°C	0.1 - 0.976 1 - 9.76 - 10 - 10M	
RMCF2512	1W	200V	400V	3 Amp	± 200 ppm/°C ± 400 ppm/°C ± 200 ppm/°C ± 100 ppm/°C	0.1 - 0.976 1 - 9.76 - 10 - 10M	
RMCP0402	0.125W	50V	100V	1 Amp	± 200 ppm/°C ± 100 ppm/°C	1 - 9.76 10 - 1M	
RMCP0603	0.25W	75V	150V	1 Amp			
RMCP0805	0.33W	150V	300V	2 Amp			
RMCP1206	0.33W	200V	400V	2 Amp			
RMCP1210	0.5W	200V	400V	3 Amp			
RMCP2010	1W	200V	400V	3 Amp			
RMCP2512	2W	250V	500V	3 Amp			

Notes: (1) Lesser of √PR or maximum working voltage.
 (2) Contact factory for extended ohmic values.
 (3) Power rating is 0.5W for ohmic values below 1KΩ

Mechanical Specifications



Type / Code	Average Unit Weight (mg)	L Body Length	W Body Width	H Body Height	a Top Termination	b Bottom	Unit
RMCF01005	0.07	0.016 ± 0.001 0.40 ± 0.02	0.008 ± 0.001 0.20 ± 0.02	0.005 ± 0.001 0.13 ± 0.02	0.004 ± 0.001 0.10 ± 0.03	0.004 ± 0.001 0.10 ± 0.03	inches mm
RMCF0201	0.16	0.024 ± 0.001 0.60 ± 0.03	0.012 ± 0.001 0.30 ± 0.03	0.009 ± 0.0004 0.23 ± 0.01	0.006 ± 0.002 0.15 ± 0.05	0.006 ± 0.002 0.15 ± 0.05	inches mm
RMCF0402	0.57	0.039 ± 0.004	0.020 ± 0.002	0.012 ± 0.004	0.008 ± 0.004	0.010 ± 0.006	inches
RMCP0402	0.62	1.00 ± 0.10	0.50 ± 0.05	0.30 ± 0.10	0.20 ± 0.10	0.25 ± 0.15	mm
RMCF0603	1.88	0.061 ± 0.006	0.031 ± 0.006	0.018 ± 0.004	0.012 ± 0.008	0.012 ± 0.008	inches
RMCP0603	2.04	1.55 ± 0.15	0.80 ± 0.15	0.45 ± 0.10	0.30 ± 0.20	0.30 ± 0.20	mm
RMCF0805	5.00	0.079 ± 0.008	0.049 ± 0.004	0.020 ± 0.006	0.014 ± 0.010	0.014 ± 0.010	inches
RMCP0805	4.37	2.00 ± 0.20	1.25 ± 0.10	0.50 ± 0.15	0.35 ± 0.25	0.35 ± 0.25	mm
RMCF1206	8.86	0.126 ± 0.010	0.063 ± 0.006	0.022 ± 0.006	0.020 ± 0.012	0.020 ± 0.012	inches
RMCP1206	8.95	3.20 ± 0.25	1.60 ± 0.15	0.55 ± 0.15	0.50 ± 0.30	0.50 ± 0.30	mm
RMCF1210	15.55	0.126 ± 0.010	0.098 ± 0.010	0.022 ± 0.006	0.020 ± 0.012	0.020 ± 0.012	inches
RMCP1210	15.96	3.20 ± 0.25	2.50 ± 0.25	0.55 ± 0.15	0.50 ± 0.30	0.50 ± 0.30	mm
RMCF2010	23.56	0.197 ± 0.008	0.098 ± 0.008	0.022 ± 0.006	0.024 ± 0.012	0.024 ± 0.014	inches
RMCP2010	24.24	5.00 ± 0.20	2.50 ± 0.20	0.55 ± 0.15	0.60 ± 0.30	0.60 ± 0.35	mm
RMCF2512	40.02	0.248 ± 0.008	0.126 ± 0.010	0.022 ± 0.006	0.024 ± 0.012	0.024 ± 0.014	inches
RMCP2512	39.45	6.30 ± 0.20	3.20 ± 0.25	0.55 ± 0.15	0.60 ± 0.30	0.60 ± 0.35	mm

Performance Characteristics

Test	Test Conditions (JIS C 5202)	Test Results
Short Time Overload	2.5x rated voltage for 5 seconds	± (2% + 0.1Ω)
Dielectric Withstanding Voltage	100 VAC, 1 minute	± (1% + 0.05Ω)
Resistance to Soldering Heat	260°C ±5°C, for 10 sec. ±0.5 sec. (Solder Bath)	± 1%
Solderability	235°C ±5°C, for 2 sec. ±0.5 sec. (Colophonium flux)	95% coverage, minimum
Temperature Cycle	-65°C: 30 min. 25°C: 2 to 3 min. 155°C: 30 min. 25°C: 2 to 3 min. (5 Cycles)	±(1% + 0.05Ω) Jumper (<0.05Ω)
Endurance (Damp load)	40°C ± 2°C, 90% RH, Rated Load 90 min. On, 30 min. Off for 1,000 hrs. -0hrs./+48hrs.	±(3% + 0.1Ω) Jumper (<0.05Ω)
Endurance (Rated load)	70°C ± 2°C, Rated Load 90 min. On, 30 min. Off for 1,000 hrs. -0hrs./+48hrs.	±(3% + 0.1Ω) Jumper (<0.05Ω)
Voltage Coefficient	1/10 rated voltage for 3 sec. max. then rated voltage for 3 sec. max.	±100 (ppm/V)
Robustness of Termination	Bend of 3mm for 5 ± 1 sec.	± (1% + 0.05 Ohm)

Operating Temperature Range: -55°C to +125°C (0201 size)
-55°C to +155°C (all others)

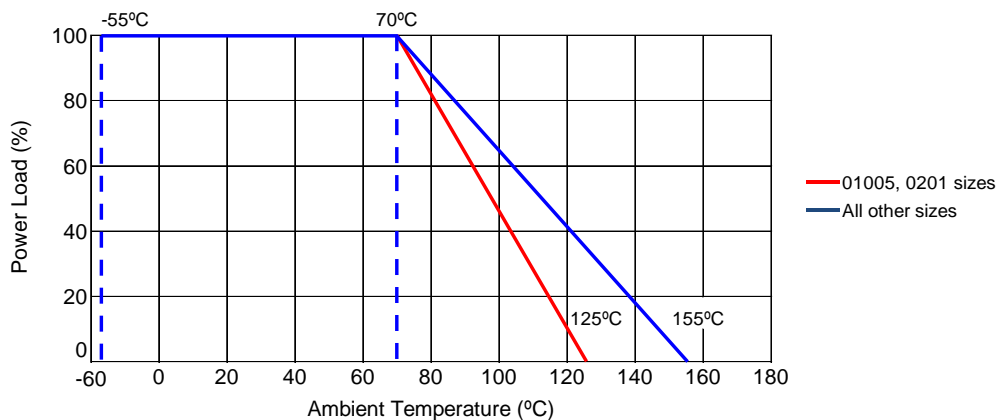
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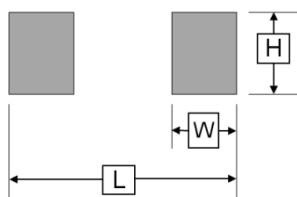
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Power Derating Curve



Standard Solder Land Pattern



SIZE	L	H	W	Unit
01005	0.020	0.008	0.006	inches
	0.50	0.20	0.15	mm
0201	0.031	0.017	0.011	inches
	0.79	0.43	0.28	mm
0402	0.051	0.024	0.016	inches
	1.30	0.60	0.40	mm
0603	0.079	0.035	0.020	inches
	2.00	0.90	0.50	mm
0805	0.102	0.051	0.028	inches
	2.60	1.30	0.70	mm
1206	0.150	0.067	0.035	inches
	3.80	1.70	0.90	mm
1210	0.150	0.098	0.035	inches
	3.80	2.50	0.90	mm
2010	0.232	0.098	0.039	inches
	5.90	2.50	1.00	mm
2512	0.283	0.126	0.039	inches
	7.20	3.20	1.00	mm

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Packaging (EIA Standard RS-481)

Reel Dimensions							
Nominal dimensions: Inches (mm)							
Reel Type / Tape	Wa	M	A	B	C	D	Unit
7" reel for 8mm tape	0.354 ± 0.020	7.008 ± 0.079	0.079 ± 0.020	0.531 ± 0.020	0.827 ± 0.020	2.362 ± 0.039	inches
	9.00 ± 0.50	178.00 ± 2.00	2.00 ± 0.50	13.50 ± 0.50	21.00 ± 0.50	60.00 ± 1.00	mm
10" reel for 8mm tape	0.394 ± 0.020	10.000 ± 0.079	0.079 ± 0.020	0.531 ± 0.020	0.827 ± 0.020	3.937 ± 0.039	inches
	10.00 ± 0.50	254.00 ± 2.00	2.00 ± 0.50	13.50 ± 0.50	21.00 ± 0.50	100.00 ± 1.00	mm

Taping Specifications (01005, 0201, 0402)									
Type	7" Reel Quantity	Typical Full Reel Weight (g)	Tape Width	A	B	W	E	F	Unit
RMCF01005	20,000 pc	127.3 ± 12.0	0.315 8.00	0.018 ± 0.001 0.45 ± 0.02	0.010 ± 0.001 0.25 ± 0.02	0.315 ± 0.012 8.00 ± 0.30	0.069 ± 0.004 1.75 ± 0.10	0.138 ± 0.002 3.50 ± 0.05	inches mm
RMCF0201	10,000 pc	97.2 ± 9.0	0.315 8.00	0.027 ± 0.002 0.68 ± 0.05	0.015 ± 0.001 0.38 ± 0.03	0.315 ± 0.004 8.00 ± 0.10	0.069 ± 0.004 1.75 ± 0.10	0.138 ± 0.002 3.50 ± 0.05	inches mm
RMCF0402	10,000 pc	94.5 ± 9.0	0.315 8.00	0.045 ± 0.002 1.15 ± 0.05	0.026 ± 0.002 0.65 ± 0.05	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
Type	T1	T2	P	P0	P1	Unit			
RMCF01005	0.012 ± 0.001 0.31 ± 0.03	0.007 ± 0.001 0.17 ± 0.03	0.079 ± 0.002 2.00 ± 0.05	0.157 ± 0.002 4.00 ± 0.05	0.079 ± 0.002 2.00 ± 0.05	inches mm			
RMCF0201	0.019 + 0.002 0.47 + 0.05	0.011 ± 0.001 0.28 ± 0.02	0.079 ± 0.002 2.00 ± 0.05	0.157 ± 0.002 4.00 ± 0.05	0.079 ± 0.002 2.00 ± 0.05	inches mm			
RMCF0402	0.020 + 0.004 0.50 + 0.10	0.016 ± 0.002 0.40 ± 0.05	0.079 ± 0.004 2.00 ± 0.10	0.157 ± 0.002 4.00 ± 0.05	0.079 ± 0.002 2.00 ± 0.05	inches mm			

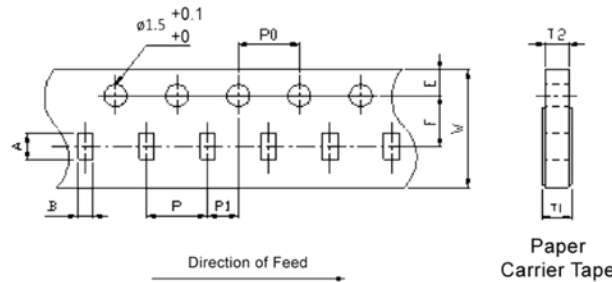
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Taping Specifications (0603, 0805, 1206, 1210)

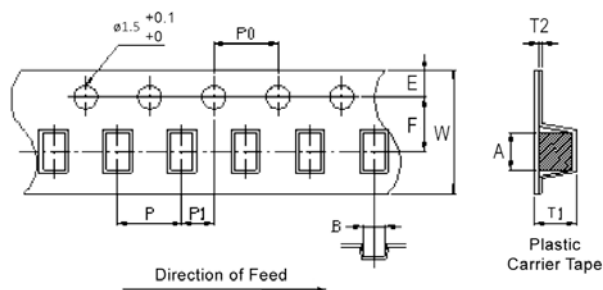


Type	7" Reel Quantity (1)	Typical Full Reel Weight (g)	Tape Width	A	B	W	E	F	Unit
RMCF0603	5,000 pc	118.3 ± 11.0	0.315 8.00	0.071 ± 0.004 1.80 ± 0.10	0.039 ± 0.004 1.00 ± 0.10	0.315 ± 0.008 8.00 ± 0.20	0.069 ± 0.004 1.75 ± 0.10	0.138 ± 0.002 3.50 ± 0.05	inches mm
RMCF0805	5,000 pc	139.2 ± 13.0	0.315 8.00	0.091 ± 0.004 2.30 ± 0.10	0.061 ± 0.004 1.55 ± 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
RMCF1206	5,000 pc	151.4 ± 15.0	0.315 8.00	0.138 ± 0.008 3.50 ± 0.20	0.075 ± 0.008 1.90 ± 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
RMCF1210	4,000 pc	175.7 ± 17.0	0.315 8.00	0.138 ± 0.008 3.50 ± 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

Type	T1	T2	P	P0	P1	Unit
RMCF0603	0.028 ± 0.004 0.70 ± 0.10	0.024 ± 0.004 0.60 ± 0.10	0.157 ± 0.004 4.00 ± 0.10	0.157 ± 0.002 4.00 ± 0.05	0.079 ± 0.002 2.00 ± 0.05	inches mm
RMCF0805	0.033 ± 0.004 0.85 ± 0.10	0.030 ± 0.004 0.75 ± 0.10	0.157 ± 0.004 4.00 ± 0.10	0.157 ± 0.002 4.00 ± 0.05	0.079 ± 0.002 2.00 ± 0.05	inches mm
RMCF1206	0.033 ± 0.004 0.85 ± 0.10	0.030 ± 0.004 0.75 ± 0.10	0.157 ± 0.004 4.00 ± 0.10	0.157 ± 0.002 4.00 ± 0.05	0.079 ± 0.002 2.00 ± 0.05	inches mm
RMCF1210	0.033 ± 0.004 0.85 ± 0.10	0.030 ± 0.004 0.75 ± 0.10	0.157 ± 0.004 4.00 ± 0.10	0.157 ± 0.002 4.00 ± 0.05	0.079 ± 0.002 2.00 ± 0.05	inches mm

Note: 10" and 13" reels are also available.

Taping Specifications (2010, 2512)



Type	7" Reel Quantity	Typical Full Reel Weight (g)	Tape Width	A	B	W	E	F	Unit
RMCF2010	4,000 pc	183.1 ± 18.0	0.472 12.00	0.217 ± 0.008 5.50 ± 0.20	0.110 ± 0.008 2.80 ± 0.20	0.472 ± 0.008 12.00 ± 0.20	0.069 ± 0.004 1.75 ± 0.10	0.217 ± 0.002 5.50 ± 0.05	inches mm
RMCF2512	4,000 pc	255.3 ± 25.0	0.472 12.00	0.264 ± 0.008 6.70 ± 0.20	0.134 ± 0.008 3.40 ± 0.20	0.472 ± 0.008 12.00 ± 0.20	0.069 ± 0.004 1.75 ± 0.10	0.217 ± 0.002 5.50 ± 0.05	inches mm

Type	T1	T2	P	P0	P1	Unit
RMCF2010	0.043 ± 0.006 1.10 ± 0.15	0.009 ± 0.006 0.23 ± 0.15	0.157 ± 0.004 4.00 ± 0.10	0.157 ± 0.002 4.00 ± 0.05	0.079 ± 0.002 2.00 ± 0.05	inches mm
RMCF2512	0.043 ± 0.006 1.10 ± 0.15	0.009 ± 0.006 0.23 ± 0.15	0.157 ± 0.004 4.00 ± 0.10	0.157 ± 0.002 4.00 ± 0.05	0.079 ± 0.002 2.00 ± 0.05	inches mm

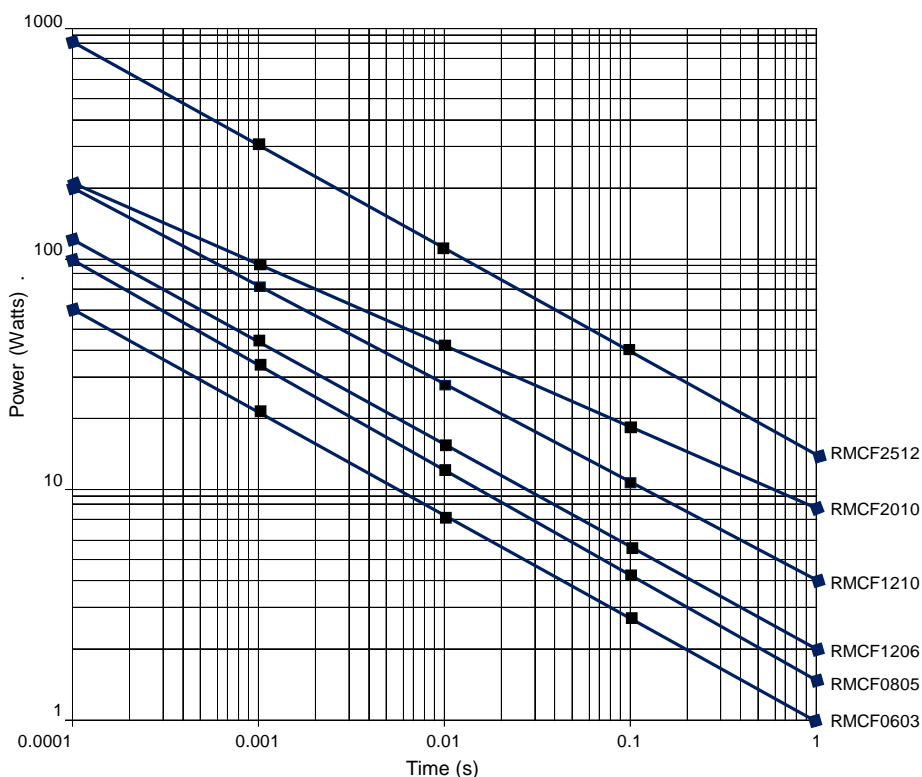
Note: Plastic carrier tape used for 2010 and 2512 sizes.

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Single Pulse Power



Size	Time (s)					Unit
	0.0001	0.001	0.01	0.1	1	
RMCF0603	60	21.5	7.6	2.8	1	Watts
RMCF0805	94	34	12	4.4	1.6	Watts
RMCF1206	120	43	15	5.6	2	Watts
RMCF1210	240	86	31	11	4	Watts
RMCF2010	210	96	41	18	8	Watts
RMCF2512	800	300	110	42	16	Watts

The data provided are for reference only. They are typical performance for this product but are not guaranteed. The actual pulse handling of each individual resistor may vary depending on a variety of factors including resistance tolerance and resistance value. Stackpole Electronics, Inc. assumes no liability for the use of this information. Customers should validate the performance of these products in their applications. Contact Stackpole marketing to discuss specific pulse application requirements.

Temperature Measurement of Resistor Surface

Description: The resistor surface generated temperature variation after applied rated voltage.
Products and power:

Stackpole P/N	RMCF0201	RMCF0402	RMCF0603	RMCF0805	RMCF1206	RMCF1210	RMCF2010	RMCF2512
R-V	15K	40.2K	57.6K	180K	182K	100K	100K	75K
Rated Power	1/20W	1/16W	1/10W	1/8W	1/4W	1/2W	3/4W	1W
Maximum Rated Voltage	25V	50V	75V	150V	200V	200V	200V	200V

Test method: Measure component surface temperature directly after the temperature stabilizes.

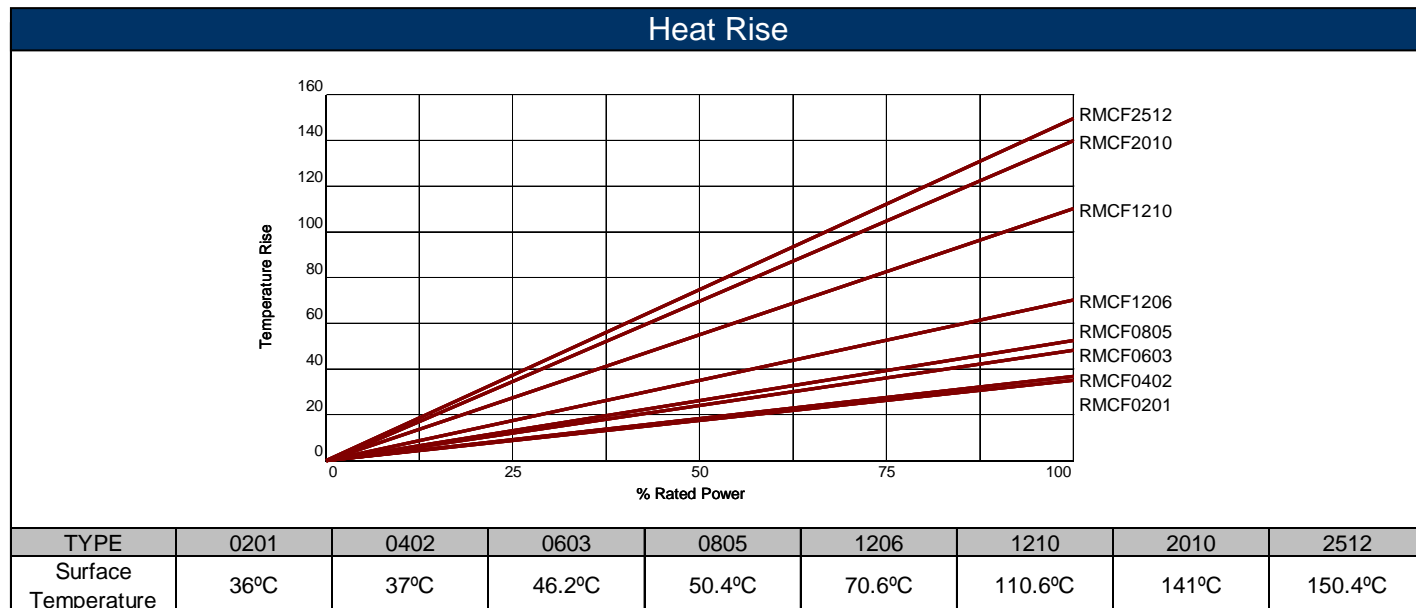
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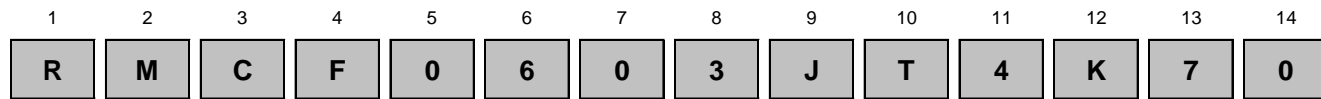
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Test result: As per table below:



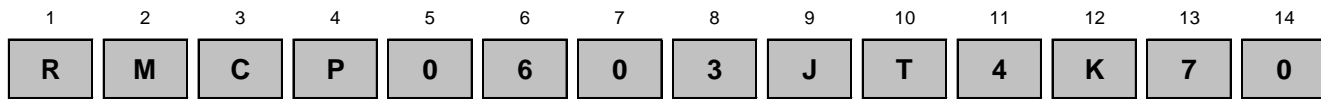
How to Order RMCF



Product Series		Size	Power	Tolerance			Packaging				Resistance Value		
RMCF	Thick Film Chip Resistors	01005	0.03W	Code	Tol	Value	Code	Description	Size	Quantity	Four characters with the multiplier used as the decimal holder. 0.1 ohm = R100 4.70 ohm = 4R70 10.0 Kohm = 10K0 1 Mohm = 1M00 Zero ohm jumper = 0R00		
		0201	0.05W	F	1%	E96, E24			T	7" Reel - Paper Tape		01005	20,000
		0402	0.063W	J	5%	E24						0201, 0402	10,000
		0603	0.1W	Z	jumper							0603, 0805, 1206	5,000
		0805	0.125W						1210	4,000			
		1206	0.25W						7" Reel - Plastic Tape	2010, 2512		4,000	
		1210	0.33W(*)					G	10" Reel - Paper Tape	0603, 0805, 1206		10,000	
		2010	0.75W					B	Bulk	0603, 0805, 1206		1,000	
		2512	1W										

(*) Power rating is 0.5W for Ohmic values below 1KΩ

How to Order RMCP



Product Series		Size	Power Rating	Tolerance			Packaging				Resistance Value	
RMCP	High Power	0402	0.125W	Code	Tol	Value	Code	Description	Size	Quantity	Four characters with the multiplier used as the decimal holder. 1 ohm = 1R00 10 Kohm = 10K0 1 Mohm = 1M00	
		0603	0.25W	F	1%	E96, E24			T	7" Reel Paper Tape		0402
		0805	0.33W	J	5%	E24	0603, 0805	5,000				
		1206	0.33W				1206, 1210					
		1210	0.5W							2010, 2512		4,000
		2010	1W					G	10" Reel Paper Tape	0603, 0805		10,000
		2512	2W							1206, 1210		
								2010	8,000			