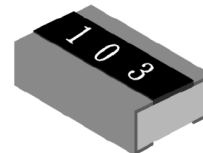


### Features:

- Small size and light weight
- Reliability and high quality
- Wider terminations provide higher power handling and more robust thermal performance
- RoHS compliant, REACH compliant, lead free, and halogen free
- AEC-Q200 compliant



Electrical Specifications					
Type/Code	Power Rating (W) @ 70°C	Maximum Working Voltage (V) <sup>(1)</sup>	Maximum Overload Voltage (V)	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance <sup>(2)</sup>
					1%, 5%
RMCW0508	0.75	200	400	±200	1 - 9.1
RMCW0612	0.75			±100	10 - 10M
RMCW1020	1			±200	1 - 9.1
RMCW1218	1			±100	10 - 10M
RMCW1225	2			±200	1 - 9.1
				±100	10 - 10M

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

(2) E96 resistance values may be available in 1% tolerance but will be subject to a high MOQ's - contact Stackpole

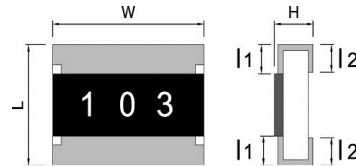
Electrical Specifications – RMCW-HP					
Type/Code	Power Rating (W) @ 70°C	Maximum Working Voltage (V) <sup>(1)</sup>	Maximum Overload Voltage (V)	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance <sup>(2)</sup>
					1%, 5%
RMCW0508-HP	1	200	400	± 150	1 - 9.1
RMCW0612-HP	1.5			± 100	10 - 1M
RMCW1020-HP	2			±100	1 - 10M
RMCW1218-HP	2			±100	1 - 10M
RMCW1225-HP	3			±100	1 - 10M

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

(2) E96 resistance values may be available in 1% tolerance but will be subject to a high MOQ's - contact Stackpole

Electrical Specifications - Jumper			
Type/Code	Jumper Rated Current (A)	Maximum Overload Current (A) < 1 second and 1 time	Jumper Resistance Value
RMCW0612	4	15	0.02 max.
RMCW1020	6	22	
RMCW1218	6	22	
RMCW1225	8	30	

### Mechanical Specifications



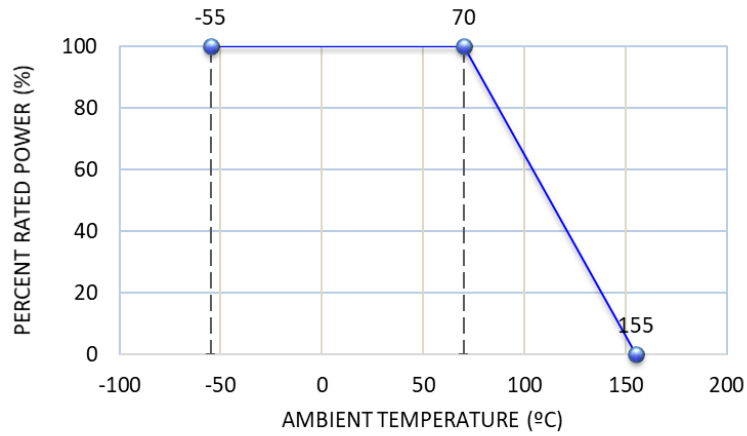
Type/Code	L	W	H	l1	l2	Unit
RMCW0508	0.049 ± 0.004	0.079 ± 0.004	0.022 ± 0.004	0.010 ± 0.008	0.020 ± 0.008	inches
	1.25 ± 0.10	2.00 ± 0.10	0.55 ± 0.10	0.25 ± 0.20	0.50 ± 0.20	mm
RMCW0612	0.063 ± 0.008	0.126 ± 0.008	0.022 ± 0.004	0.012 ± 0.008	0.020 ± 0.008	inches
	1.60 ± 0.20	3.20 ± 0.20	0.55 ± 0.10	0.30 ± 0.20	0.50 ± 0.20	mm
RMCW1020	0.098 ± 0.008	0.197 ± 0.008	0.022 ± 0.004	0.016 ± 0.008	0.030 ± 0.008	inches
	2.50 ± 0.20	5.00 ± 0.20	0.55 ± 0.10	0.40 ± 0.20	0.75 ± 0.20	mm
RMCW1218	0.122 ± 0.004	0.181 ± 0.004	0.022 ± 0.002	0.016 ± 0.008	0.020 ± 0.008	inches
	3.10 ± 0.10	4.60 ± 0.10	0.55 ± 0.05	0.40 ± 0.20	0.50 ± 0.20	mm
RMCW1225	0.126 ± 0.008	0.256 ± 0.008	0.022 ± 0.008	0.016 ± 0.008	0.030 ± 0.008	inches
	3.20 ± 0.20	6.50 ± 0.20	0.55 ± 0.20	0.40 ± 0.20	0.75 ± 0.20	mm
RMCW1225-HP	0.126 ± 0.008	0.256 ± 0.008	0.026 ± 0.008	0.016 ± 0.008	0.030 ± 0.008	inches
	3.20 ± 0.20	6.50 ± 0.20	0.65 ± 0.20	0.40 ± 0.20	0.75 ± 0.20	mm

### Performance Characteristics

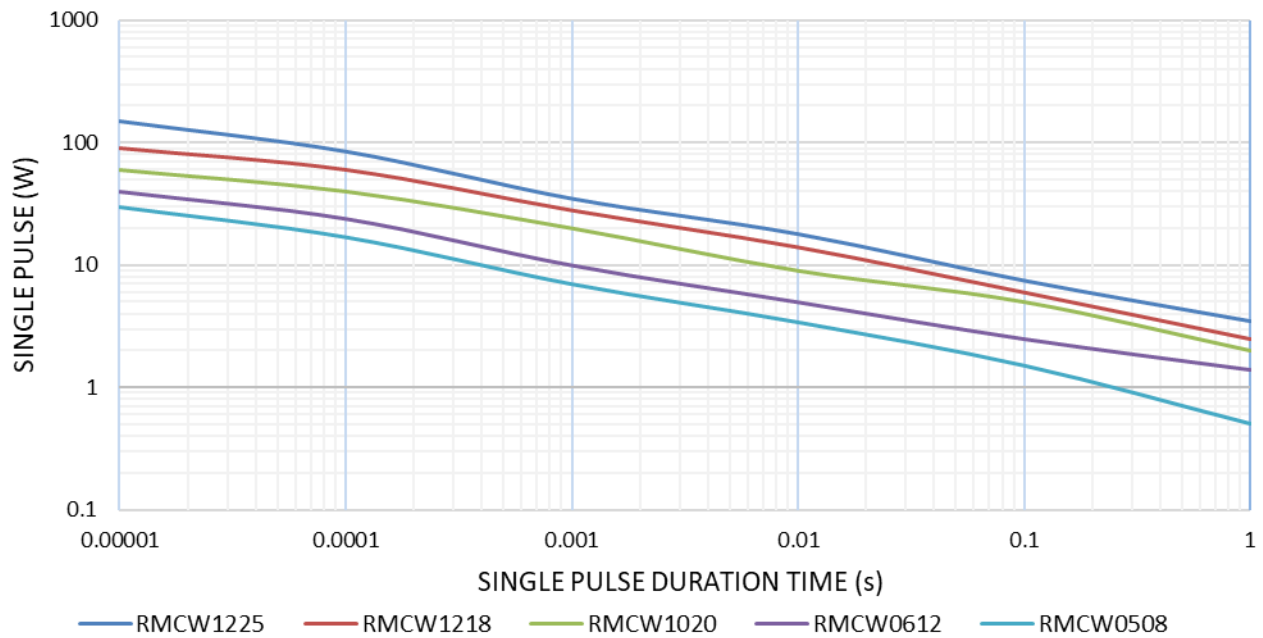
Test Item	Test Method	Test Specification		Test Condition
		1%	5%	
Temperature Coefficient of Resistance	JIS-C-5201-1 4.8 IEC-60115-1 4.8	Within the specified tolerance		At 25 / -55°C and 25°C / +155°C, 25°C is the reference temperature
Short Time Overload	JIS-C-5201-1 4.13 IEC-60115-1 4.13	± (1% + 0.05Ω)	± (2% + 0.1Ω)	6.25 times rated power or max. overload voltage whichever is less for 5 seconds, except for high power (-HP).
		Jumper: max 0.02 Ω after test		For high power (-HP): 5 times rated power or max. overload voltage whichever is less for 5 seconds
Leaching	JIS-C-5201-1 4.18 IEC-60068-2-58 8.2.1	Individual leaching area ≤ 5% Total leaching area ≤ 10%		260 ± 5°C for 30 seconds
Resistance to Soldering Heat	JIS-C-5201-1 4.18 IEC-60115-1 4.18	± (0.5% + 0.05Ω)	± (1% + 0.05Ω)	260 ± 5°C for 10 seconds
Rapid Change of Temperature	JIS-C-5201-1 4.19 IEC-60115-1 4.19	± (0.5% + 0.05Ω)	± (1% + 0.1Ω)	-55°C to +155°C, 5 cycles
Resistance to Solvent	JIS-C-5201-1 4.29	± (0.5% + 0.05Ω)	± (0.5% + 0.05Ω)	The tested resistor should be immersed into isopropyl alcohol of 20 ~ 25°C for 60 seconds. Then the resistor is left in room temperature for 48 hours
		Jumper: max 0.02 Ω after test		
Damp Heat with Load	JIS-C-5201-1 4.24 IEC-60115-1 4.24	± (1% + 0.05Ω)	± (2% + 0.05Ω)	40 ± 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"
		Jumper: max 0.02 Ω after test		
Load Life (Endurance)	JIS-C-5201-1 4.25 IEC-60115-1 4.25.1	± (1% + 0.05Ω)	± (3% + 0.1Ω)	70 ± 2°C, RCWV or Max. Working voltage whichever is less for 1000 hours with 1.5 hours "ON" and 0.5 hour "OFF"
		Jumper: max 0.02 Ω after test		
Insulation Resistance	JIS-C-5201-1 4.6 IEC-60115-1 4.6	≥ 10 GΩ		Apply 100 VDC for 1 minute
Bending Strength	JIS-C-5201-1 4.33 IEC-60115-1 4.33	± (1% + 0.05Ω)		Bending once for 5 seconds. D: 0508, 0612, 1020, 1218, 1225 = 2 mm

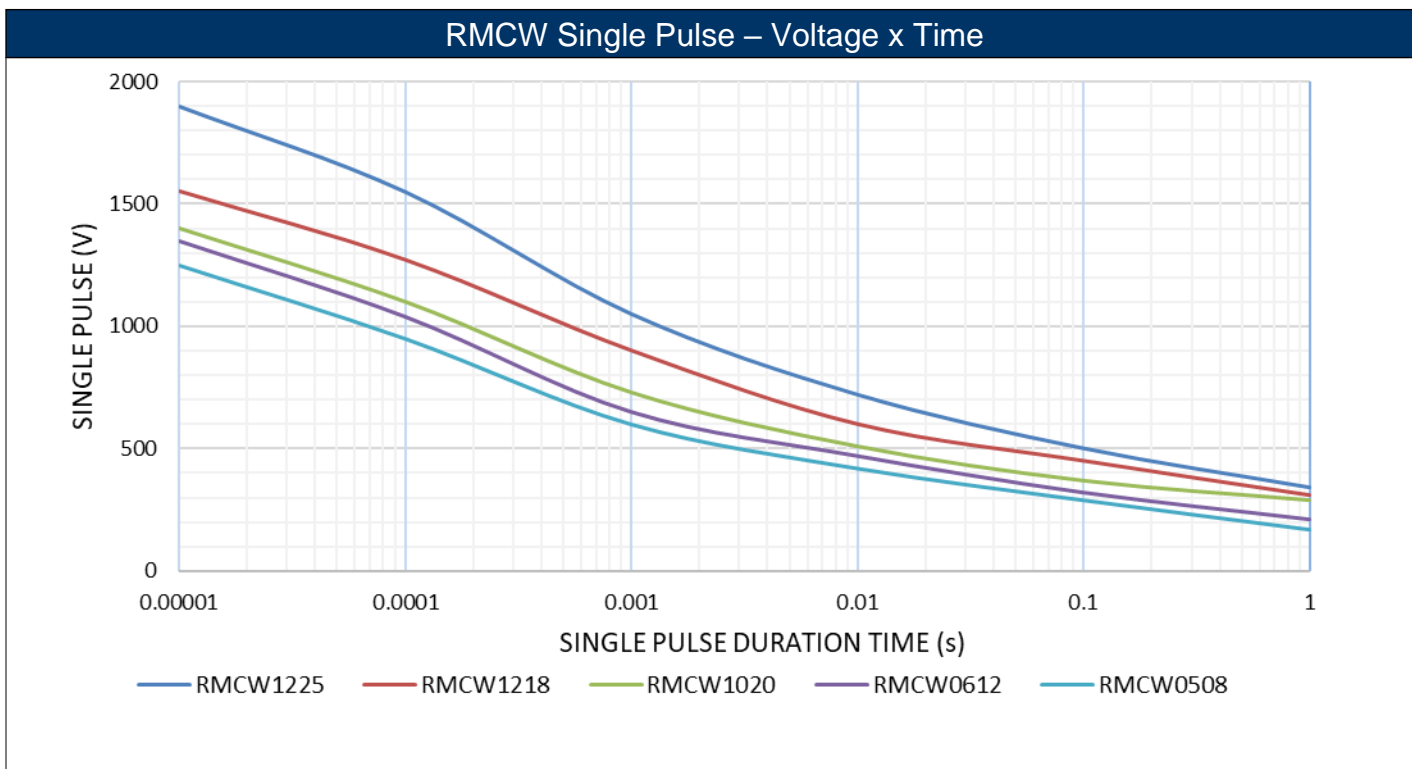
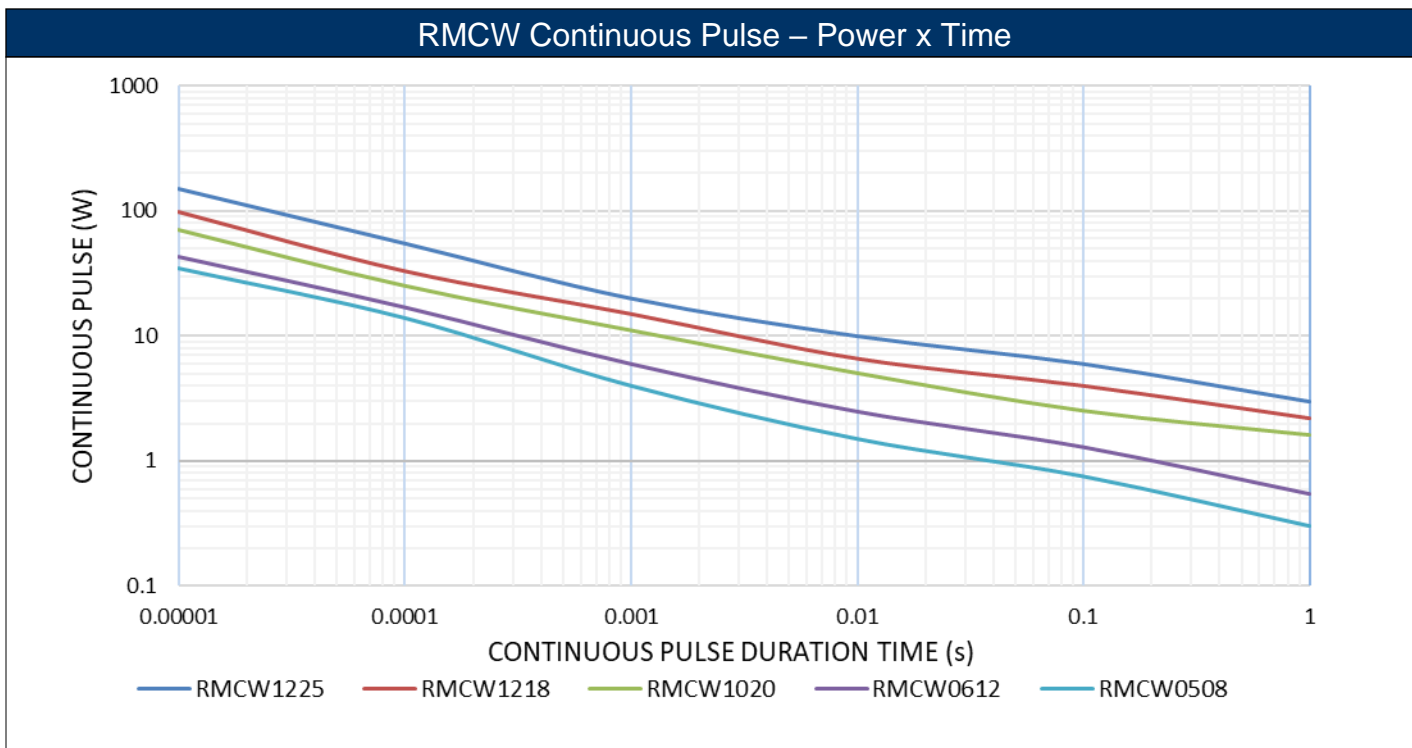
Operating temperature range is -55°C to 155°C

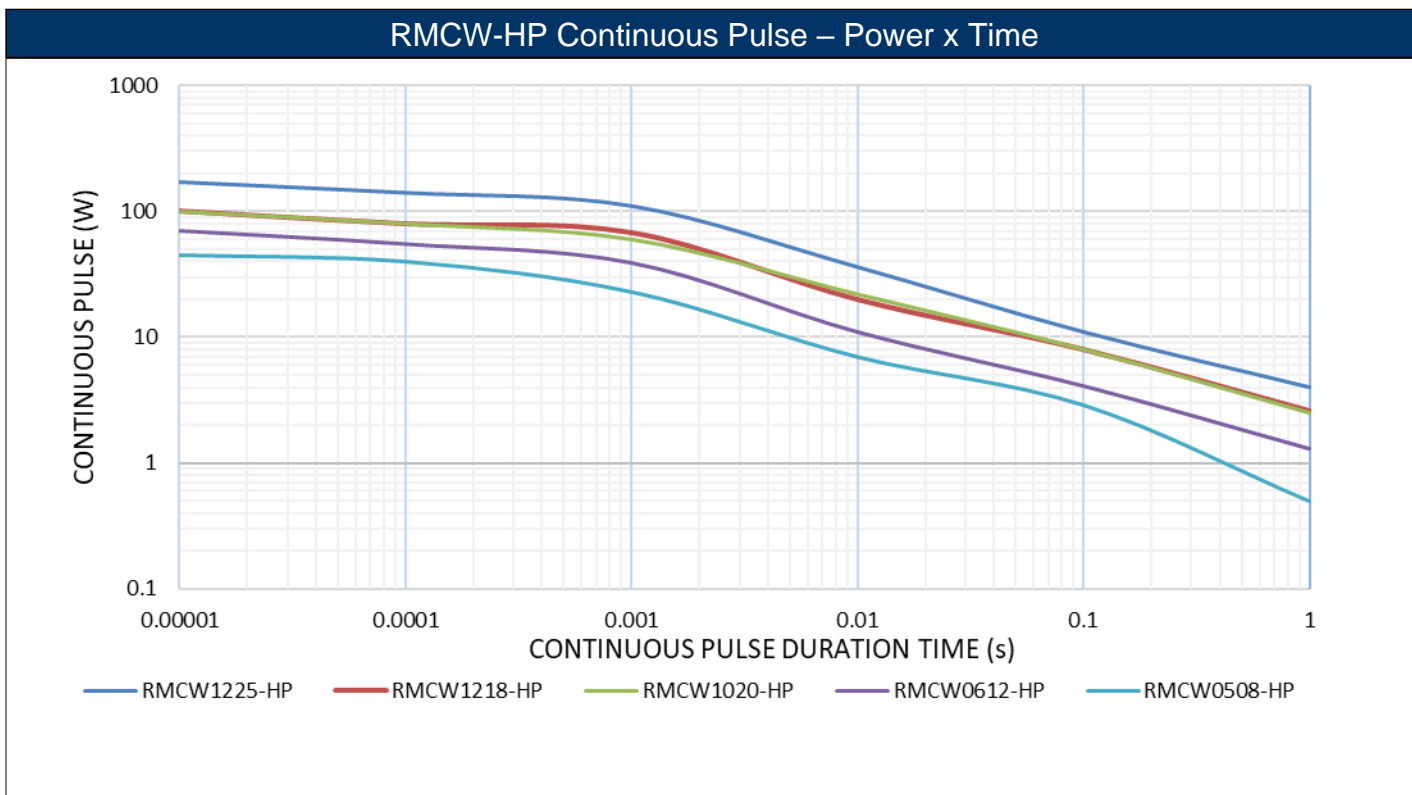
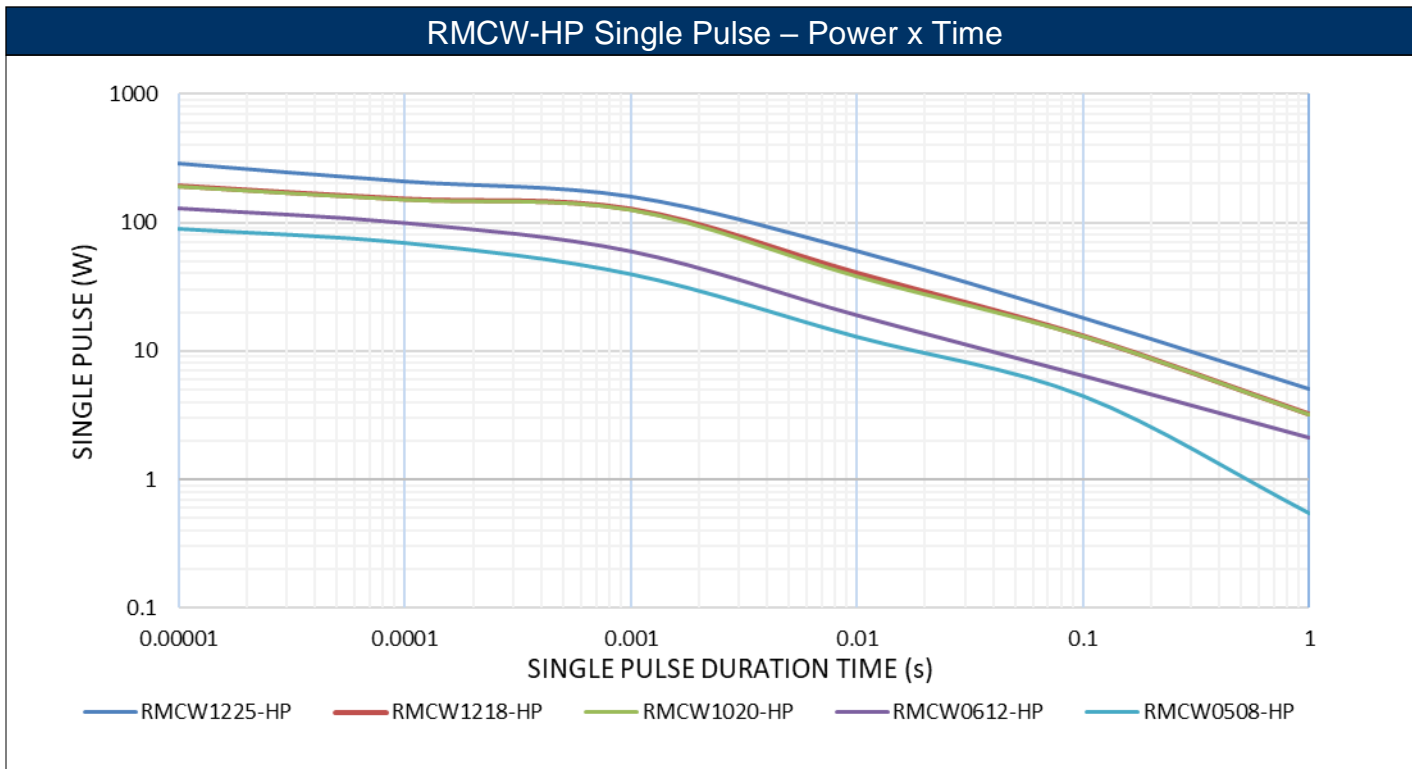
Power Derating Curve:

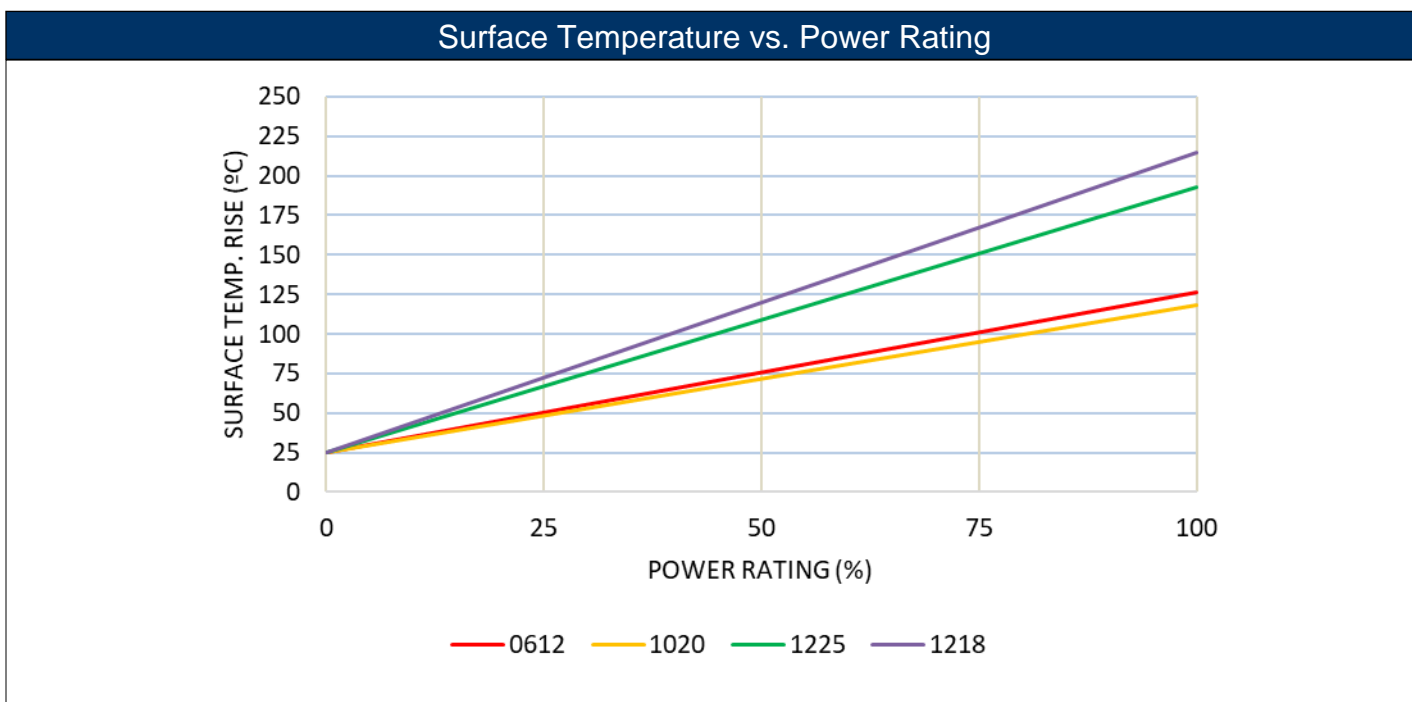
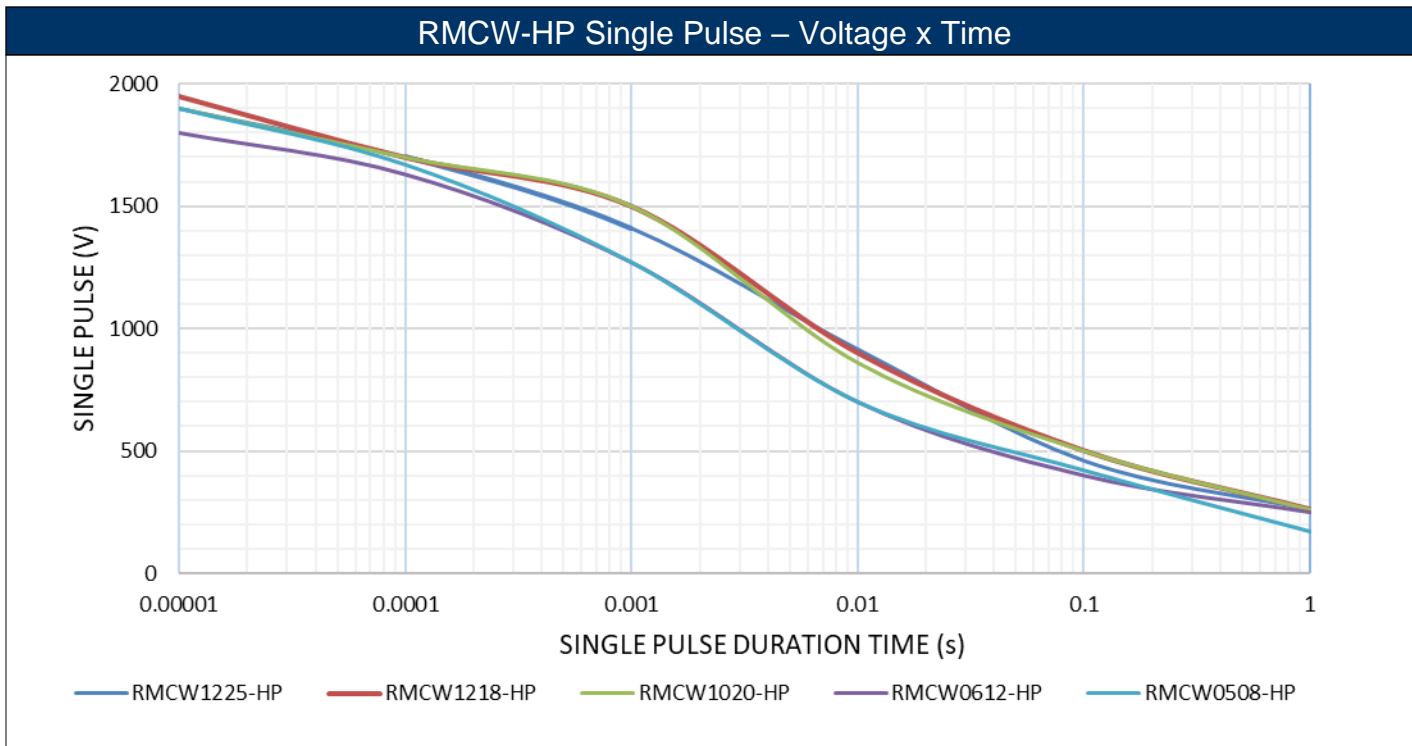


RMCW Single Pulse – Power x Time



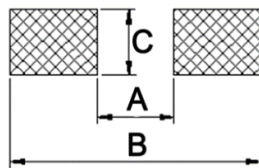






1. Resistance value used for each size was at or near critical value.
2. Used poor heat conduction PCB.
3. Applied full power for 10 minutes prior to measurement.
4. Data for reference only. Actual performance under customer conditions may vary.

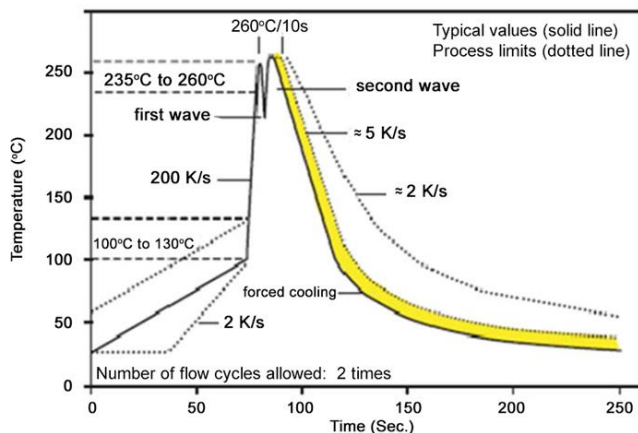
### Recommended Pad Layouts



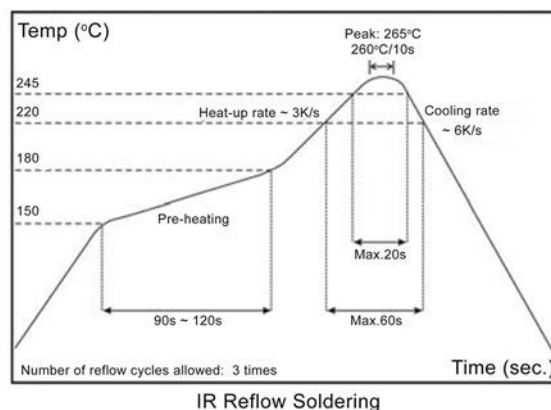
Type/Code	A	B	C	Unit
RMCW0508	0.016	0.071	0.079	inches
	0.40	1.80	2.00	mm
RMCW0612	0.024	0.114	0.126	inches
	0.60	2.90	3.20	mm
RMCW1020	0.030	0.134	0.197	inches
	0.75	3.40	5.00	mm
RMCW1218	0.080	0.167	0.189	inches
	2.04	4.24	4.80	mm
RMCW1225	0.033	0.146	0.252	inches
	0.85	3.70	6.40	mm

### Recommended Customer Soldering Parameters

#### Wave Solder Temperature Condition



#### Solder Reflow Temperature Condition



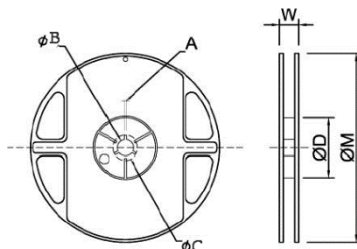
Rework temperature (hot air equipment): 350°C, 3 ~ 5 seconds

Recommended reflow methods:

- IR, vapor phase oven, hot air oven
- If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

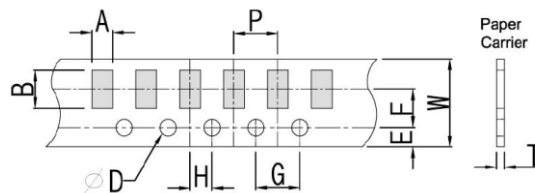


### Reel Specifications



Type/Code	Reel		A	B	C	D	W	M	Unit
	Size	Quantity							
0508 and 0612	7"	5000	0.079 ± 0.020	0.531 ± 0.039	0.827 ± 0.039	2.362 ± 0.039	0.453 ± 0.079	7.008 ± 0.079	inches
			2.00 ± 0.50	13.50 ± 1.00	21.00 ± 1.00	60.00 ± 1.00	11.50 ± 2.00	178.00 ± 2.00	mm
1020, 1218, 1225	7"	4000	0.079 ± 0.020	0.531 ± 0.039	0.827 ± 0.039	2.362 ± 0.039	0.630 ± 0.079	7.008 ± 0.079	inches
			2.00 ± 0.50	13.50 ± 1.00	21.00 ± 1.00	60.00 ± 1.00	16.00 ± 2.00	178.00 ± 2.00	mm

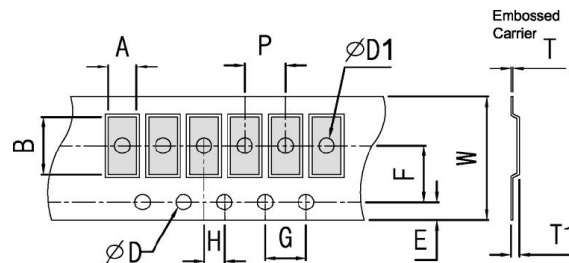
### Packaging Specifications – Paper Tape



Type/Code	A	B	W	E	F	Unit
RMCW0508	0.059 ± 0.006	0.089 ± 0.006	0.315 ± 0.008	0.069 ± 0.004	0.138 ± 0.002	inches
	1.50 ± 0.15	2.25 ± 0.15	8.00 ± 0.20	1.75 ± 0.10	3.50 ± 0.05	mm
	G	H	T	D	P	Unit
RMCW0508	0.157 ± 0.004	0.079 ± 0.002	0.030 ± 0.004	0.059 +0.004 / -0	0.157 ± 0.004	inches
	4.00 ± 0.10	2.00 ± 0.05	0.75 ± 0.10	1.50 +0.10 / -0	4.00 ± 0.10	mm
Type/Code	A	B	W	E	F	Unit
RMCW0612	0.075 ± 0.008	0.138 ± 0.008	0.315 ± 0.008	0.069 ± 0.004	0.138 ± 0.002	inches
	1.90 ± 0.20	3.50 ± 0.20	8.00 ± 0.20	1.75 ± 0.10	3.50 ± 0.05	mm
	G	H	T	D	P	Unit
RMCW0612	0.157 ± 0.004	0.079 ± 0.002	0.030 ± 0.004	0.059 +0.004 / -0	0.157 ± 0.004	inches
	4.00 ± 0.10	2.00 ± 0.05	0.75 ± 0.10	1.50 +0.10 / -0	4.00 ± 0.10	mm



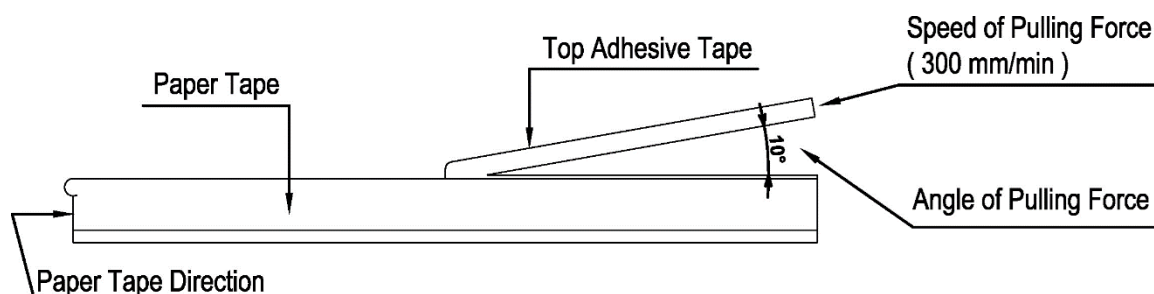
### Packaging Specifications – Plastic Tape



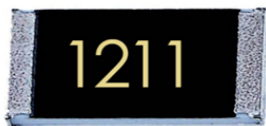
Type/Code	A	B	W	E	F	G	Unit
RMCW1020	0.110 ± 0.008 2.80 ± 0.20	0.220 ± 0.008 5.60 ± 0.20	0.472 ± 0.004 12.00 ± 0.10	0.069 ± 0.004 1.75 ± 0.10	0.217 ± 0.002 5.50 ± 0.05	0.157 ± 0.004 4.00 ± 0.10	inches mm
RMCW1225	0.134 ± 0.008 3.40 ± 0.20	0.264 ± 0.008 6.70 ± 0.20	0.472 ± 0.004 12.00 ± 0.10	0.069 ± 0.004 1.75 ± 0.10	0.217 ± 0.002 5.50 ± 0.05	0.157 ± 0.004 4.00 ± 0.10	inches mm
RMCW1225-HP	0.134 ± 0.008 3.40 ± 0.20	0.264 ± 0.008 6.70 ± 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
RMCW1218	0.130 ± 0.008 3.30 ± 0.20	0.181 ± 0.008 4.60 ± 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
Type/Code	H	T	D	D1	T1	P	Unit
RMCW1020	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
RMCW1225	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
RMCW1225-HP	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	0.039 ± 0.006 1.00 ± 0.15	0.157 ± 0.004 4.00 ± 0.10	inches mm
RMCW1218	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

### Peel Force of Top Cover Tape

Top adhesive peel off strength: 10~70g



### Part Marking Instructions



**1% Marking**  
The nominal resistance is marked on the surface of the overcoating with the use of 4 digit markings. 0201 and 0402 are not marked.



**5% Marking**  
The nominal resistance is marked on the surface of the overcoating with the use of 3 digit markings. 0201 and 0402 are not marked.

For shared E24/E96 values, 1% tolerance product may be marked with three-digit marking instead of the standard four-digit marking for all other E96 values. All E24 values available in 1% tolerance are also marked with three-digit marking.

### Marking Instructions for 0603 1% Chip Resistors (per EIA-J)

A two-digit 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 represents a specific multiplier as follows:

Z = 0.01	A = 10	D = 10,000
Y = 0.1	B = 100	E = 100,000
X = 1	C = 1,000	F = 1,000,000

EXAMPLE:

Chip Marking	Explanation	Value
01B	01 means 10.0 and B = 100	10.0 x 100 = 1 Kohm
25C	25 means 17.8 and C = 1,000	17.8 x 1,000 = 17.8 Kohm
93D	93 means 90.9 and D = 10,000	90.9 x 10,000 = 909 Kohm

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

## 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)
RMCW	Wide Termination Thick Film Chip Resistors	SMD	YES <sup>(1)</sup>	100% Matte Sn over Ni	Always	Always

Note (1): RoHS compliant by means of exemption 7c-l

## “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

<b>R</b>	<b>M</b>	<b>C</b>	<b>W</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>2</b>	<b>J</b>	<b>T</b>	<b>1</b>	<b>0</b>	<b>R</b>	<b>0</b>	<b>-</b>	<b>H</b>	<b>P</b>
Product Series		Size and W			Tolerance			Packaging				Resistance Value		Special		
RMCW	Wide Termination Thick Film Chip Resistor	Code	Std	-HP	Code	Tol	Value(*)	Code	Description	Size	Quantity	Four characters with the multiplier used as the decimal holder. 1 ohm = 1R00 10 ohm = 10R0 100 Kohm = 100K 10 Mohm = 10M0		Code	Description	
		0508	0.75	1	F	1%	E24	T	7" Reel Paper Tape	0508, 0612	5000			blank	Standard	
		0612	0.75	1.5	J	5%			7" Reel Plastic Tape	1020, 1218, 1225	4000			-HP	High Power	
		1020	1	2	Z		Jumper									
		1218	1	2												
		1225	2	3												

(\*) E96 resistance values may be available in 1% tolerance and will be subject to higher MOQ's. Contact Stackpole.