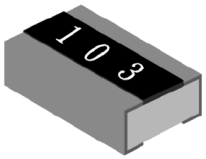

Features:

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

Electrical Specifications

Type/Code	Power Rating (W) @ 70°C	Maximum Working Voltage (V)[1]	Maximum Overload Voltage (V)	TCR (ppm/ºC)	Ohmic Range (Ω) and Tolerance[2] 1%, 5%
RMCW0612	0.75	200	400	±200	1 - 9.1
				±100	10 - 10M
RMCW1020	1			±200	1 - 9.1
				±100	10 - 10M
RMCW1218	1			±200	1 - 9.1
				±100	10 - 10M
RMCW1225	2			±200	1 - 9.1
				±100	10 - 10M
RMCW2030	3			±200	1 - 9.1
				±100	10 - 10M

(1) Lesser of $\sqrt{P*R}$ 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)[1]	Maximum Overload Voltage (V)	TCR (ppm/ºC)	Ohmic Range (Ω) and Tolerance[2] 1%, 5%
RMCW0612_-HP	1.5	200	400	±100	1 - 9.1 10 - 10M
RMCW1020_-HP	2				
RMCW1218_-HP	2				
RMCW1225_-HP	3				

(1) Lesser of $\sqrt{P*R}$ 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	
RMCW2030	10	35	

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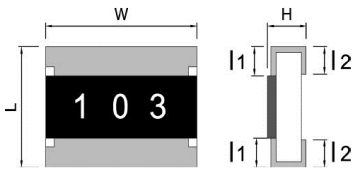
Mechanical Specifications



Type/Code	L	W	H	I1	I2	Unit
RMCW0612	0.063 ± 0.008 1.60 ± 0.20	0.126 ± 0.008 3.20 ± 0.20	0.022 ± 0.004 0.55 ± 0.10	0.012 ± 0.008 0.30 ± 0.20	0.020 ± 0.008 0.50 ± 0.20	inches mm
RMCW1020	0.098 ± 0.008 2.50 ± 0.20	0.197 ± 0.008 5.00 ± 0.20	0.022 ± 0.004 0.55 ± 0.10	0.016 ± 0.008 0.40 ± 0.20	0.030 ± 0.008 0.75 ± 0.20	inches mm
RMCW1218	0.122 ± 0.004 3.10 ± 0.10	0.181 ± 0.004 4.60 ± 0.10	0.022 ± 0.002 0.55 ± 0.05	0.016 ± 0.008 0.40 ± 0.20	0.020 ± 0.008 0.50 ± 0.20	inches mm
RMCW1225	0.126 ± 0.008 3.20 ± 0.20	0.256 ± 0.008 6.50 ± 0.20	0.022 ± 0.008 0.55 ± 0.20	0.016 ± 0.008 0.40 ± 0.20	0.030 ± 0.008 0.75 ± 0.20	inches mm
RMCW2030	0.201 ± 0.004 5.10 ± 0.10	0.299 ± 0.004 7.60 ± 0.10	0.047 ± 0.004 1.20 ± 0.10	0.031 ± 0.008 0.80 ± 0.20	0.031 ± 0.008 0.80 ± 0.20	inches 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)	2.5 times RCWV or max. overload voltage whichever is less for 5 seconds
		Jumper: max 0.02 Ω after test		Jumper: overload current for 5 seconds 0612=10A, 1020=15A, 1218=15A, 1225=20A, 2030=25A
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)	± (1% + 0.05Ω)	Bending once for 5 seconds. D: 0612, 1020, 1218, 1225, 2030 = 2 mm

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

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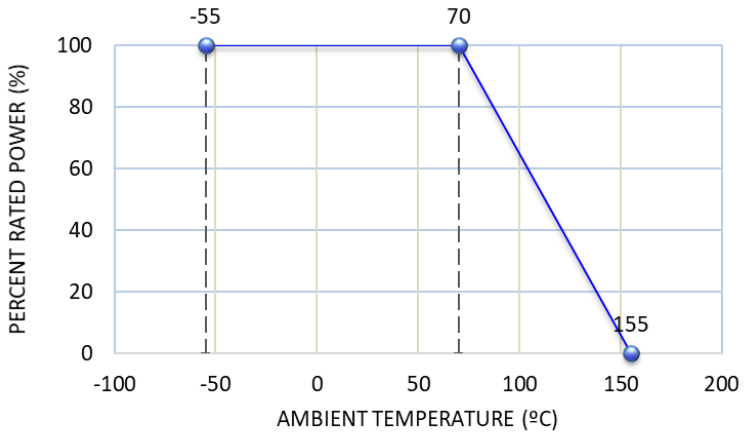
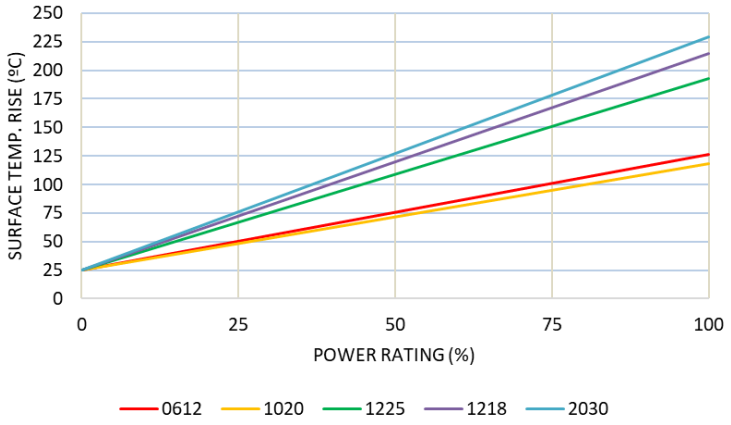
Power Derating Curve:

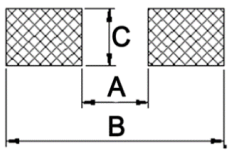


Surface Temperature vs. Power Rating



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
RMCW0612	0.024 0.60	0.114 2.90	0.126 3.20	inches mm
RMCW1020	0.030 0.75	0.134 3.40	0.197 5.00	inches mm
RMCW1218	0.080 2.04	0.167 4.24	0.189 4.80	inches mm
RMCW1225	0.033 0.85	0.146 3.70	0.252 6.40	inches mm
RMCW2030	0.138 3.50	0.295 7.50	0.307 7.80	inches mm

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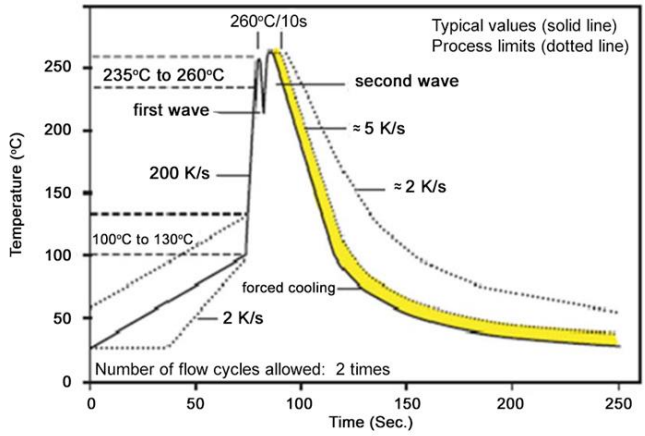
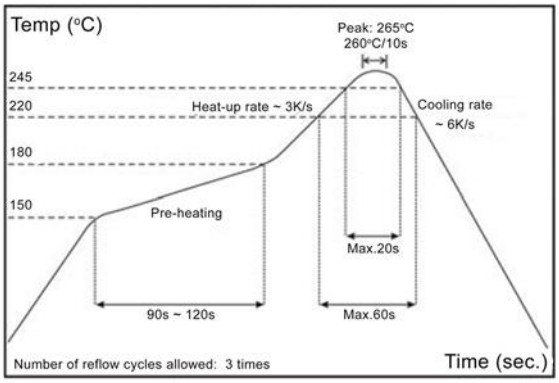
Recommended Customer Soldering Parameters

Wave Solder Temperature Condition



Solder Reflow Temperature Condition

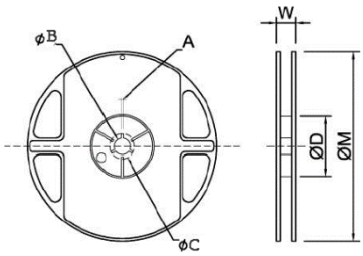


IR Reflow Soldering

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							
RMCW0612	7"	5000	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
RMCW1020		4000	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	0.630 ± 0.079 16.00 ± 2.00	7.008 ± 0.079 178.00 ± 2.00	inches mm
RMCW1218									
RMCW1225									
RMCW2030		1000	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	0.748 ± 0.079 19.00 ± 2.00	7.008 ± 0.079 178.00 ± 2.00	inches mm

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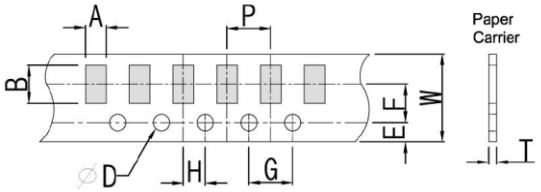
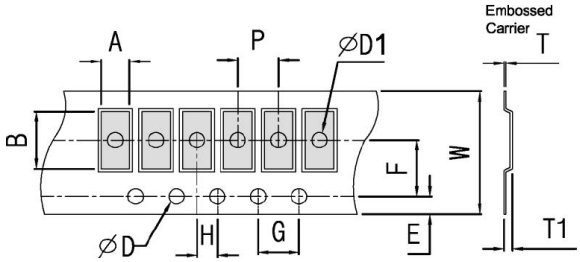
Packaging Specifications – Paper Tape



Type/Code	A	B	W	E	F	Unit
RMCW0612	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
	G	H	T	D	P	Unit
	0.157 ± 0.004 4.00 ± 0.10	0.079 ± 0.002 2.00 ± 0.05	0.030 ± 0.004 0.75 ± 0.10	0.059 +0.004 / -0 1.50 +0.10 / -0	0.157 ± 0.004 4.00 ± 0.10	inches mm

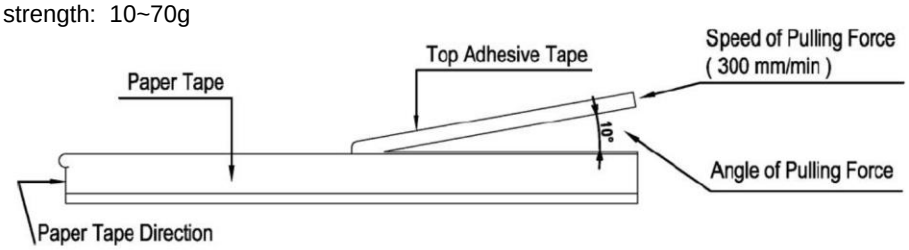
Packaging Specifications – Embossed Tape



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					inches mm
RMCW1218	0.130 ± 0.008 3.30 ± 0.20	0.181 ± 0.008 4.60 ± 0.20					inches mm
RMCW2030	0.217 ± 0.008 5.50 ± 0.20	0.311 ± 0.008 7.90 ± 0.20	0.630 ± 0.004 16.00 ± 0.10	0.069 ± 0.004 1.75 ± 0.10	0.295 ± 0.002 7.50 ± 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							inches mm
RMCW1218							inches mm
RMCW2030	0.079 ± 0.002 2.00 ± 0.05	0.010 ± 0.004 0.25 ± 0.10	0.059 +0.004 / -0 1.50 +0.10 / -0	0.059 ± 0.004 1.50 ± 0.10	0.051 ± 0.004 1.30 ± 0.10	0.315 ± 0.008 8.00 ± 0.20	inches mm

Peel Force of Top Cover Tape

Top adhesive peel off strength: 10~70g



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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(1)	100% Matte Sn over Ni	Always	Always

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

"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

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
R	M	C	W	0	6	1	2	J	T	1	0	R	0	-	H	P

Product Series	
RMCW	Wide Termination Thick Film

Size and W		
Code	Std	-HP
0612	0.75	1.5
1020	1	2
1218	1	2
1225	2	3
2030	3	NA

Tolerance		
Code	Tol	Value(*)
F	1%	E24
J	5%	
Z	Jumper	

Packaging			
Code	Description	Size	Quantity
T	7" Reel Paper Tape	0612	5000
		1020, 1218, 1225	4000
		2030	1000

Resistance Value
Four characters with the multiplier used as the decimal holder.
1 ohm = 1R00
100 ohm = 100R
10 Kohm = 10K0
10 Mohm = 10M0

Special	
Code	Description
-HP	High Power

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

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