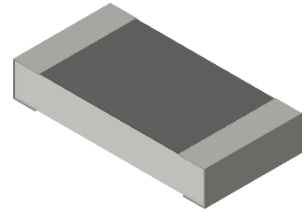


Features:

- Small size and light weight
- Highly reliable multilayer electrode construction
- Compatible with all soldering process
- 100% CCD inspection
- RoHS compliant, REACH compliant, and halogen free
- AEC-Q200 qualified



Electrical Specifications

Type/Code	Power Rating @ 105°C (W)	Maximum Working Voltage (V)	Maximum Overload Voltage (V)	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance		
					± 0.5%	± 1%	± 5%
RMHT0402	0.1	50	100	± 100	10 - 300K		
				± 200	-	1 - 9.76	1 - 9.1
RMHT0603	0.125	75	150	± 100	10 - 300K		
	0.25	75	150	± 200	1 - 9.76		1 - 9.1
RMHT0805	0.5	400	600	± 100	10 - 300K		
				± 200	-	1 - 9.76	1 - 9.1

Max Working Voltage: $\sqrt{P \cdot R}$ or max working voltage listed above, whichever is lower.

Overload Voltage: $2.5 \cdot \sqrt{P \cdot R}$ or max overload voltage listed above, whichever is lower.

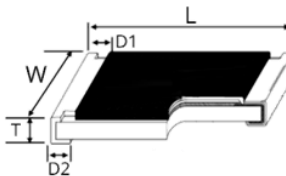
Operating Temperature Range is -55 to +175°C

Electrical Specifications - Jumper

Type/Code	Power Rating	Rated Current	Overload Current	Ohmic Range (Ω)
RMHT0402	0.1	1A	2A	0 Ω (≤ 50 mΩ)
RMHT0603	0.125	1A	2A	0 Ω (≤ 50 mΩ)
RMHT0805	0.5	2A	4A	0 Ω (≤ 50 mΩ)

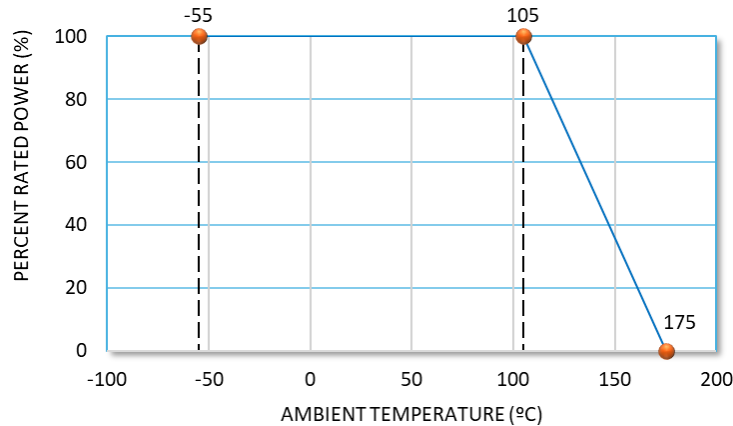
Operating Temperature Range is -55 to +175°C

Mechanical Specifications



Type/Code	Typical Unit Weight (mg)	L Body Length	W Body Width	T Body Height	D1 Top Termination	D2 Bottom Termination	Unit
RMHT0402	0.60	0.039 ± 0.002	0.020 ± 0.002	0.014 ± 0.002	0.007 ± 0.004	0.010 ± 0.004	inches
		1.00 ± 0.05	0.50 ± 0.05	0.35 ± 0.05	0.18 ± 0.10	0.25 ± 0.10	mm
RMHT0603	2.0	0.063 ± 0.004	0.031 ± 0.004	0.018 ± 0.004	0.012 ± 0.008	0.012 ± 0.008	inches
		1.60 ± 0.10	0.80 ± 0.10	0.45 ± 0.10	0.30 ± 0.20	0.30 ± 0.20	mm
RMHT0805	4.4	0.079 ± 0.004	0.049 ± 0.004	0.020 ± 0.004	0.014 ± 0.008	0.016 ± 0.008	inches
		2.00 ± 0.10	1.25 ± 0.10	0.50 ± 0.10	0.35 ± 0.20	0.40 ± 0.20	mm

Power Derating Curve:



Performance Characteristics				
Test	Test Method	≤ 5%	Jumper	Test Condition
Temperature Coefficient of	JIS-C-5201-1 4.8 IEC-60115-1 4.8	Refer to Electrical Specifications table		At 25°C/+175°C, 25°C is the reference temperature
Short Time Overload	JIS-C-5201-1 4.13 IEC-60115-1 4.13	$\Delta R \pm (2\% + 0.05\Omega)$	< 50 mΩ	0402/0603: RCWV*2.5 or Max. Overload Voltage whichever is lower for 5 seconds 0805: RCWV*1.77 or Max. Overload Voltage whichever is lower for 5 seconds
Endurance	JIS-C-5201-1 4.25 IEC-60115-1 4.25.1	$\Delta R \pm (3\% + 0.1\Omega)$	< 50 mΩ	105 ± 2°C, RCWV for 1000 hours with 1.5 hours "ON" and 0.5 hour "OFF"
Operational Life	MIL-STD-202 Method 108	$\Delta R \pm (1\% + 0.1\Omega)$	< 100 mΩ	Condition D Steady State TA=125°C at derated power. Measurement at 24 ± 4 hours after test conclusion.
Biased Humidity	MIL-STD-202 Method 103	$\Delta R \pm (3\% + 0.1\Omega)$	< 50 mΩ	1000 hours; 85°C / 85% RH, 10% of operating power (≤ 100 V)
High Temperature Exposure	MIL-STD-202 Method 108	$\Delta R \pm (1\% + 0.05\Omega)$	< 50 mΩ	at +175°C for 1000 hours
Resistance to Soldering Heat	MIL-STD-202 Method 210	$\Delta R \pm (1\% + 0.05\Omega)$	< 50 mΩ	270 ± 5°C for 10 seconds
Temperature Cycling	JESD22 Method JA-104	$\Delta R \pm (1\% + 0.05\Omega)$	< 50 mΩ	-55°C to +175°C, 1000 cycles
Insulation Resistance	JIS-C-5201-1 4.6 IEC-60115-1 4.6	≥ 10 G		Max. Overload Voltage for 1 minute
Bending Strength (Board Flex)	AEC-Q200-005	$\Delta R \pm (1\% + 0.1\Omega)$	< 50 mΩ	Bending once for 60 seconds, 3 mm
Solderability	JIS-C-5201-1 4.17 IEC-60115-1 4.17 J-STD-002	95% min. coverage		245 ± 5°C for 3 seconds
Voltage Proof	JIS-C-5201-1 4.7 IEC-60115-1 4.7	No breakdown or flashover		1.42 times Max. Operating Voltage for 1 minute
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
Mechanical Shock	MIL-STD-202 Method 213	$\Delta R \pm (0.25\% + 0.05\Omega)$	< 50 mΩ	Wave Form: Tolerance for half sine shock pulse. Peak value is 100 g. Normal duration (D) is 6.
Vibration	MIL-STD-202 Method 204	$\Delta R \pm (0.5\% + 0.05\Omega)$	< 50 mΩ	5 g for 20 minutes, 12 cycles each of 3 orientations. 10 - 2000 Hz

Performance Characteristics (cont.)

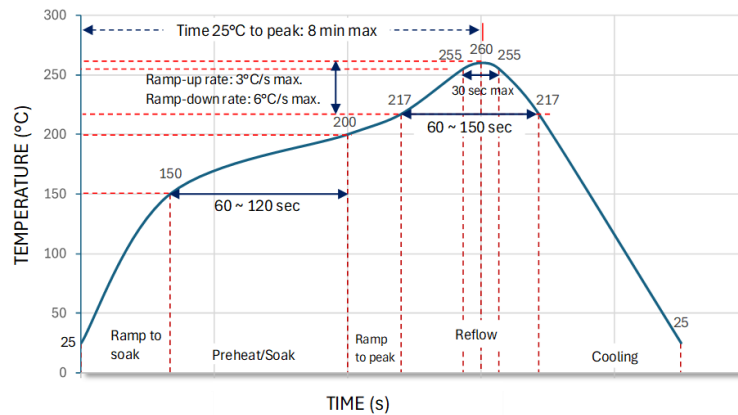
Test	Test Method	≤ 5%	Jumper	Test Condition
ESD	AEC-Q200-002	$\Delta R \pm (3\% + 0.05\Omega)$		Human body model 0402/0603: 1 KV, 0805: 2 KV
Resistance to Solvent	MIL-STD-202 Method 215	No visible damage on appearance and marking		Add aqueous wash chemical - OKEM clean or equivalent. Do not use banned solvents.
Terminal Strength	AEC Q200-006	No breakage		Force of 1.8 kg for 60 seconds
Flammability	UL-94	No ignition of the tissue paper or scorching or the pinewood board		V-0 or V1 are acceptable. Electrical test not required.
Sulfur Test	EIA-977 (Condition B)	$\Delta R \pm 1\%$	< 50 mΩ	105 ± 2°C, no power rating for 1000 hours

RCWV (Rated Continuous Working Voltage) = $\sqrt{P \cdot R}$ or Max. Operating Voltage whichever is lower.

Recommended storage temperature is 15 to 28°C; Humidity < 80% R.H.

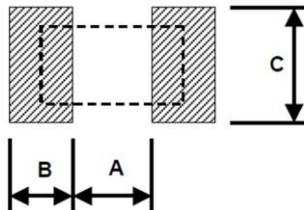
Shelf Life: 2 years from production date.

Recommended Resistor Reflow Profile



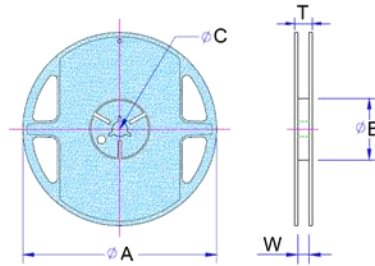
Number of reflow cycles allowed is 3 times.

Recommended Solder Pad



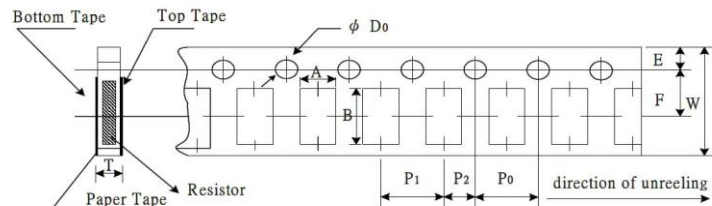
Type/Code	A	B	C	Unit
RMHT0402	0.020 0.50	0.018 0.45	0.024 0.60	inches mm
RMHT0603	0.035 0.90	0.024 0.60	0.035 0.90	inches mm
RMHT0805	0.047 1.20	0.028 0.70	0.051 1.30	inches mm

Reel Specifications



Type/Code	ØA	ØB	ØC	W	T	Unit
All Sizes	7.028 ± 0.059 178.50 ± 1.50	2.362 +0.039/-0 60.00 +1.00/-0	0.512 ± 0.008 13.00 ± 0.20	0.354 ± 0.020 9.00 ± 0.50	0.492 ± 0.020 12.50 ± 0.50	inches mm

Taping Specification - Paper Tape



Type/Code	A	B	W	E	F	Unit
RMHT0402	0.026 ± 0.004 0.65 ± 0.10	0.045 ± 0.004 1.15 ± 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
RMHT0603	0.043 ± 0.004 1.10 ± 0.10	0.075 ± 0.004 1.90 ± 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
RMHT0805	0.063 ± 0.004 1.60 ± 0.10	0.094 ± 0.008 2.40 ± 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/Code	P0	P1	P2	ØD0	T	Unit
RMHT0402	0.157 ± 0.004 4.00 ± 0.10	0.079 ± 0.002 2.00 ± 0.05	0.079 ± 0.002 2.00 ± 0.05	0.059 +0.004/-0 1.50 +0.10/-0	0.018 ± 0.004 0.45 ± 0.10	inches mm
RMHT0603	0.157 ± 0.004 4.00 ± 0.10	0.157 ± 0.002 4.00 ± 0.05	0.079 ± 0.002 2.00 ± 0.05	0.059 +0.004/-0 1.50 +0.10/-0	0.028 ± 0.004 0.70 ± 0.10	inches mm
RMHT0805	0.157 ± 0.004 4.00 ± 0.10	0.157 ± 0.002 4.00 ± 0.05	0.079 ± 0.002 2.00 ± 0.05	0.059 +0.004/-0 1.50 +0.10/-0	0.033 ± 0.004 0.85 ± 0.10	inches mm

Part Marking Specifications

0402 size is unmarked.

0603 and 0805 Jumpers are marked with "0".

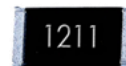


E96 and E24 Values for 0805

The nominal resistance is marked on the surface of the overcoating with the use of four character markings. Values below 100Ω will use "R" as the decimal holder.



10Ω



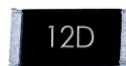
1.21 KΩ

E24 Values for 0603

The nominal resistance is marked on the surface of the overcoating with the use of three character markings. Values below 100Ω will use "R" as the decimal holder.



120 KΩ



130 KΩ

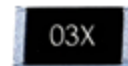
When E24 and E96 are the same resistance, marking will follow E96 rule below.

E96 Values for 0603 size

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

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
RMHT	Thick Film Automotive Grade High Temperature Chip Resistor	SMD	YES ⁽¹⁾	100% Matte Sn over Ni

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. 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	H	T	0	4	0	2	F	T	D	1	R	0	0
Product Series	Size	Tolerance	Packaging				TCR		Resistance Value					
RMHT	Size	Code	Tol.	Code	Description	Size	Quantity	Code	ppm/°C	Four characters with the multiplier used as the decimal holder. 1 Ω = 1R00 10 KΩ = 10K0 300 KΩ = 300K				
	0402	D	0.5%	T	7" Reel	0402	10000	D	100					
	0603	F	1%		Paper Tape	0603, 0805	5000	L	200					
	0805	J	5%											