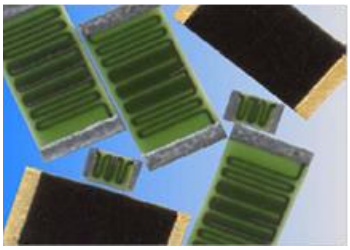
Features:

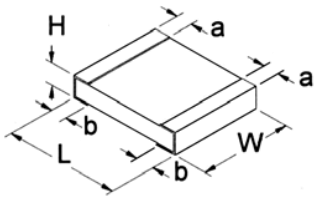
- Ultra-high stability
- Very low noise
- Tolerances to 0.1%
- TCR down to 25 ppm/ºC
- RoHS compliant, REACH compliant, and halogen free



Electrical Specifications

Type / Code	Power Rating (W) @ 70ºC	Maximum Working Voltage (V)	TCR (ppm/ºC)	Ohmic Range (Ω) and Tolerance							
				0.1%	0.25%	0.5%	1%	2%	5%	10%	20%
0402	0.04	50	± 50	-			10K - 100M				
			± 100				10K - 500M				
			± 200				10K - 500M	10K - 1G			
0603	0.06	100	± 50	-		10K - 10M	10K - 100M	10K - 500M			
			± 100				10K - 500M	10K - 1G			
			± 200					10K - 1G	10K - 10G	10K - 50G	
0805	0.2	125	± 50	-		10K - 10M	10K - 500M				
			± 100				10K - 1G				
			± 200				10K - 1G		10K - 10G	10K - 50G	
1206	0.33	200	± 25	1M - 10M	1M - 100M						
			± 50	100K - 10M	100K - 100M	100K - 500M					
			± 100	10K - 10M	10K - 100M	10K - 500M	10K - 1G				
			± 200				10K - 1G	10K - 10G		10K - 50G	
2010	1	300	± 25	1M - 10M	1M - 100M						
			± 50	100K - 10M	100K - 100M	100K - 500M					
			± 100	10K - 10M	10K - 100M	10K - 500M	10K - 1G				
			± 200				10K - 1G	10K - 10G		10K - 50G	
2512	2	350	± 25	1M - 100M	1M - 500M						
			± 50	100K - 100M	100K - 500M	100K - 1G					
			± 100	10K - 100M	10K - 500M	10K - 1G	10K - 10G			100K - 10G	
			± 200							100K - 50G	
3512	3	600	± 25	1M - 100M	1M - 500M						
			± 50	100K - 100M	100K - 500M	100K - 1G					
			± 100	10K - 100M	10K - 500M	10K - 1G	10K - 10G			100K - 10G	
			± 200							100K - 50G	

Mechanical Specifications



Type / Code	L Body Length	W Body Width	H Body Height (Max.)	a Top Termination	b Bottom Termination	Unit
0402	0.040 ± 0.005	0.020 ± 0.003	0.020	0.008 ± 0.004	0.010 ± 0.004	inches
	1.02 ± 0.13	0.51 ± 0.08	0.51	0.20 ± 0.10	0.25 ± 0.10	mm
0603	0.063 ± 0.010	0.031 ± 0.005	0.020	0.010 ± 0.005	0.012 ± 0.008	inches
	1.60 ± 0.25	0.79 ± 0.13	0.51	0.25 ± 0.13	0.30 ± 0.20	mm
0805	0.079 ± 0.010	0.050 ± 0.005	0.025	0.010 ± 0.005	0.013 ± 0.008	inches
	2.01 ± 0.25	1.27 ± 0.13	0.64	0.25 ± 0.13	0.33 ± 0.20	mm
1206	0.126 ± 0.010	0.063 ± 0.005	0.030	0.010 ± 0.005	0.020 ± 0.010	inches
	3.20 ± 0.25	1.60 ± 0.13	0.76	0.25 ± 0.13	0.51 ± 0.25	mm

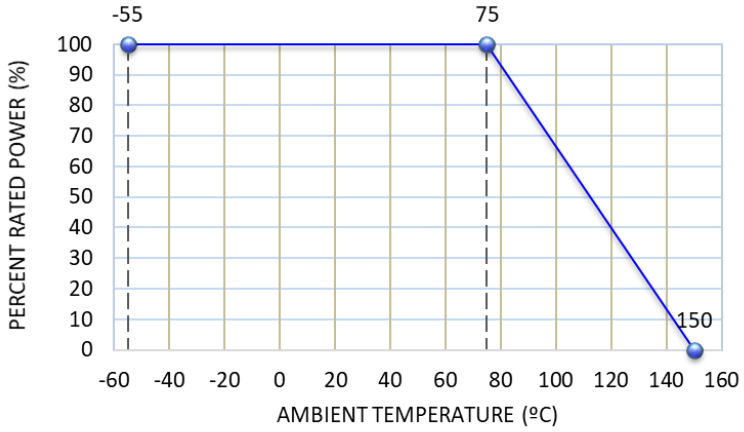
Mechanical Specifications (cont.)						
Type / Code	L Body Length	W Body Width	H Body Height (Max.)	a Top Termination	b Bottom Termination	Unit
2010	0.200 ± 0.010 5.08 ± 0.25	0.100 ± 0.005 2.54 ± 0.13	0.030 0.76	0.018 ± 0.010 0.46 ± 0.25	0.020 ± 0.010 0.51 ± 0.25	inches mm
2512	0.250 ± 0.010 6.35 ± 0.25	0.125 ± 0.005 3.18 ± 0.13	0.030 0.76	0.020 ± 0.010 0.51 ± 0.25	0.024 ± 0.010 0.61 ± 0.25	inches mm
3512	0.350 ± 0.010 8.89 ± 0.25	0.125 ± 0.005 3.18 ± 0.13	0.030 0.76	0.020 ± 0.010 0.51 ± 0.25	0.024 ± 0.010 0.61 ± 0.25	inches mm

Note: Parts are unmarked.

Performance Characteristics	
Test	Typical Delta R
Short Time Overload	0.1%
Load Life	0.1%
Temperature Cycle	0.1%
Moisture Resistance	0.1%
Shock	0.05%
Vibration	0.05%
Dielectric Withstanding Voltage	0.05%
Resistance to Soldering Heat	0.05%

Operating temperature range is -55ºC to +150ºC

Power Derating Curve:



Recommended Solder Profile

This information is intended as a reference for solder profiles for Stackpole resistive components. These profiles should be compatible with most soldering processes. These are only recommendations. Actual numbers will depend on board density, geometry, packages used, etc., especially those cells labeled with "*".

100% Matte Tin / RoHS Compliant Terminations

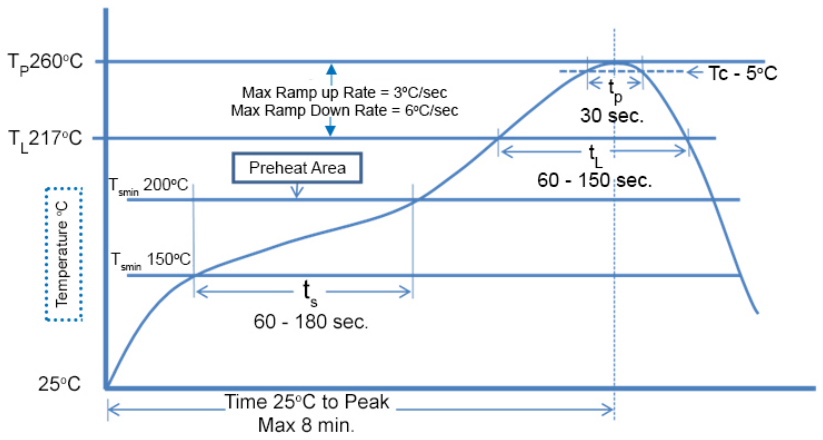
Soldering iron recommended temperatures: 330°C to 350°C with minimum duration.
Maximum number of reflow cycles: 3.

Wave Soldering			
Description	Maximum	Recommended	Minimum
Preheat Time	80 seconds	70 seconds	60 seconds
Temperature Diff.	140°C	120°C	100°C
Solder Temp.	260°C	250°C	240°C
Dwell Time at Max	10 seconds	5 seconds	*
Ramp DN (°C/sec)	N/A	N/A	N/A

Temperature Diff. = Difference between final preheat stage and soldering stage.

Convection IR Reflow			
Description	Maximum	Recommended	Minimum
Ramp Up (°C/sec)	3°C/sec	2°C/sec	*
Dwell Time > 217°C	150 seconds	90 seconds	60 seconds
Solder Temp.	260°C	245°C	*
Dwell Time at Max.	30 seconds	15 seconds	10 seconds
Ramp DN (°C/sec)	6°C/sec	3°C/sec	*

Recommended Lead Free Resistor Reflow Profile



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)
HGC	Thick Film Precision High Resistance Chip Resistor	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

H	G	C	B	1	2	0	6	F	K	C	2	M	0	0

Product Series

Product Series
HGC

Code / Description

Code	Description
B	Solderable wraparound (100% matte tin)

Power Rating

Size	W
0402	0.04
0603	0.06
0805	0.2
1206	0.33
2010	1
2512	2
3512	3

Tolerance

Code	Tol
B	0.1%
C	0.25%
D	0.5%
F	1%
G	2%
J	5%
K	10%
M	20%

Packaging

Code	Description	Size	Quantity
T	7" Reel - Paper Tape	0402, 0603, 0805	5000
	7" Reel - Plastic Tape	1206, 2010	4000
		2512	2000
K	7" Reel - Paper Tape	0603, 0805, 1206	1000
	7" Reel - Plastic Tape	2010, 2512, 3512	
D	7" Reel - Paper Tape	0603, 0805, 1206	500
	7" Reel - Plastic Tape	2010, 2512, 3512	
B	Bulk	All Sizes	1000

TCR

Code	ppm
E	25
C	50
D	100
L	200

Resistance Value

Four characters with the multiplier used as the decimal holder.

10 Kohm = 10K0
1 Mohm = 1M00
10 Gohm = 10G0