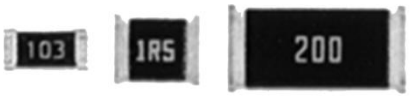
Features:

- Gold inner terminations are completely impervious to sulfur
- Zero ohm available (max resistance 0.05Ω)
- RoHS compliant, REACH compliant and halogen free



Electrical Specifications

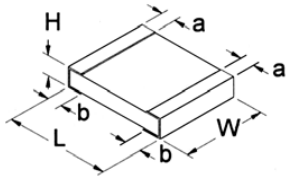
Type/Code	Power Rating (W) @ 70°C	Maximum Working Voltage (V) (1)	Maximum Overload Voltage (V)	TCR (ppm/°C)	Ohmic Range (Ω) and Tolerance
					1%, 2%, 5%
RMCG0402	0.1	50	100	±200	10 - 1M
RMCG0603	0.125	50	100	±200	10 - 1M
RMCG0805	0.25	150	300	±200	10 - 1M
RMCG1206	0.33	200	400	±200	10 - 1M
RMCG1210	0.5	200	400	±200	10 - 1M
RMCG2010	0.75	200	400	±200	10 - 1M
RMCG2512	1	200	400	±200	10 - 1M

(1) Lesser of √(P*R) or maximum working voltage.

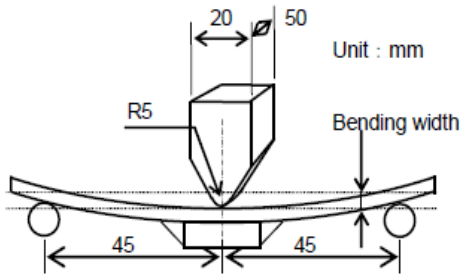
Electrical Specifications - Jumper

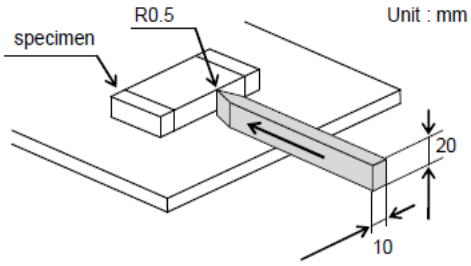
Type/Code	Jumper Rated Current (A)	Max Overload Current (A)	Jumper Resistance Value (Ω)
RMCG0402	1	2	≤ 0.1
RMCG0603	1	2	≤ 0.1
RMCG0805	2	4	≤ 0.05
RMCG1206	2	4	≤ 0.05
RMCG1210	2	4	≤ 0.05
RMCG2010	2	4	≤ 0.05
RMCG2512	2	4	≤ 0.05

Mechanical Specifications

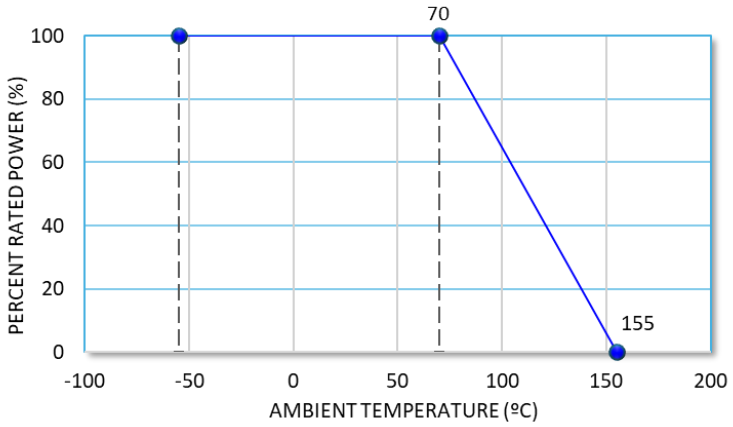


Type/Code	Typical Unit Weight (mg)	L Body Length	W Body Width	H Body Height	a Top Termination	b Bottom Termination	Unit
RMCG0402	0.60	0.039 ± 0.002 1.00 ± 0.05	0.020 ± 0.002 0.50 ± 0.05	0.014 ± 0.002 0.35 ± 0.05	0.008 ± 0.004 0.20 ± 0.10	0.010 ± 0.004 0.25 ± 0.10	inches mm
RMCG0603	2.1	0.063 ± 0.006 1.60 ± 0.15	0.031 ± 0.006 0.80 ± 0.15	0.018 ± 0.004 0.45 ± 0.10	0.012 ± 0.008 0.30 ± 0.20	0.012 ± 0.008 0.30 ± 0.20	inches mm
RMCG0805	4.8	0.079 ± 0.008 2.00 ± 0.20	0.049 ± 0.004 1.25 ± 0.10	0.020 ± 0.006 0.50 ± 0.15	0.016 ± 0.008 0.40 ± 0.20	0.016 ± 0.008 0.40 ± 0.20	inches mm
RMCG1206	9.4	0.126 ± 0.008 3.20 ± 0.20	0.063 ± 0.006 1.60 ± 0.15	0.022 ± 0.006 0.55 ± 0.15	0.020 ± 0.010 0.50 ± 0.25	0.020 ± 0.010 0.50 ± 0.25	inches mm
RMCG1210	15.1	0.126 ± 0.008 3.20 ± 0.20	0.098 ± 0.008 2.50 ± 0.20	0.022 ± 0.006 0.55 ± 0.15	0.020 ± 0.010 0.50 ± 0.25	0.020 ± 0.010 0.50 ± 0.25	inches mm
RMCG2010	23.8	0.197 ± 0.008 5.00 ± 0.20	0.098 ± 0.008 2.50 ± 0.20	0.022 ± 0.006 0.55 ± 0.15	0.024 ± 0.010 0.60 ± 0.25	0.020 ± 0.012 0.50 ± 0.30	inches mm
RMCG2512	38.3	0.248 ± 0.008 6.30 ± 0.20	0.126 ± 0.008 3.20 ± 0.20	0.022 ± 0.006 0.55 ± 0.15	0.028 ± 0.008 0.70 ± 0.20	0.028 ± 0.008 0.70 ± 0.20	inches mm

Performance Characteristics		
Test	Test Conditions (JIS C 5202)	Test Results
Short Time Overload	2.5 x rated voltage for 5 seconds	± (2% + 0.1Ω) Jumper <Rmax
Insulation Resistance	Voltage: 100 ± 15 V (DC) for 1 minute	≥ 10^3 MΩ
Dielectric Withstanding Voltage (except jumpers)	100 VAC for 1 minute	± (1% + 0.05Ω)
Jumper Dielectric Withstanding Voltage	Voltage: 100 V: 0402 and 0603 (AC) 300 V: 0805 (AC) 400 V: 1206, 1210, 2010, 2512 (AC Time: 1 minute	No damage by flash-over Leak current: ≤ 2 mA
Resistance to Soldering Heat	260 ± 5ºC for 10 seconds ± 1 seconds	± (1% + 0.1Ω) Jumper <Rmax
Solderability	245 ± 5ºC for 3 seconds ± 0.5 seconds	95% coverage, minimum
Temperature Cycle	Step 1: -55°C for 30 minutes Step 2: Room temperature 3 minutes (max.) Step 3: +155°C for 30 minutes Step 4: Room temperature 3 minutes (max.) Repeat for 100 cycles	± (1% + 0.1Ω) Jumper <Rmax
High Temperature Exposure	Temperature: +155 ± 3°C Time: 1000 +48/0 hours	± (1% + 0.1Ω) Jumper <Rmax
Low Temperature Storage	Temperature: -55 ± 3°C Time: 1000 +48/0 hours	± (1% + 0.1Ω) Jumper <Rmax
Humidity	Temperature/Humidity: +60 ± 2°C/90~95% RH Time: 1000 +48/0 hours	± (1% + 0.1Ω) Jumper <Rmax
Sulfurization	Oil: 5.4% sulfur substance contained Oil temperature: +85°C Time: 1000 +48/0 hours	± (2% + 0.1Ω) Jumper <Rmax
Load Life	Temperature: +70 ± 2°C Rated voltage (Jumper: Rated current) Time: ON 90 minutes, OFF 30 minutes for 1000 + 48/0 hours	± (3% + 0.1Ω) Jumper <Rmax
Load Humidity	Temperature/Humidity: +60 ± 2°C/90~95% RH Voltage: rated voltage / Jumper: rated current Time: ON 90 minutes, OFF 30 minutes for 1000 + 48/0 hours	± (3% + 0.1Ω) Jumper <Rmax
Substrate Bending	Bending width: 0402, 0603, 0805, 1206, 1210: 3 mm 2010 and 2512: 1 mm Holding time: 10 ± 1 seconds Test board: glass fiber base epoxy resign: t=1.6 mm 	Change of resistance value: ± (1% + 0.1Ω) Jumper <Rmax

Performance Characteristics (cont.)		
Test	Test Conditions (JIS C 5202)	Test Results
Adhesion	Pressure: 5 N Holding time: 10 ± 1 seconds 	Change of resistance value: ± (1% + 0.1Ω) Jumper <Rmax
Vibration	Frequency: 10 - 55 - 10 Hz for 1 minute Amplitude: 1.5 mm in each X, Y, Z directions Time: 2 hours in each X, Y, Z directions	± (1% + 0.1Ω) Jumper <Rmax

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

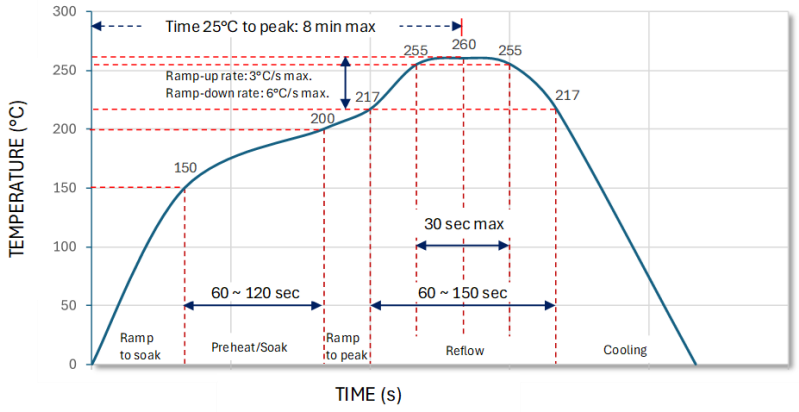
Soldering iron recommended temperatures: 330°C to 350°C with minimum duration.
Maximum number of reflow cycles: 3.

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

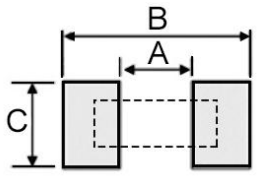
Temperature Diff. = Difference between final preheat stage and soldering stage.

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 Resistor Reflow Profile

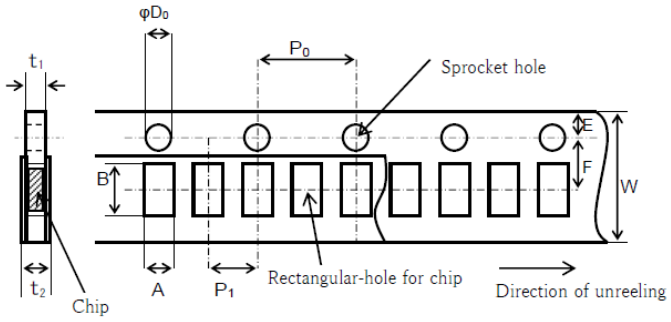


Recommended Pad Layout



Type/Code	A	B	C	Unit
RMCG0402	0.020 0.50	0.051 1.30	0.020 0.50	inches mm
RMCG0603	0.035 0.90	0.102 2.60	0.028 0.70	inches mm
RMCG0805	0.053 1.35	0.136 3.45	0.043 1.10	inches mm
RMCG1206	0.087 2.20	0.185 4.70	0.055 1.40	inches mm
RMCG1210	0.087 2.20	0.205 5.20	0.085 2.15	inches mm
RMCG2010	0.146 3.70	0.244 6.20	0.085 2.15	inches mm
RMCG2512	0.185 4.70	0.299 7.60	0.108 2.75	inches mm

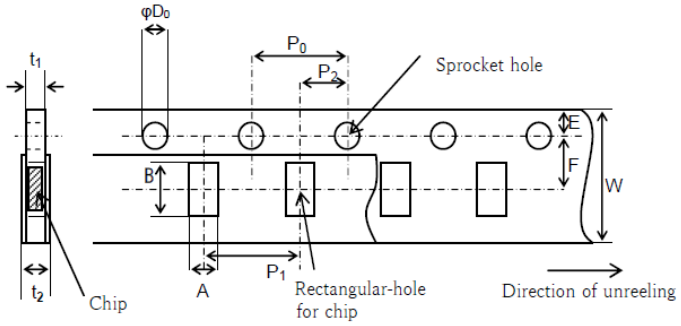
Packaging Specifications - Paper Tape



Type/Code	A	B	W	F	E	P1	Unit
RMCG0402	0.026 ± 0.004 0.65 ± 0.10	0.045 ± 0.002 1.15 ± 0.05	0.315 ± 0.008 8.00 ± 0.20	0.138 ± 0.002 3.50 ± 0.05	0.069 ± 0.004 1.75 ± 0.10	0.079 ± 0.002 2.00 ± 0.05	inches mm

Type/Code	P2	P0	D0	t1	t2	Unit
RMCG0402	-	0.157 ± 0.004 4.00 ± 0.10	0.061 ± 0.002 1.55 ± 0.05	0.020 max 0.50 max	0.020 ± 0.002 0.52 ± 0.05	inches mm

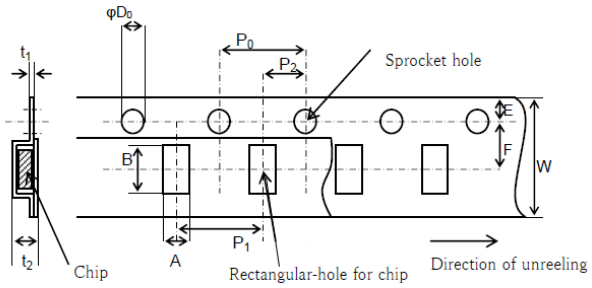
Packaging Specifications - Paper Tape



Type/Code	A	B	W	F	E	P1	Unit
RMCG0603	0.043 ± 0.004 1.10 ± 0.10	0.075 ± 0.004 1.90 ± 0.10	0.315 ± 0.008 8.00 ± 0.20	0.138 ± 0.002 3.50 ± 0.05	0.069 ± 0.004 1.75 ± 0.10	0.157 ± 0.004 4.00 ± 0.10	inches mm
RMCG0805	0.065 ± 0.006 1.65 ± 0.15	0.094 ± 0.006 2.40 ± 0.15	0.315 ± 0.008 8.00 ± 0.20	0.138 ± 0.002 3.50 ± 0.05	0.069 ± 0.004 1.75 ± 0.10	0.157 ± 0.004 4.00 ± 0.10	inches mm
RMCG1206	0.079 ± 0.006 2.00 ± 0.15	0.138 ± 0.008 3.50 ± 0.20	0.315 ± 0.008 8.00 ± 0.20	0.138 ± 0.002 3.50 ± 0.05	0.069 ± 0.004 1.75 ± 0.10	0.157 ± 0.004 4.00 ± 0.10	inches mm
RMCG1210	0.112 ± 0.006 2.85 ± 0.15	0.138 ± 0.008 3.50 ± 0.20	0.315 ± 0.008 8.00 ± 0.20	0.138 ± 0.002 3.50 ± 0.05	0.069 ± 0.004 1.75 ± 0.10	0.157 ± 0.004 4.00 ± 0.10	inches mm

Type/Code	P2	P0	D0	t1	t2	Unit
RMCG0603	0.079 ± 0.002 2.00 ± 0.05	0.157 ± 0.004 4.00 ± 0.10	0.061 ± 0.002 1.55 ± 0.05	0.039 max 1.00 max	0.055 max 1.40 max	inches mm
RMCG0805	0.079 ± 0.002 2.00 ± 0.05	0.157 ± 0.004 4.00 ± 0.10	0.061 ± 0.002 1.55 ± 0.05	0.039 max 1.00 max	0.055 max 1.40 max	inches mm
RMCG1206	0.079 ± 0.002 2.00 ± 0.05	0.157 ± 0.004 4.00 ± 0.10	0.061 ± 0.002 1.55 ± 0.05	0.039 max 1.00 max	0.055 max 1.40 max	inches mm
RMCG1210	0.079 ± 0.002 2.00 ± 0.05	0.157 ± 0.004 4.00 ± 0.10	0.061 ± 0.002 1.55 ± 0.05	0.039 max 1.00 max	0.055 max 1.40 max	inches mm

Packaging Specifications - Plastic Tape



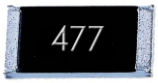
Type/Code	A	B	W	F	E	P1	Unit
RMCG2010	0.114 ± 0.004 2.90 ± 0.10	0.209 ± 0.004 5.30 ± 0.10	0.472 ± 0.008 12.00 ± 0.20	0.217 ± 0.002 5.50 ± 0.05	0.069 ± 0.004 1.75 ± 0.10	0.157 ± 0.004 4.00 ± 0.10	inches mm
RMCG2512	0.134 ± 0.004 3.40 ± 0.10	0.260 ± 0.004 6.60 ± 0.10	0.472 ± 0.008 12.00 ± 0.20	0.217 ± 0.002 5.50 ± 0.05	0.069 ± 0.004 1.75 ± 0.10	0.157 ± 0.004 4.00 ± 0.10	inches mm

Type/Code	P2	P0	D0	t1	t2	Unit
RMCG2010	0.079 ± 0.002 2.00 ± 0.05	0.157 ± 0.004 4.00 ± 0.10	0.061 ± 0.002 1.55 ± 0.05	0.010 ± 0.002 0.25 ± 0.05	0.039 ± 0.004 1.00 ± 0.10	inches mm
RMCG2512	0.079 ± 0.002 2.00 ± 0.05	0.157 ± 0.004 4.00 ± 0.10	0.061 ± 0.002 1.55 ± 0.05	0.010 ± 0.002 0.25 ± 0.05	0.039 ± 0.004 1.00 ± 0.10	inches mm

Part Marking Instructions

<u>1% Marking:</u>
The nominal resistance is marked on the surface of the overcoating with the use of **4 digit markings.**

<u>5% Marking:</u>
The nominal resistance is marked on the surface of the overcoating with the use of **3 digit markings.**



<u>0402 size is not marked.</u>

<u>Jumpers 0603 thru 2512 sizes</u>
R00 is marked on the surface of the overcoating.

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

X = 1	C = 1000
A = 10	D = 10000
B = 100	E = 100000

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 = 1000	17.8 x 1000 = 17.8 Kohm
93D	93 means 90.9 and D = 10000	90.9 x 10000 = 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)
RMCG	Gold Barrier Thick Film Surface Mount Chip Resistor	SMD	YES(1)	100% Matte Sn over Ni	Jan-06	06/01

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

R	M	C	G	0	4	0	2	J	T	4	K	7	0

Product Series	
Code	Description
RMCG	Gold Termination

Size	
Size	W
0402	0.1
0603	0.125
0805	0.25
1206	0.33
1210	0.5
2010	0.75
2512	1

Tolerance	
Code	Tol
F	1%
G	2%
J	5%
Z	Jumper

Packaging			
Code	Description	Size	Quantity
T	7" Reel Paper Tape	0402	10000
		0603, 0805 1206, 1210	5000
	7" Reel Plastic Tape	2010, 2512	4000

Resistance Value
Four characters with the multiplier used as the decimal holder.
3.9 ohm = 3R90 10 Kohm = 10K0 1.1 Mohm = 1M10 Zero ohm jumper = 0R00