Features:

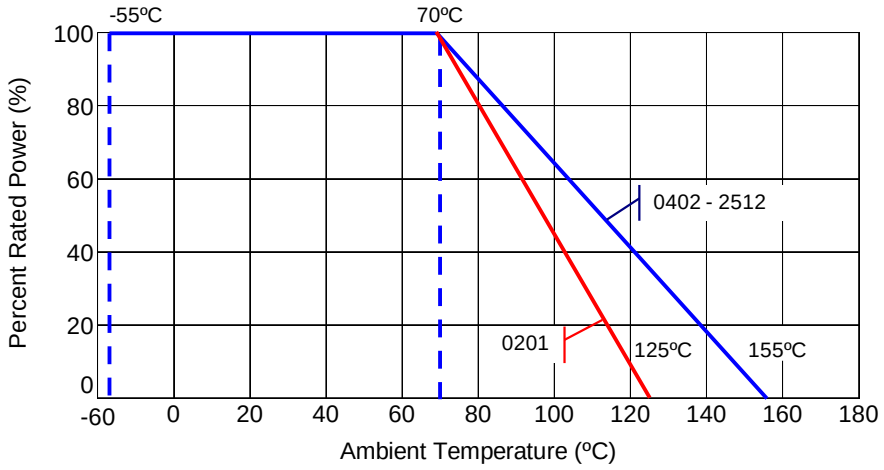
- Precision performance
- RoHS compliant by means of exemption 7c-I
- Highly stable performance over time
- Power derating from 100% at 70ºC to zero at 150ºC
- Tolerances of 0.1% may be available - contact factory for details
- Temperature coefficient of resistance as low as ±50ppm/ºC
- 0402 and 0603 package sizes are qualified to AEC-Q200

Electrical Specifications

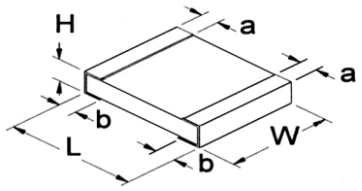
Type / Code	Old Package Code	Power Rating (Watts) @ 70ºC	Maximum Working Voltage (1)	Maximum Overload Voltage	TCR (ppm/ºC)	Ohmic Range (Ω) and Tolerance		
						0.1%	0.5%	1%
RGC0201	-	0.05W	25V	50V	± 200 ppm/ºC	-	10 - 10M	-
RGC0402	1/16S	0.063W	50V	100V	± 50 ppm/ºC	-	100 - 1M	
					± 100 ppm/ºC		10 - 1M	
					± 200 ppm/ºC		1.02M - 10M	-
RGC0603	1/16	0.1W	75V	150V	± 50 ppm/ºC	10 - 1M	10 - 10M	
					± 100 ppm/ºC	10 - 1M		10 - 10M
					± 200 ppm/ºC	-	1.02M - 10M	-
RGC0805	1/10	0.125W	150V	300V	± 50 ppm/ºC	10 - 1M	10 - 10M	
					± 100 ppm/ºC	10 - 1M		10 - 10M
					± 200 ppm/ºC	-	1.02M - 10M	-
RGC1206	1/8	0.25W	200V	400V	± 50 ppm/ºC	10 - 1M	10 - 10M	
					± 100 ppm/ºC	10 - 1M		10 - 10M
					± 200 ppm/ºC	-	1.02M - 10M	-
RGC1210	1/4	0.33W	200V	400V	± 50 ppm/ºC	10 - 1M	10 - 10M	
					± 100 ppm/ºC	10 - 1M		10 - 10M
					± 200 ppm/ºC	-	1.02M - 10M	-
RGC2010	1/2	0.75W	200V	400V	± 50 ppm/ºC	10 - 1M	10 - 10M	
					± 100 ppm/ºC	10 - 1M		10 - 10M
					± 200 ppm/ºC	-	1.02M - 10M	-
RGC2512	1	1W	250V	500V	± 50 ppm/ºC	10 - 1M	10 - 10M	
					± 100 ppm/ºC	10 - 1M		10 - 10M
					± 200 ppm/ºC	-	1.02M - 10M	-

(1) Lesser of √PR or maximum working voltage.

Power Derating Curve

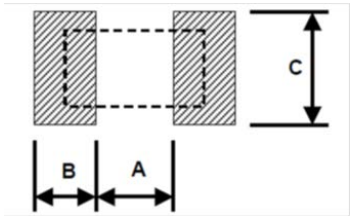


Mechanical Specifications



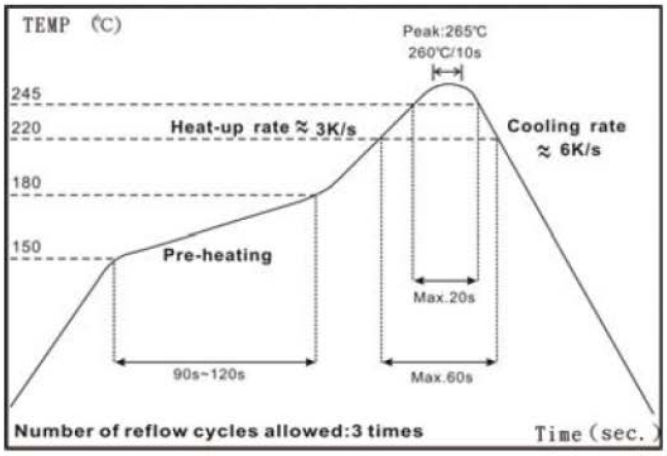
Type / Code	Weight (g) (1000 pc.)	L Body Length	W Body Width	H Body Height	a Top Termination	b Bottom Termination	Unit
RGC0201	0.150	0.024 ± 0.001 0.60 ± 0.03	0.012 ± 0.001 0.30 ± 0.03	0.009 ± 0.001 0.23 ± 0.03	0.006 ± 0.002 0.15 ± 0.05	0.006 ± 0.002 0.15 ± 0.05	inches mm
RGC0402	0.620	0.039 ± 0.004 1.00 ± 0.10	0.020 ± 0.002 0.50 ± 0.05	0.012 ± 0.004 0.30 ± 0.10	0.008 ± 0.004 0.20 ± 0.10	0.010 ± 0.006 0.25 ± 0.15	inches mm
RGC0603	2.042	0.063 ± 0.004 1.60 ± 0.10	0.031 ± 0.004 0.80 ± 0.10	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
RGC0805	4.368	0.079 ± 0.004 2.00 ± 0.10	0.049 ± 0.004 1.25 ± 0.10	0.020 ± 0.004 0.50 ± 0.10	0.016 ± 0.010 0.40 ± 0.25	0.016 ± 0.008 0.40 ± 0.20	inches mm
RGC1206	8.947	0.122 ± 0.006 3.10 ± 0.15	0.061 ± 0.004 1.55 ± 0.10	0.024 ± 0.006 0.60 ± 0.15	0.020 ± 0.010 0.50 ± 0.25	0.020 ± 0.012 0.50 ± 0.30	inches mm
RGC1210	15.959	0.126 ± 0.010 3.20 ± 0.25	0.102 ± 0.006 2.60 ± 0.15	0.022 ± 0.004 0.55 ± 0.10	0.020 ± 0.010 0.50 ± 0.25	0.020 ± 0.008 0.50 ± 0.20	inches mm
RGC2010	24.241	0.197 ± 0.008 5.00 ± 0.20	0.098 ± 0.006 2.50 ± 0.15	0.022 ± 0.004 0.55 ± 0.10	0.024 ± 0.010 0.60 ± 0.25	0.024 ± 0.012 0.60 ± 0.30	inches mm
RGC2512	39.448	0.250 ± 0.008 6.35 ± 0.20	0.124 ± 0.008 3.15 ± 0.20	0.022 ± 0.004 0.55 ± 0.10	0.024 ± 0.010 0.60 ± 0.25	0.024 ± 0.012 0.60 ± 0.30	inches mm

Recommended Soldering Pads

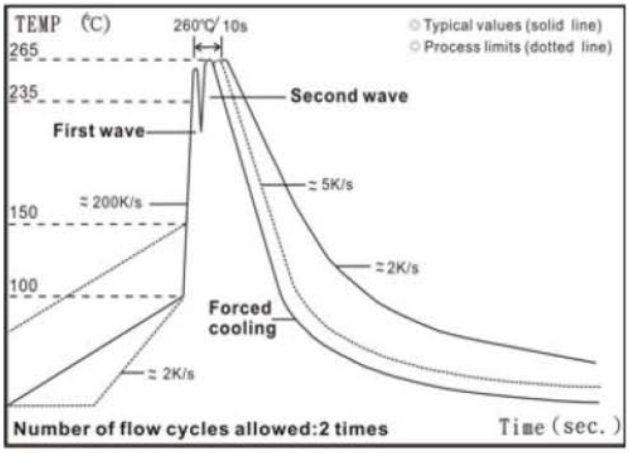


Type/Code	A	B	C	Unit
RGC0201	0.012 0.30	0.010 0.25	0.012 0.30	inches mm
RGC0402	0.020 0.50	0.018 0.45	0.024 0.60	inches mm
RGC0603	0.035 0.90	0.024 0.60	0.035 0.90	inches mm
RGC0805	0.047 1.20	0.028 0.70	0.051 1.30	inches mm
RGC1206	0.079 2.00	0.035 0.90	0.063 1.60	inches mm
RGC1210	0.079 2.00	0.035 0.90	0.110 2.80	inches mm
RGC2010	0.150 3.80	0.035 0.90	0.110 2.80	inches mm
RGC2512	0.150 3.80	0.063 1.60	0.138 3.50	inches mm

Soldering Profiles



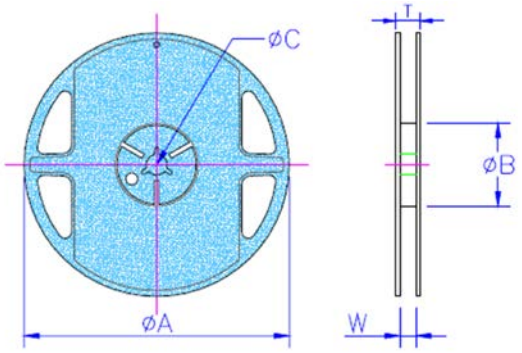
IR Reflow Soldering



Wave Soldering (Flow Soldering)

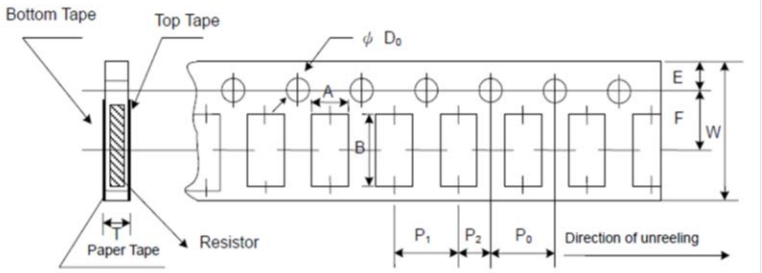
(1) Time of IR reflow soldering at maximum temperature point 260ºC : 10s
(2) Time of wave soldering at maximum temperature point 260ºC : 10s
(3) Time of soldering iron at maximum temperature point 410ºC : 5s

Packaging Specifications



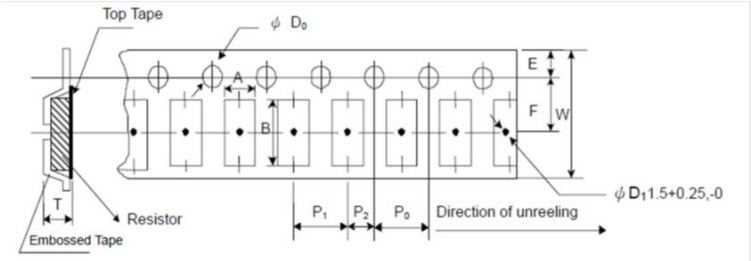
Type/Code	Packaging Description	Tape Width	Reel Diameter	A	B	C	W	T	Unit
RGC0201 RGC0402 RGC0603 RGC0805 RGC1206 RGC1210	Paper	8mm	7 inches	7.028 ± 0.059 178.50 ± 1.50	2.362 ± 0.039 / 0.00 60.00 + 1.00 / 0.00	0.512 ± 0.008 13.00 ± 0.20	0.354 ± 0.020 9.00 ± 0.50	0.492 ± 0.020 12.50 ± 0.50	inches mm
RGC2010 RGC2512	Embossed	12mm	7 inches	7.028 ± 0.059 178.50 ± 1.50	2.362 ± 0.039 / 0.00 60.00 + 1.00 / 0.00	0.512 ± 0.020 13.00 ± 0.50	0.512 ± 0.020 13.00 ± 0.50	0.610 ± 0.020 15.50 ± 0.50	inches mm

Paper Tape Specifications



Type/Code	A	B	W	E	F	Unit
RGC0201	0.015 ± 0.002 0.38 ± 0.05	0.027 ± 0.002 0.68 ± 0.05	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
RGC0402	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
RGC0603	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
RGC0805	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
RGC1206	0.075 ± 0.004 1.90 ± 0.10	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
RGC2010	0.114 ± 0.004 2.90 ± 0.10	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
Type/Code	P0	P1	P2	D0	T	Unit
RGC0201	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	0.017 ± 0.008 0.42 ± 0.20	inches mm
RGC0402	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
RGC0603	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
RGC0805	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
RGC1206	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
RGC2010	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

Embossed Tape Specifications



Type/Code	A	B	W	E	F	Unit
RGC2010	0.110 ± 0.004 2.80 ± 0.10	0.217 ± 0.004 5.50 ± 0.10	0.472 ± 0.012 12.00 ± 0.30	0.069 ± 0.004 1.75 ± 0.10	0.217 ± 0.002 5.50 ± 0.05	inches mm
RGC2512	0.138 ± 0.004 3.50 ± 0.10	0.264 ± 0.004 6.70 ± 0.10	0.472 ± 0.012 12.00 ± 0.30	0.069 ± 0.004 1.75 ± 0.10	0.217 ± 0.002 5.50 ± 0.05	inches mm
Type/Code	P0	P1	P2	D0	T	Unit
RGC2010	0.157 ± 0.004 4.00 ± 0.10	0.157 ± 0.004 4.00 ± 0.10	0.079 ± 0.002 2.00 ± 0.05	0.059 + 0.004,-0 1.50 + 0.10,-0	0.047 + 0.000 1.20 + 0.00	inches mm
RGC2512	0.157 ± 0.004 4.00 ± 0.10	0.157 ± 0.004 4.00 ± 0.10	0.079 ± 0.002 2.00 ± 0.05	0.059 + 0.004,-0 1.50 + 0.10,-0	0.047 + 0.000 1.20 + 0.00	inches mm

Performance Characteristics				
Item	Requirement			Test Method
	± 1% and below	± 5%	Jumper	
Temperature Coefficient of Resistance	As specified.			JIS-C-5201-1 4.8 IEC-60115-1 4.8 -55ºC +125 C, 25ºC is the reference temperature
Short Time Overload	±(1.0%+0.05Ω)	±(2.0%+0.05Ω)	<50mΩ	JIS-C-5201-1 4.13 IEC-60115-1 4.13 RCWV*2.5 or max. overload voltage whichever is lower for 5 seconds; 2 seconds for high power series
Insulation resistance	≥10G			JIS-C-5201-1 4.6 IEC-60115-1 4.6 Max. overload voltage for 1 minute
Endurance	±(1.0%+0.10Ω)	±(2.0%+0.10Ω)	<100mΩ	JIS-C-5201-1 4.25 IEC-60115-1 4.25.1 70±2ºC, RCWV for 1000 h. with 1.5 h. "ON" and 0.5 h. "OFF"
Damp Heat with Load	±(1.0%+0.10Ω)	±(2.0%+0.10Ω)	<100mΩ	JIS-C-5201-1 4.24 IEC-60115-1 4.24 40±2ºC, 90~95% R.H., RCWV for 1000 h. with 1.5 h. "ON" and 0.5 h. "OFF"
Dry Heat	±(1.0%+0.05Ω)	±(1.5%+0.10Ω)	<50mΩ	JIS-C-5201-1 4.23 IEC-60115-1 4.23.2 at +125/+155ºC for 1000 h.
Bending Strength	±(1.0%+0.05Ω)	±(1.0%+0.05Ω)	<50mΩ	JIS-C-5201-1 4.33 IEC-60115-1 4.33 Bending once for 5 seconds 2010, 2512 sizes: 2mm; other sizes: 3mm
Solderability	95% minimum coverage			JIS-C-5201-1 4.17 IEC-60115-1 4.17 245±5ºC for 3 seconds
Resistance to Soldering Heat	±(0.5%+0.05Ω)	±(1.0%+0.05Ω)	<50mΩ	JIS-C-5201-1 4.18 IEC-60115-1 4.18 260±5ºC for 10 seconds
Voltage Proof	No breakdown or flashover			JIS-C-5201-1 4.7 IEC-60115-1 4.7 1.42 times max. operating voltage for 1 minute
Leaching	Individual leaching area ≤5% Total leaching area ≤10%			JIS-C-5201-1 4.18 IEC-60068-2-58 8.2.1 260±5ºC for 30 seconds
Rapid Change of Temperature	±(0.5%+0.05Ω)	±(1.0%+0.05Ω)	<50mΩ	JIS-C-5201-1 4.19 IEC-60115-1 4.19 -55ºC to +125/+155ºC, 5 cycles

RCWV (Rated Continuous Working Voltage) = √(P*R) or max. operating voltage whichever is lower
Storage Temperature: 25±3ºC; humidity < 80% RH

How to Order

1	2	3	4	5	6	7	8	9	10	11	12	13	14
R	**G**	**C**	**0**	**6**	**0**	**3**	**F**	**T**	**C**	**4**	**K**	**7**	**0**

Product Series	
RGC	Semi-Precision Thick Film

Size	Power
0201	0.05W
0402	0.063W
0603	0.1W
0805	0.125W
1206	0.25W
1210	0.33W
2010	0.75W
2512	1W

Tolerance		
Code	Tol	Value
B	0.1%	E24, E96
D	0.5%	
F	1%	

Packaging			
Code	Description	Size	Quantity
T	7" Reel Paper Tape	0201, 0402	10,000
		0603, 0805 1206, 1210	5,000
	7" Reel Plastic Tape	2010(*) 2512	4,000

(*) RGC2010F 1Ω to 9.76Ω MOQ is 12,000

TCR	
Code	ppm
C	50
D	100
L	200

Resistance Value
Four characters with the multiplier used as the decimal holder.
100 ohm = 100R 10.5 Kohm = 10K5 1 Mohm = 1M00