

RGF series Thick Film Non-Magnetic Chip Resistor

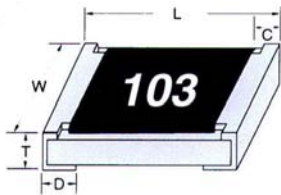
◆ Features

- » Non-magnetic chip resistors by copper plating on middle termination
- » Non-magnetic chip resistors pass 3000 gauss magnetic detection
- » Compatible with flow and reflow soldering
- » Suitable for lead free soldering
- » Meet RoHS compliant
- » RoHS compliant & Halogen Free

◆ Applications

- » Medical equipment
- » Automotive industry
- » MRI industry
- » Measurement instrument

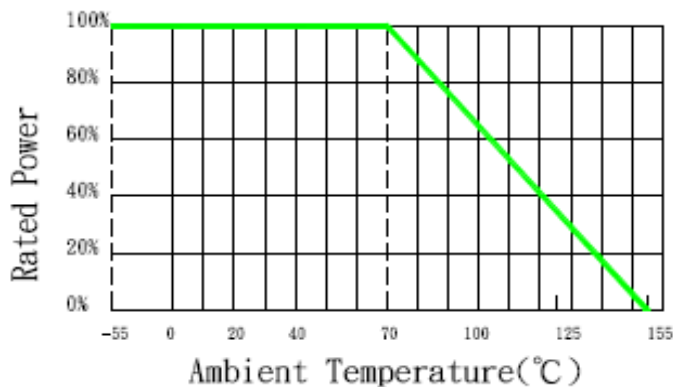
◆ Dimensions



Size	L	W	C	D	T
0603	1.60±0.10	0.80±0.10	0.30±0.20	0.30±0.20	0.45±0.15
0805	2.00±0.10	1.25±0.10	0.40±0.20	0.40±0.20	0.50±0.15
1206	3.10±0.10	1.60±0.10	0.50±0.25	0.50±0.25	0.55±0.15

Unit: mm

◆ Power Derating Curve



◆ Rating

Lead Free Chip Resistor

Type	Power Rating at 70°C	Max. RCWV	Max. Overload Voltage	Resistance Tolerance (%)	Temperature Coefficient (ppm/°C)	Resistance Range		Standard Resistance Values
						Min.	Max.	
RGF0603	1/10W	50V	100V	± 1% (F)	± 100	1Ω	10MΩ	E-96
				± 5% (J)	± 200	0Ω & 1Ω	10MΩ	E-24
RGF0805	1/8W	150V	300V	± 1% (F)	± 100	1Ω	10MΩ	E-96
				± 5% (J)	± 200	0Ω & 1Ω	10MΩ	E-24
RGF1206	1/4W	200V	400V	± 1% (F)	± 100	1Ω	10MΩ	E-96
				± 5% (F)	± 200	0Ω & 1Ω	10MΩ	E-24

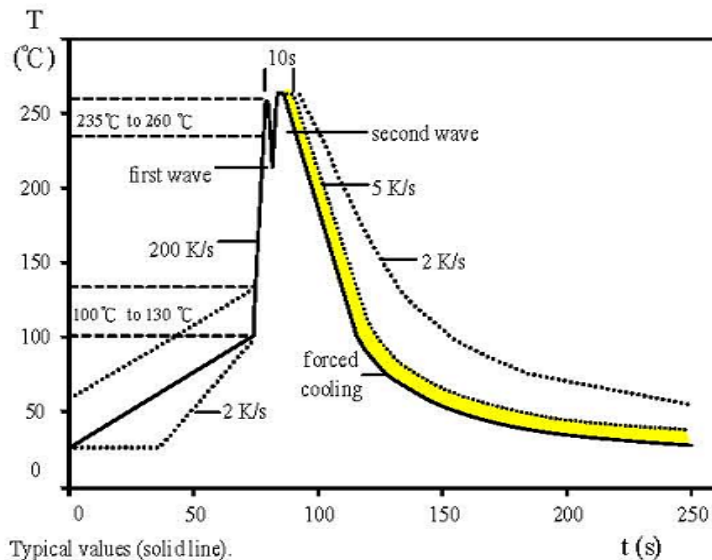
◆ Part Number

RGF	0805	F	10K	□	□□
Type	Size	Tolerance	R Value	Reel Size	Package Quantity
RGF	0603	F: ± 1%	10KΩ = 10K	Blank = 7"	(standard package As below)
	0805	J: ± 5%	0Ω = 0R	B= 13"	10= 10K per reel
	1206		2.2MΩ = 2M2	C= 10"	20= 20K per reel

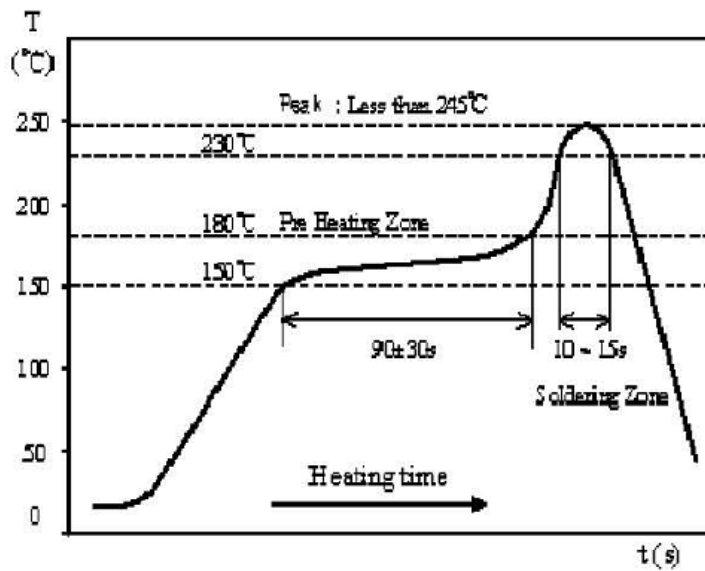
» Standard Package Q'ty for each size is as following.

TYPE	Standard Package Q'ty
RGF0603	5K per reel
RGF0805	5K per reel
RGF1206	5K per reel

◆ Soldering Temperature Curve



WAVE soldering.



IR Reflow Soldering

◆ Specification

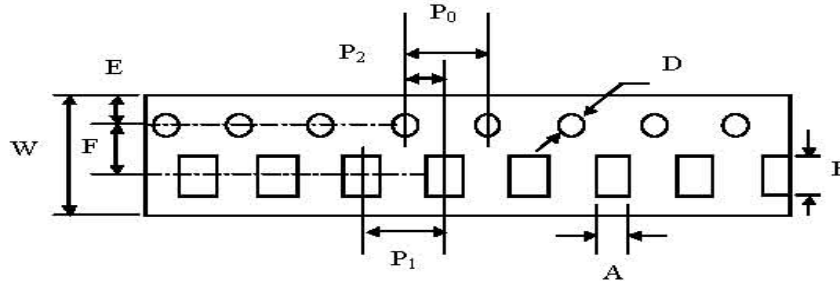
Specification and Test Method

TEST	SPECIFICATION	TEST METHOD
DC Resistance	F: $\pm 1\%$ J: $\pm 5\%$	IEC 60115-1 / JIS C 5201-1, Clause 4.5 Measure the resistance Value.
Short Time Overload	F: $\Delta R \leq \pm (1\% + 0.05\Omega)$ J: $\Delta R \leq \pm (2\% + 0.1\Omega)$	IEC 60115-1 / JIS C 5201-1, Clause 4.13 2.5 × Rated voltage or Max. Overload Voltage for 5 sec. measure resistance after 30 minutes
Solderability	Over 95% of termination must be covered with solder	IEC 60115-1 / JIS C 5201-1, Clause 4.17 After immersing flux, dip in the $245 \pm 2^\circ\text{C}$ molten solder bath for 3 ± 0.5 sec.
Resistance to solder Heat	F: $\Delta R \leq \pm (0.5\% + 0.05\Omega)$ J: $\Delta R \leq \pm (1\% + 0.1\Omega)$ No mechanical damage	IEC 60115-1 / JIS C 5201-1, Clause 4.18 With $260 \pm 5^\circ\text{C}$ for 10 ± 1 sec
Load Life Humidity	F: $\Delta R \leq \pm (1\% + 0.05\Omega)$ J: $\Delta R \leq \pm (3\% + 0.1\Omega)$	IEC 60115-1 / JIS C 5201-1, Clause 4.24 Maintain the temperature of the resistor at $40 \pm 2^\circ\text{C}$ and 90% ~ 95% R.H. with the rated voltage applied. Cycle ON for 1.5 hours and OFF for 0.5 hour for 1000+48/-0 hours. After 1 ~ 4 hours, measure the resistance value.
Temperature Coefficient of Resistance (TCR)	Refer to the rating table information	IEC 60115-1 / JIS C 5201-1, Clause 4.8 Test temperature : $25^\circ\text{C}(T1) \rightarrow -55^\circ\text{C}(T2)$ $25^\circ\text{C}(T1) \rightarrow +155^\circ\text{C}(T2)$ $\text{TCR (ppm/}^\circ\text{C)} = \frac{R2 - R1}{R1} \times \frac{1}{T2 - T1} \times 10^6$ T1: 25°C T2: Test temperature R1: Resistance at reference temperature (T1) R2: Resistance at test temperature (T2)
Load Life	F: $\Delta R \leq \pm (1\% + 0.05\Omega)$ J: $\Delta R \leq \pm (3\% + 0.1\Omega)$	IEC 60115-1 / JIS C 5201-1, Clause 4.25 Permanent resistance change after 1000+48/-0 hours (1.5 hours ON, 0.5 hour OFF) at RCWV or Max. Keep the resistor at $70 \pm 2^\circ\text{C}$ ambient.
Temperature Cycle	F: $\Delta R \leq \pm (0.5\% + 0.05\Omega)$ J: $\Delta R \leq \pm (1\% + 0.1\Omega)$ No mechanical damage	IEC 60115-1 / JIS C 5201-1, Clause 4.19 Repeat 5 cycles as follows -55°C (30min.) $\rightarrow +25^\circ\text{C}$ (2~3min.) $\rightarrow +155^\circ\text{C}$ (30min.) $\rightarrow +25^\circ\text{C}$ (2~3min.)
Insulation Resistance	Between termination and coating must be over 1000MΩ	IEC 60115-1 / JIS C 5201-1, Clause 4.6 Test voltage : $100 \pm 15\text{V}$
Bending strength	F: $\Delta R \leq \pm (0.5\% + 0.05\Omega)$ J: $\Delta R \leq \pm (1\% + 0.1\Omega)$ No mechanical damage	IEC 60115-1 / JIS C 5201-1, Clause 4.33 Resistance changes after bended on the 90mm PCB. Bend : 3mm for 0603, 0805, 2mm for 1206

◆ Packing

Tape and Reel package

Taping specs are according to EIA RS-481

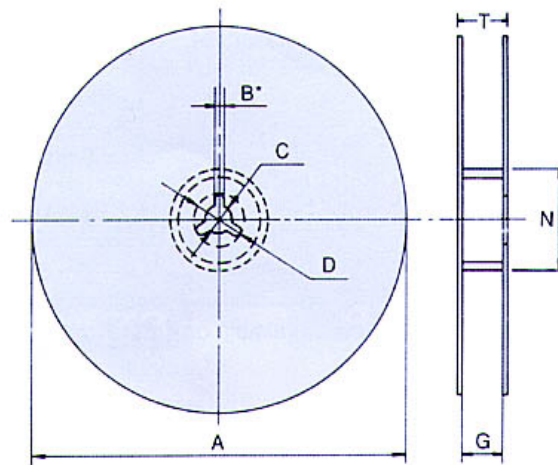


Accumulated dimensional tolerance $40\pm 0.2\text{mm}$

Size	A	B	W	F	E	P1	P2	P0	D
0603	1.10 ± 0.20	1.90 ± 0.20	8.00 ± 0.30	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	$1.50+0.10/-0$
0805	1.65 ± 0.20	2.40 ± 0.20	8.00 ± 0.30	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	$1.50+0.10/-0$
1206	2.00 ± 0.20	3.60 ± 0.20	8.00 ± 0.30	3.50 ± 0.05	1.75 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	4.00 ± 0.10	$1.50+0.10/-0$

Unit: mm

Reel Package



Size	Packing Q'ty	A	N	C	D	B	G	T
0603 0805 1206	5kpcs/Reel	178.0 ± 2.0	60.0 ± 0.5	13.0 ± 0.5	20(Min.)	2.0 ± 0.5	10.0 ± 1.5	14.9max.
	10kpcs/Reel	254.0 ± 2.0	100.0 ± 1.0	13.5 ± 0.5	20(Min.)	2.0 ± 0.5	10.0 ± 1.5	14.9max.
	20kpcs/Reel	330.0 ± 2.0	100.0 ± 1.0	13.5 ± 0.5	20(Min.)	2.0 ± 0.5	10.0 ± 1.5	14.9max.

Unit: mm