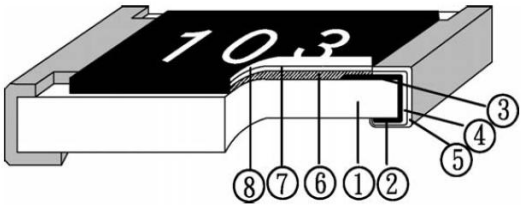
FAITHFUL LINK

RC series
Thick Film Chip Resistor

◆ Features



» Small size and light weight
» Compatible with wave and reflow soldering
» Suitable for lead free soldering
» RoHS compliant & Halogen Free

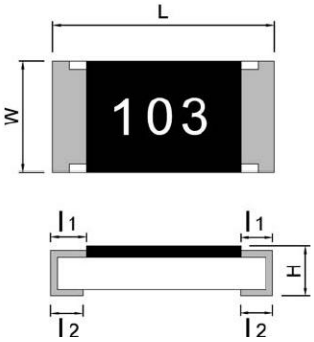
◆ Applications

» Automotive industry
» Consumer Electronics
» Measurement instrument
» Computer

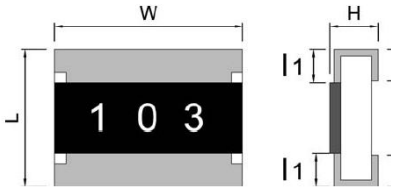
◆ Configuration

1	Alumina Substrate	5	External Electrode (Sn)
2	Bottom Electrode (Ag)	6	Resistor Layer (RuO2)
3	Top Electrode (Ag/Pd)	7	Primary Overcoat (Glass)
4	Barrier Layer (Ni)	8	Secondary Overcoat (Epoxy)

◆ Dimension



RC0201 / RC0402 / RC0603 / RC0805 / RC1206
RC1210 / RC1812 / RC2010 / RC2512



RC1218 / RC2030

Unit: mm

TYPE	L	W	H	I1	I2
RC0201	0.60±0.03	0.30±0.03	0.23±0.03	0.12±0.05	0.15±0.05
RC0402	1.00±0.01	0.50±0.05	0.30±0.05	0.20±0.10	0.25±0.10
RC0603	1.60±0.10	0.80±0.10	0.45±0.10	0.30±0.15	0.30±0.15
RC0805	2.00±0.10	1.25±0.10	0.50±0.10	0.35±0.20	0.35±0.15
RC1206	3.05±0.10	1.55±0.10	0.55±0.15	0.45±0.20	0.35±0.15
RC1210	3.05±0.10	2.55±0.10	0.55±0.10	0.50±0.20	0.50±0.20
RC1812	4.50±0.10	3.00±0.10	0.55±0.05	0.55±0.20	0.70±0.20
RC2010	5.00±0.20	2.50±0.20	0.55±0.10	0.60±0.20	0.60±0.20
RC1218	3.10±0.10	4.60±0.10	0.55±0.05	0.40±0.20	0.50±0.20
RC2512	6.40±0.20	3.20±0.20	0.60±0.15	0.60±0.25	0.90±0.25
RC2030	5.10±0.10	7.60±0.10	0.60±0.05	0.80±0.20	0.80±0.20

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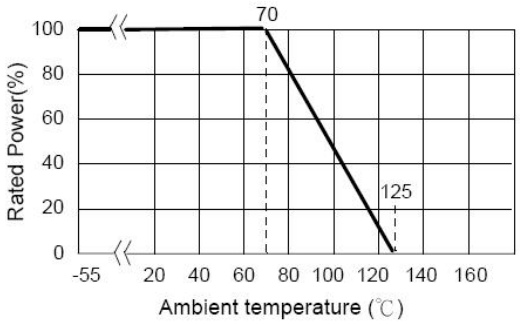
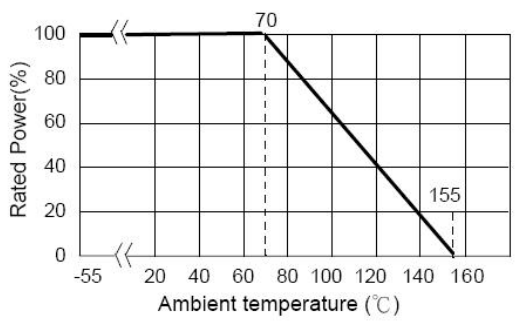
◆ Power Derating Curve

»Type RC0201 RC0402 / RC0603 / RC0805 / RC1206 / RC1210 RC1812 / RC2010 / RC1218 / RC2512 / RC2030

Operating Temperature Range	−55℃ ~ +125℃	−55℃ ~ +155℃
Explain	For resistors operated in ambient temperatures above 70℃, power rating shall be derated in accordance with figure below.	For resistors operated in ambient temperatures above 70℃, power rating shall be derated in accordance with figure below.
Figure		

◆ Voltage Rating or Current Rating Resistance

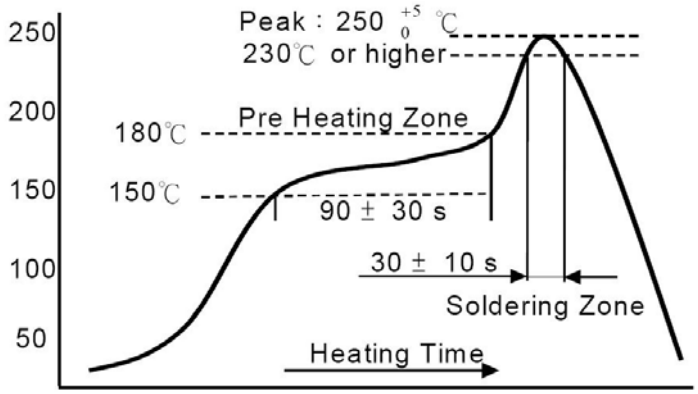
Range: ≧1Ω

Rated Voltage: The resistor shall have a DC continuous working voltage or a RMS AC continuous working voltage at commercial-line frequency and wave form corresponding to the power rating, as determined formula as following:

$E=\sqrt{P \times R}$

E=Rated voltage (V)
P=Power rating (W)
R=Nominal resistance(Ω)

◆ Soldering Profile



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◆ Rating

TYPE	Power Rating At 70℃(W)	Max Working Voltage	Max Overload Voltage	TCR (ppm/℃) Lower available	Resistance Range	
					1%	5%
RC0201	1/20 W (0.05 W)	25V	50V	-200~+400	1Ω ≦R＜10Ω	1Ω ≦R＜10Ω
				±200	10Ω ≦R≦10M Ω	10Ω ≦R≦10M Ω
RC0402	1/16 W (0.063 W)	50V	100V	0~+400	1Ω ≦R＜10Ω	1Ω ≦R＜10Ω
				±200	---	10Ω ≦R＜10MΩ
				±100	10Ω ≦R≦10M Ω	---
RC0603	1/10 W (0.1 W)	50V	100V	±400	1Ω ≦R＜10Ω	1Ω ≦R＜10Ω
				±200	---	10Ω ≦R≦10M Ω
				±100	10Ω ≦R≦10M Ω	---
RC0805	1/8 W (0.125 W)	150V	300V	±400	1Ω ≦R＜10Ω	1Ω ≦R＜10Ω
				±200	---	10Ω ≦R≦10M Ω
				±100	10Ω ≦R≦10M Ω	---
RC1206	1/4 W (0.25 W)	200V	400V	±400	1Ω ≦R＜10Ω	1Ω ≦R＜10Ω
				±200	---	10Ω ≦R≦10M Ω
				±100	10Ω ≦R≦10M Ω	---
RC1210	1/3 W (0.33 W)	200V	400V	±400	1Ω ≦R＜10Ω	1Ω ≦R＜10Ω
				±200	---	10Ω ≦R≦10M Ω
				±100	10Ω ≦R≦10M Ω	---
RC1812	1/2 W (0.5 W)	200V	400V	±400	1Ω ≦R＜10Ω	1Ω ≦R＜10Ω
				±200	---	10Ω ≦R≦10M Ω
				±100	10Ω ≦R≦10M Ω	---
RC2010	1/2 W (0.5 W)	200V	400V	±400	1Ω ≦R＜10Ω	1Ω ≦R＜10Ω
				±200	---	10Ω ≦R≦10M Ω
				±100	10Ω ≦R≦10M Ω	---
RC1218	1 W	200V	400V	±400	1Ω ≦R＜10Ω	1Ω ≦R＜10Ω
				±200	---	10Ω ≦R≦10M Ω
				±100	10Ω ≦R≦10M Ω	---
RC2512	1W	200V	400V	±400	1Ω ≦R＜10Ω	1Ω ≦R＜10Ω
				±200	---	10Ω ≦R≦10M Ω
				±100	10Ω ≦R≦10M Ω	---
RC2030	2W	200V	400V	±400	1Ω ≦R＜10Ω	1Ω ≦R＜10Ω
				±200	---	10Ω ≦R＜10K Ω
				±100	10Ω ≦R＜10K Ω	---

TYPE	0201	0402	0603	0805	1206	1210	1812	2010	1218	2512	2030
Jumper Rated Current	0.5A	1A			2A						

Note: Lower TCR is available for customer's requirement.

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◆ Part Number

RC	0603	J	100K	□	□□
Type	**Size**	**Tolerance**	**R VALUE**	**Reel Size**	**Package quantity**
RC	0201	J=5%	1Ω= 1R	Blank = 7”	(Standard Package As below)
	0402	F=1%	10KΩ= 10K	B= 13”	10 = 10K per reel
	0603		2.2MΩ=2M2	C= 10”	20 = 20K per reel
	0805				08= 8K per reel
	1206				16= 16K per reel
	1210				
	1218				
	2512				
	2030				

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

TYPE	Standard Package Q’ty
RC0201	15K per reel
RC0402	10K per reel
RC0603	5K per reel
RC0805	5K per reel
RC1206	5K per reel
RC1210	5K per reel
RC1812	4K per reel
RC2010	4K per reel
RC1218	4K per reel
RC2512	4K per reel
RC2030	1K per reel

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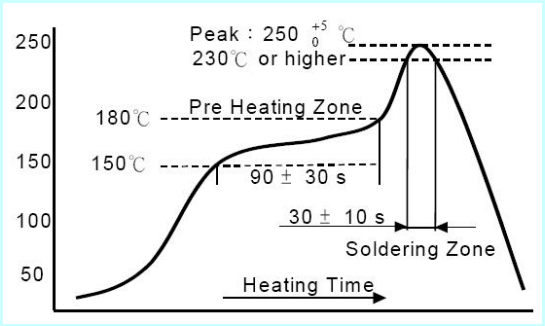
◆ Specification

Specification and Test Methods

TEST ITEM	TEST METHOD	SPECIFICATON	REQUIREMENTS
Temperature Coefficient of Resistance (T.C.R)	JIS C 5201-1 clause 4.8	-55℃ ～+155℃, 20℃ is the reference temperature	Refer to Ratings
Short Time Overload	JIS C 5201-1 clause 4.13	General： 2.5 times RCWV or Max. Overload voltage for 5 seconds. High Power： 2.5 times RCWV or Max. Overload voltage for 2 seconds.	±1%：±(1.0%+0.05Ω) ±5%：±(2.0%+0.1Ω)
IR Reflow	Sony SS-00254		±1%：±(1.0%+0.05Ω) ±5%：±(1.0%+0.05Ω)
Leaching	Sony SS-00254-9	260±5℃ for 30 seconds.	>95% Coverage
Soldering Heat	JIS C 5201-1 clause 4.18	260±5℃ for 10 seconds.	±1%：±(0.5%+0.05Ω) ±5%：±(1.0%+0.05Ω)
Temperature Cycling	JIS C 5201-1 clause 4.19	-55℃ to +155℃,5 cycles	±1%：±(0.5%+0.05Ω) ±5%：±(1.0%+0.10Ω)
Electric Iron	Sony SS-00254-5	Preheating temperature：350±10℃ Electric iron preheating time：3+1/-0 sec	±1%：±(1.0%+0.05Ω) ±5%：±(1.0%+0.05Ω)
Resistance to Solvent	JIS C 5201-1 clause 4.29	The tested resistor be immersed into isopropyl alcohol of 20~25℃ for 60 secs. Then the resistor is left in the room for 48 hrs.	±1%：±(0.5%+0.05Ω) ±5%：±(0.5%+0.05Ω)
Load Life in Humidity	JIS C 5201-1 clause 4.24	40±2℃, 90~95% R.H. or Max. working voltage for 1000 hrs with 1.5 hrs〝ON〞and 0.5 hr〝OFF〞.	±1%：±(0.5%+0.05Ω) ±5%：±(2.0%+0.05Ω)
Load Life (Endurance)	JIS C 5201-1 clause 4.25	70±2℃, or Max. working voltage for 1000 hrs with 1.5 hrs〝ON〞and 0.5 hr〝OFF〞.	±1%：±(1.0%+0.05Ω) ±5%：±(3.0%+0.10Ω)
Terminal Bending Strength	JIS C 5201-1 clause 4.33	Bending once for 5 seconds D：0402、0603、0805=5mm 1206、1210、1812=3mm 1218、2010、2512、2030=2mm	±1%：±(1.0%+0.05Ω) ±5%：±(1.0%+0.05Ω)
Insulation Resistance	JIS C 5201-1 clause 4.6	Max. Overload voltage for 1 minute.	≧10GΩ

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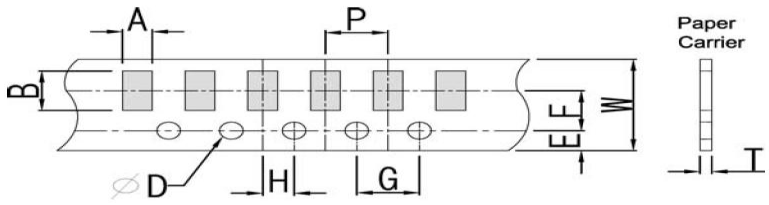
◆ Packing

Tape Dimension

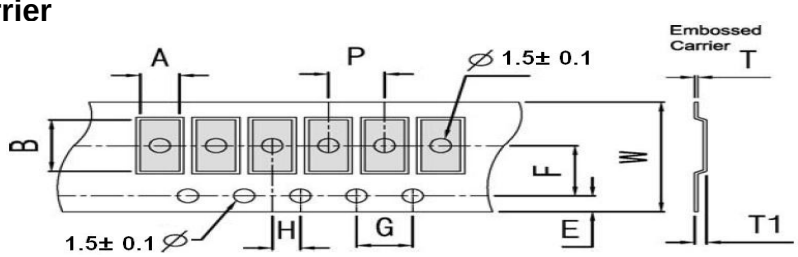
» Paper Carrier



Unit: mm

TYPE	A	B	W	E	F	G	H	T	ϕD	P
RC0201	0.45± 0.1	0.75± 0.1	8.0± 0.2	1.75± 0.1	3.5± 0.05	4.0± 0.1	2.0± 0.05	0.35± 0.1	1.5± 0.1	2.0± 0.1
RC0402	0.70± 0.1	1.20± 0.1	8.0± 0.2	1.75± 0.1	3.5± 0.05	4.0± 0.1	2.0± 0.05	0.45± 0.1	1.5± 0.1	2.0± 0.1
RC0603	1.05± 0.2	1.80± 0.2	8.0± 0.2	1.75± 0.1	3.5± 0.05	4.0± 0.1	2.0± 0.05	0.60± 0.1	1.5± 0.1	4.0± 0.1
RC0805	1.55± 0.2	2.30± 0.2	8.0± 0.2	1.75± 0.1	3.5± 0.05	4.0± 0.1	2.0± 0.05	0.75± 0.1	1.5± 0.1	4.0± 0.1
RC1206	1.90± 0.2	3.50± 0.2	8.0± 0.2	1.75± 0.1	3.5± 0.05	4.0± 0.1	2.0± 0.05	0.75± 0.1	1.5± 0.1	4.0± 0.1
RC1210	2.80± 0.2	3.50± 0.2	8.0± 0.2	1.75± 0.1	3.5± 0.05	4.0± 0.1	2.0± 0.05	0.75± 0.1	1.5± 0.1	4.0± 0.1

» Embossed Carrier



Unit: mm

TYPE	A	B	W	E	F	G	H	T	T1	P
RC1812	3.30± 0.2	4.60± 0.2	12.0± 0.2	1.75± 0.1	5.5± 0.05	4.0± 1	2.0± 0.05	0.23± 0.1	0.85± 0.15	4.0± 0.1
RC2010	2.80± 0.2	5.60± 0.2	12.0± 0.2	1.75± 0.1	5.5± 0.05	4.0± 1	2.0± 0.05	0.23± 0.1	0.85± 0.15	4.0± 0.1
RC1218	3.30± 0.2	4.60± 0.2	12.0± 0.2	1.75± 0.1	5.5± 0.05	4.0± 1	2.0± 0.05	0.23± 0.1	0.85± 0.15	4.0± 0.1
RC2512	3.40± 0.2	6.70± 0.2	12.0± 0.2	1.75± 0.1	5.5± 0.05	4.0± 1	2.0± 0.05	0.23± 0.1	0.85± 0.15	4.0± 0.1
RC2030	5.50±0.2	7.90±0.2	16.0±0.2	1.75± 0.1	7.5± 0.05	4.0± 1	2.0± 0.05	0.25± 0.1	0.85± 0.15	8.0± 0.2

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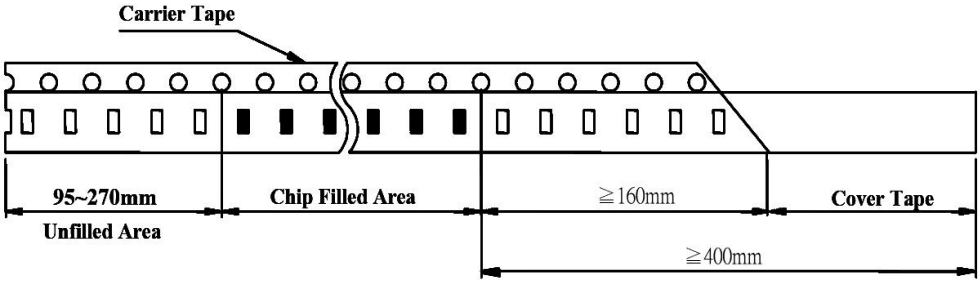
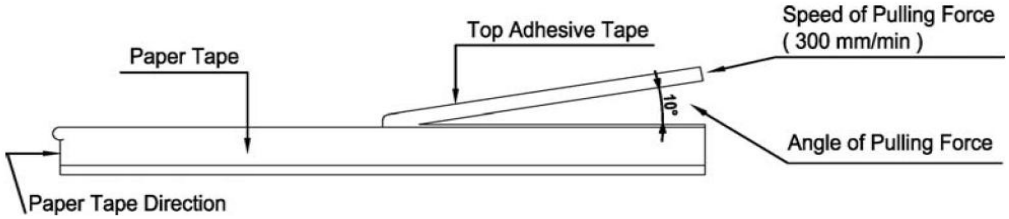
Lead Dimensions

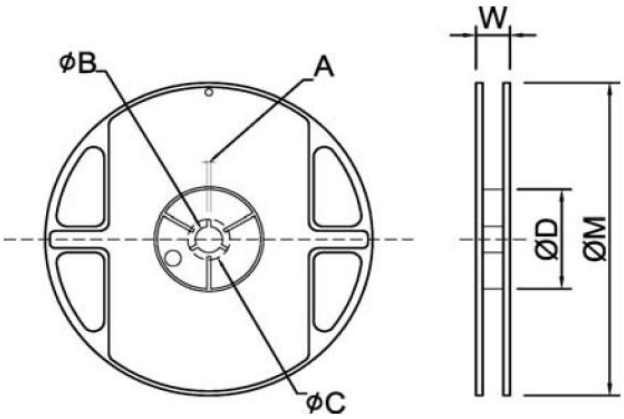


Top Adhesive Peel Off Strength：10~70g



◆ Packing

Reel Dimensions



Unit: mm

TYPE	SIZE		A	φB	φC	φD	W	φM
RC0201	7”	15K/Reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
RC0402	7”	10K/Reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
	13”	30K/Reel	2.0±0.5	13.5±1.0	21±1.0	100±1.0	11.5±2.0	330±2.0
RC0603	7”	5K/Reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0
RC0805 RC1206	10”	10K/Reel	2.0±0.5	13.5±1.0	21±1.0	100±1.0	11.5±2.0	254±2.0
RC1210	13”	20K/Reel	2.0±0.5	13.5±1.0	21±1.0	100±1.0	11.5±2.0	330±2.0
RC1812 RC2010 RC1218 RC2512	7”	4K/Reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	16.0±2.0	178±2.0
RC2030	7”	1K/Reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	19.0±2.0	178±2.0

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