

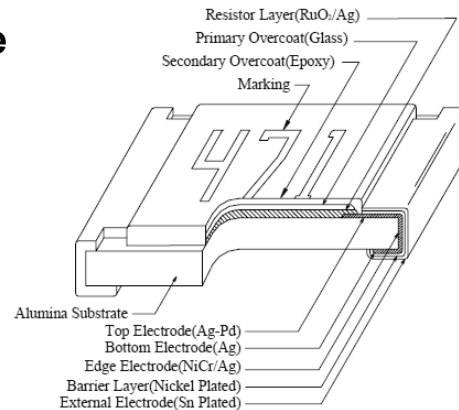
### Thick Film Chip Resistor – General Purpose

#### Features

- Small and light weight
- Excellent heat resistance and moisture resistance
- Suitable size and packaging for surface mount assembly
- RoHS Compliant

#### Applications

- For general purpose applications
- For laptop and notebook computer, memory module, digital camera and telecommunication equipment



### Absolute Maximum Ratings & Characteristics

Product Number	mm	Tolerance	Power Rating @70°C	MAX Working Voltage	MAX Overload Voltage	TCR ppm/°C	Resistance Range	Rated Working Temperature
RC0603	1608	J: ±5% F: ±1%	1/10W	50V	100V	±200	1Ω ~ 9.76Ω	-55°C ~ +155°C
						±100	10Ω ~ 1MΩ	
						±200	1.02MΩ ~ 10MΩ	

#### \*Jumper

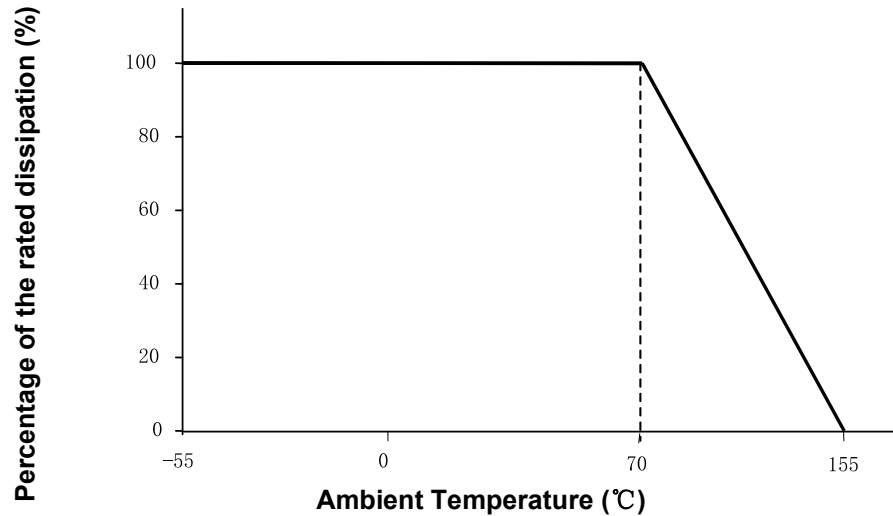
Product Number	Jumper Rated Current	Resistance	Rated Working Temperature
RC0603	1A	50mΩ (max.)	-55°C ~ +155°C

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RC0603

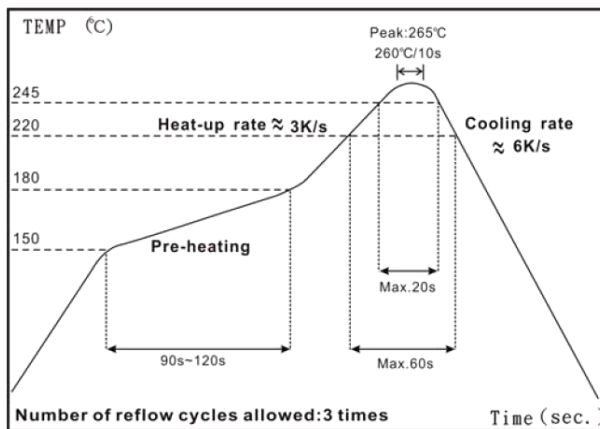
## Power Derating Curve

For resistors operate in the ambient temperature over 70°C, loading power ratio will de-rate in accordance with following curve.

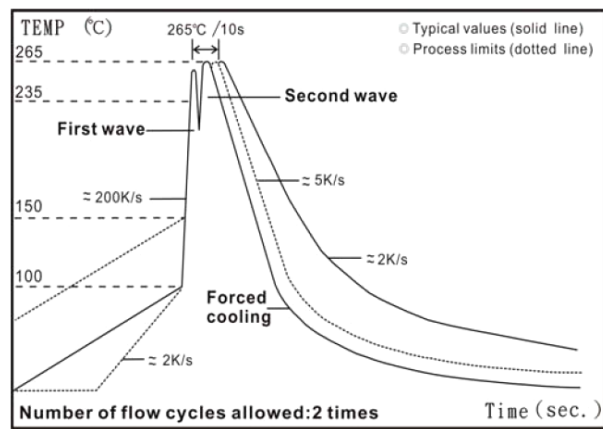


Max. Dissipation of rated power as a function of the ambient temperature

## Soldering Condition



IR Reflow soldering

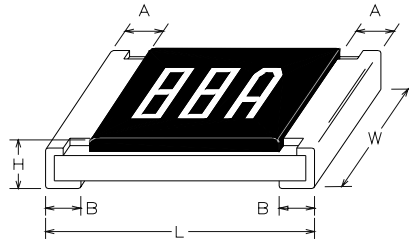


Wave soldering (flow soldering)

# Thick Film Chip Resistor - General Purpose

RC0603

## Dimensions (in mm)



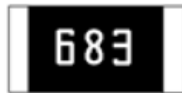
Product Number	mm	L	W	H	A	B	Average Weight
RC0603	1608	1.60 ± 0.10	0.80 ± 0.10	0.45 ± 0.10	0.30 ± 0.20	0.30 ± 0.20	2.02 mg

## Marking

- (1) ±5% Tolerance (J): 3 digits, the first two digits are significant figures; the third digit is number of zeros to follow. Letter "R" is as decimal point; Letter "0" for jumper.
- (2) ±1% Tolerance (F): E-96 marking series as in the end. (E-96 series marking code Table)

## Examples:

### 3 digits marking (±5%)



$$683 = 68 \times 10^3 \Omega$$

$$= 68000 \Omega = 68K\Omega$$

$$7R5 = 7.5 \Omega$$



Jumper

### E-96 marking (±1%)



$$49X = 316 \times 10^{-1} \Omega$$

$$= 31.6 \Omega$$

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## RC0603

### Test and Requirements

Test Item	Test Method	Test Condition	Requirement		
			±1%	±5%	Jumper
Temperature Coefficient of Resistance(T.C.R.)	JIS C 5201 4.8 IEC 60115-1 4.8	-55°C~+155,20°C is the reference temperature	Within the specification		
Short Time Overload	JIS C 5201 4.13 IEC 60115-1 4.13	2.5 times RCWV or max. overload voltage for 5 seconds	±(1.0%+0.05Ω)	±(2.0%+0.05Ω)	<50mΩ
Insulation Resistance	JIS C 5201 4.6 IEC 60115-1 4.6	Max. overload voltage for 1 minute	≥10G		
Voltage Proof	JIS C 5201 4.7 IEC 60115-1 4.7	1.42 times RCWV (RMS) for 1 minute	no breakdown or flashover		
Substrate Bending Test	JIS C 5201 4.33 IEC 60115-1 4.33	Bending once with 5 seconds for 3 mm	±(1.0%+0.05Ω)	±(1.0%+0.05Ω)	<50mΩ
Resistance to soldering heat	JIS C 5201 4.18 IEC 60115 4.18	260±5°C for 10 seconds	±(0.5%+0.05Ω)	±(1.0%+0.05Ω)	<50mΩ
Leaching	JIS C 5201 4.18 IEC 60115 4.18	260±5°C for 60 seconds	no leaching		
Solderability	JIS C 5201 4.17 IEC 60115-1 4.17	245±5°C for 3 seconds.	>95% coverage		
Endurance at upper category temperature	JIS C 5201 4.23 IEC 60115-1 2.23.2	at +155°C for 1000 hrs	±(1.0%+0.05Ω)	±(1.5%+0.10Ω)	<50mΩ
Rapid change of temperature	JIS C 5201 4.19 IEC 60115-1 4.19	-55°C to +155°C, 5 cycles	±(0.5%+0.05Ω)	±(1.0%+0.05Ω)	<50mΩ
Damp heat with load	JIS 5201 4.24	40±2°C, 90~95% R.H. or max. working voltage for 1000 hrs with 1.5hrs "ON" and 0.5 hrs "OFF"	±(2.0%+0.10Ω)	±(3.0%+0.10Ω)	<100mΩ
Endurance	JIS C 5201 4.25 IEC 60115-1 4.25.1	70±2°C, RCWV or Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"	±(2.0%+0.10Ω)	±(3.0%+0.10Ω)	<100mΩ

**Note:** RCWV: Rated Continuous Working Voltage.

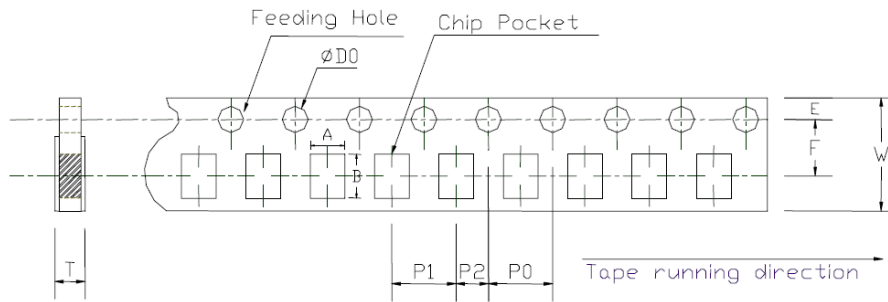
$$RCWV = \sqrt{\text{Rated power (W)} \times \text{Resistance value (R)}}$$

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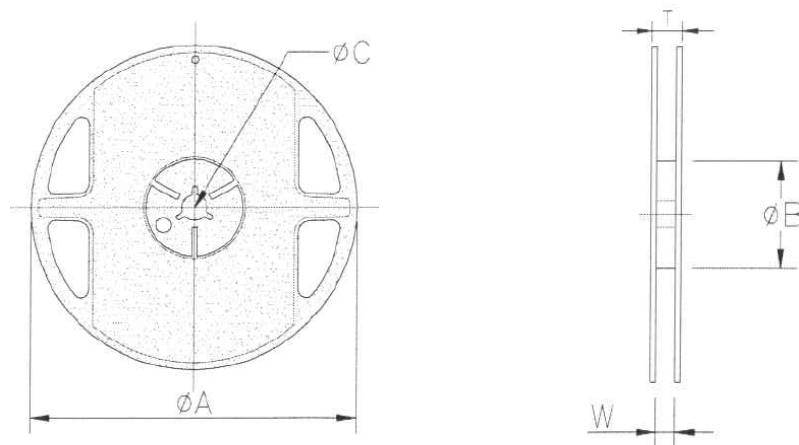
## Packing Information:

### Carrier Tape Dimensions (in mm)



Type	A	B	W	E	F	P0	P1	P2	$\psi D0$	T
RC0603	1.10±0.1	1.90±0.1	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	4.0±0.05	2.0±0.05	1.5+0.1/-0	0.70±0.1

### Reel Dimensions (in mm)



Reel Diameter	PCS per Reel	A	B	C	W	T
7"	5,000	180+0/-3	60+1/-0	13.0±0.2	9.0±0.5	11.4±1
13"	20,000	330±1	100±1	13.0±0.2	9.5±0.5	13.5±1

### Carton Information

PCS per Carton	Carton Size
300,000	400X400X200 ( in mm)

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components incorporated

Rev. C/JJ 2007-08-10

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## RC0603

Table - E-96 series marking code ( $\pm 1\%$  Tolerance)

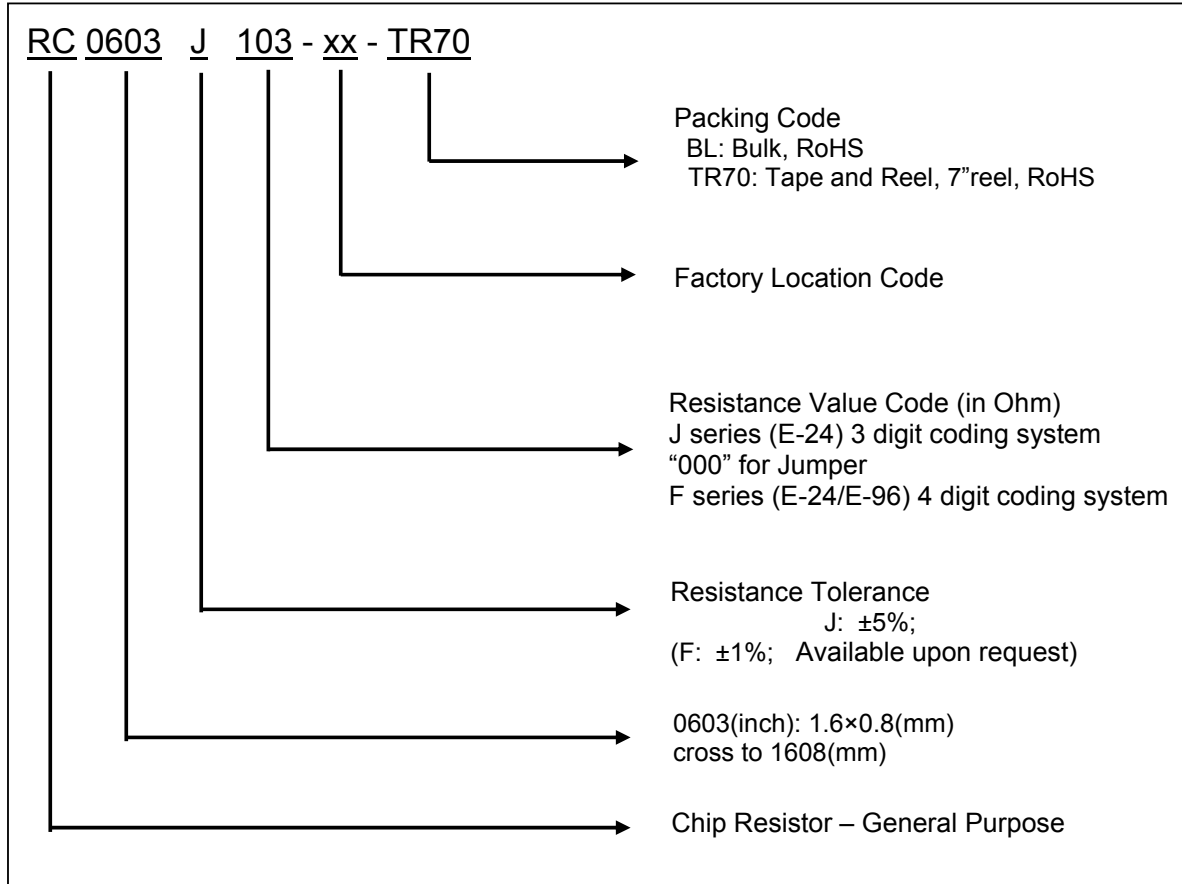
Code	R value	Code	R value	Code	R value	Code	R value	Code	R value	Code	R value	Code	R value	Code	R value
01	100	13	133	25	178	37	237	49	316	61	422	73	562	85	750
02	102	14	137	26	182	38	243	50	324	62	432	74	576	86	768
03	105	15	140	27	187	39	249	51	332	63	442	75	590	87	787
04	107	16	143	28	191	40	255	52	340	64	453	76	604	88	806
05	110	17	147	29	196	41	261	53	348	65	464	77	619	89	825
06	113	18	150	30	200	42	267	54	357	66	475	78	634	90	845
07	115	19	154	31	205	43	274	55	365	67	487	79	649	91	866
08	118	20	158	32	210	44	280	56	374	68	499	80	665	92	887
09	121	21	162	33	215	45	287	57	383	69	511	81	681	93	909
10	124	22	165	34	221	46	294	58	392	70	523	82	698	94	931
11	127	23	169	35	226	47	301	59	402	71	536	83	715	95	953
12	130	24	174	36	232	48	309	60	412	72	549	84	732	96	976

This table shows the first two digits for the three-digit EIA-96 part marking scheme.  
 The third character is the letter of multiplier: Y= $10^{-2}$  X= $10^{-1}$  A= $10^0$  B= $10^1$  C= $10^2$  D= $10^3$  E= $10^4$  F= $10^5$

# Thick Film Chip Resistor - General Purpose

RC0603

## How to Order



# Thick Film Chip Resistor - General Purpose

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RC0603

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Rev. C/JJ 2007-08-10