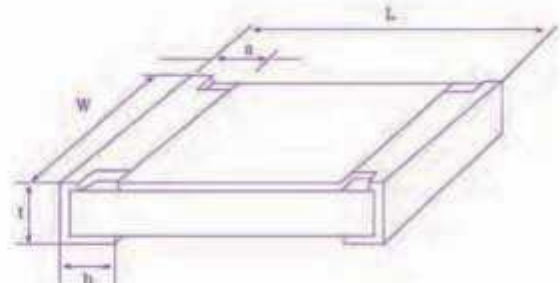
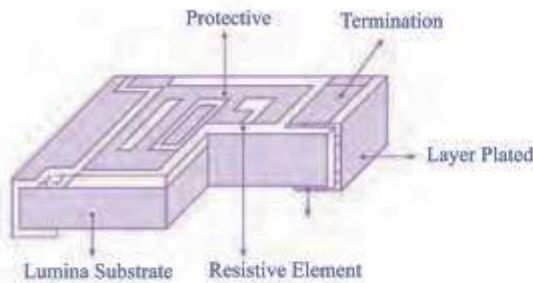


## Non-Magnetic Chip Resistors

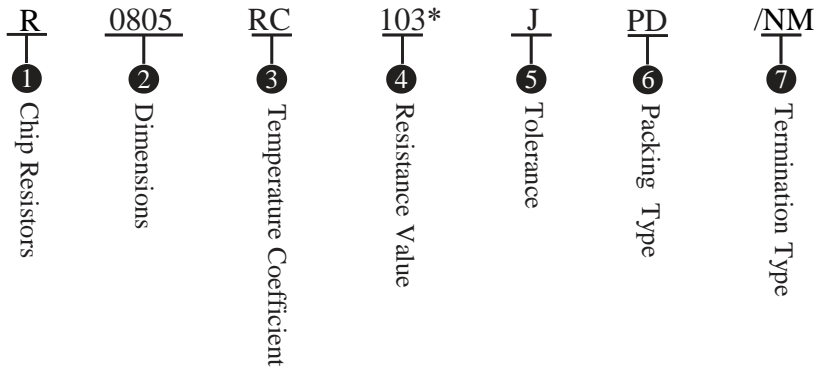
### ◆ Product Features

Miniature, light weight, suited for reflow and flow solder, low assembly cost, suite for automatic SMT equipment, Superior mechanical and frequency characteristics. All products are RoHS compliant. Non-magnetism resistive are applicable for MRI

### ◆ Construction and Dimensions



### ◆ Part Numbering



\* J-tolerance (5%) has 3-character Resistance Value Code  
F-tolerance (1%) has 4-character Resistance Value Code

### ① Chip Resistors

Code	Chip Resistors
R	General

## ② Dimensions

Code	Dimensions (Unit:mm)				
	L	W	t(max)	a	b
0603	1.6±0.15	0.8±0.15	0.45±0.1	0.3±0.15	0.2±0.15
0805	2.0±0.15	1.25±0.15	0.5±0.1	0.4±0.20	0.3±0.15
1206	3.1±0.15	1.6±0.15	0.60±0.1	0.5±0.20	0.4±0.15

## ③ Temperature Coefficients

Code	Temperature Coefficients
RC	≤ ± 100PPM/°C
RD	≤ ± 200PPM/°C

## ④ Resistance Value

Tolerance	J - 5%	J - 5%	F - 1%	0
Code	1R0	103	1003	000
Resistance	1.0Ω	10KΩ	100KΩ	Chip Jumper

Note: The resistance of jumper is defined less 0.05 Ω.

## ⑤ Tolerance

Code	F	J	0
Tolerance	±1%	±5%	Chip Jumper

## ⑥ Packaging Type

Code	Packaging Type
PD	Tape carrier packaging

## ⑦ Termination Type

Code	Termination Type
/NM	Non-magnetic Copper Plated 100% Sn(RoHS)

### ◆ Standard Resistance Series

E-24 Tolerance  $\pm 5\%$

1.0	1.1	1.2	1.3	1.6	1.8	2.0	2.2	2.4	2.7	3.0
3.3	3.6	3.9	4.3	5.1	5.6	6.2	6.8	7.5	8.2	9.1

E-96 Tolerance  $\pm 1\%$

1.00	1.02	1.05	1.07	1.10	1.13	1.15	1.18	1.21	1.24	1.27	1.30
1.33	1.37	1.40	1.43	1.47	1.50	1.54	1.58	1.62	1.65	1.69	1.74
1.78	1.82	1.87	1.91	1.96	2.00	2.05	2.10	2.15	2.21	2.26	2.32
2.37	2.43	2.49	2.55	2.61	2.67	2.74	2.80	2.87	2.94	3.01	3.09
3.16	3.24	3.32	3.40	3.48	3.57	3.65	3.74	3.83	3.92	4.02	4.12
4.22	4.32	4.42	4.53	4.64	4.75	4.87	4.99	5.11	5.23	5.36	5.49
5.62	5.76	5.90	6.04	6.19	6.34	6.49	6.65	6.81	6.98	7.15	7.32
7.50	7.68	7.87	8.06	8.25	8.45	8.66	8.87	9.09	9.31	9.53	9.76

### ◆ Rated Power

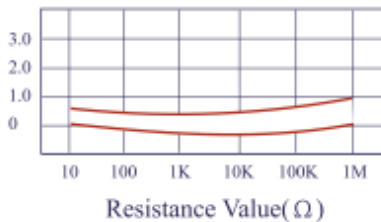
Item	0603	0805	1206
Rated Power	1/10W	1/8W	1/4W
Max. Operating Voltage	50V	150V	200V
Max. Over Load Voltage	100V	200V	400V
Resistance Tolerance	$\pm 1\%$ (F)		$\pm 5\%$ (J)
Resistance Range	E-24 E-96		
Jumper Rated Current	1A	2A	2A
Jumper Resistance Value	50m $\Omega$ MAX		
Operating Temperature Range	-55°C to +125°C		
Temperature Coefficient (TC)	$\pm 100\text{ppm}/^\circ\text{C}$ or $\pm 200\text{ppm}/^\circ\text{C}$		
Rated Temperature	+70°C		

◆ **Characteristics**

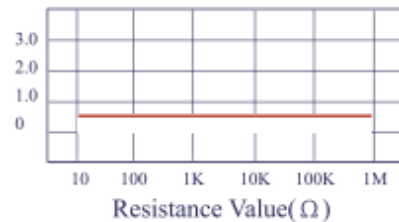
Item	1%	5%	Test Methods (JIS C 5202)
Temperature Cycling	$\pm(0.5\%+0.05\Omega)$	$\pm(1\%+0.05\Omega)$	$-55^{\circ}\text{C} \sim +125^{\circ}\text{C}$ For 5 cycles
Short Time Over Load	$\pm(1\%+0.05\Omega)$	$\pm(2.0\%+0.1\Omega)$	Rated Voltage $\times 2.5$ For 5 Seconds
Resistance To Soldering Heat	$\pm(0.5\%+0.05\Omega)$	$\pm(1\%+0.05\Omega)$	$260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ For 10 Seconds
Moisture Loading Life	$\pm(0.5\%+0.05\Omega)$	$\pm(3.0\%+0.1\Omega)$	$60^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 90 ~ 95%RH 1000Hrs at RCWV 1.5 Hrs ON 0.5Hrs OFF
Load Life	$\pm(1\%+0.05\Omega)$	$\pm(3.0\%+0.1\Omega)$	$70^{\circ}\text{C} \pm 2^{\circ}\text{C}$ , 1000Hrs at RCWV 1.5 Hrs ON 0.5Hrs OFF
Solderability	Coverage $\geq 95\%$	Coverage $\geq 95\%$	$230^{\circ}\text{C} \pm 5^{\circ}\text{C}$ For 3 Seconds
Bending Strength	$\pm(1\%+0.05\Omega)$	$\pm(1\%+0.05\Omega)$	Bending Distance: 3mm (10 Seconds)

◆ **Characteristics Data**

**Load Life 1000Hrs  $\Delta R/R(\%)$**



**Moisture Loading Life 1000Hrs  $\Delta R/R(\%)$**



**Short time overload  $\Delta R/R(\%)$**

