

## Thick Film Chip Resistor – High Value

### Features

- Small Size and light weight
- Highly reliable multilayer electrode construction
- Excellent performance with highly permissible voltage
- Suitable size and packing for surface mount assembly
- Suitable for all soldering process
- RoHS Compliant and Halogen Free



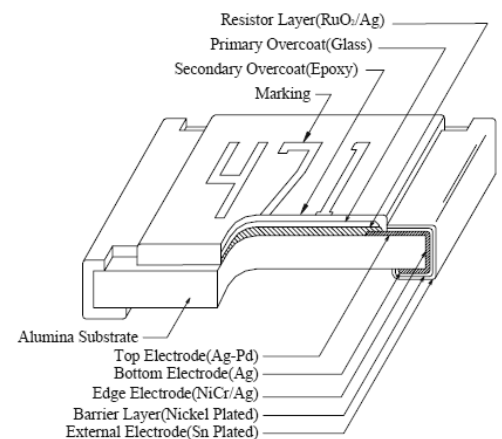
**HALOGEN  
FREE**

### Applications

- Switching power supply, Converter
- LCD/LCD-TV, Computer, Telecommunication Equipment
- Automotive industry
- Measuring equipment

### Constructions

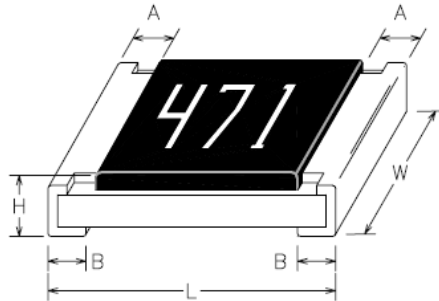
- The resistor is constructed on the alumina substrate body.
- Top electrodes are added to each end and connected with resistive paste on top surface of the alumina substrate.
- The resistive layer is made by resistive paste that is prepared to approach the nominal value.
- Laser trimming process makes the resistance meet the Nominal value
- The resistive layer is protected by primary overcoat and secondary overcoat.
- The barrier layer is added to edge electrodes for plating with external electrode, making the resistor easily mounted on the PCB



# Thick Film Chip Resistor - High Value

## RCH0402~ RCH2512

### Dimensions (in mm)



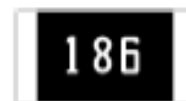
Type	Size Inch (mm)	L	W	H	A	B	Average Weight
RCH0402	0402(1005)	1.00 ± 0.05	0.50± 0.05	0.35 ± 0.05	0.20 ± 0.10	0.20 ± 0.10	0.620 mg
RCH0603	0603(1608)	1.60 ± 0.10	0.80± 0.10	0.45 ± 0.10	0.30 ± 0.20	0.30 ± 0.20	2.042 mg
RCH0805	0805(2012)	2.00 ± 0.10	1.25± 0.10	0.50 ± 0.10	0.35 ± 0.20	0.40 ± 0.20	4.368 mg
RCH1206	1206(3216)	3.10 ± 0.10	1.55± 0.10	0.55 ± 0.10	0.50 ± 0.25	0.50 ± 0.20	8.947 mg
RCH1210	1210(3225)	3.20 ± 0.20	2.60± 0.15	0.55 ± 0.10	0.50 ± 0.25	0.50 ± 0.20	15.959 mg
RCH2010	2010(5025)	5.00 ± 0.20	2.50± 0.15	0.55 ± 0.10	0.60 ± 0.25	0.50 ± 0.20	24.241 mg
RCH2512	2512(6432)	6.35 ± 0.20	3.20± 0.15	0.55 ± 0.10	0.60 ± 0.25	0.50 ± 0.20	39.448 mg

### Marking Information

1. RCH0402 is without marking due to the size is too small.
2. RCH0603~RCH2512:E24 series,3 digits Code, the first two digits are significant figures; the third digit is number of zeros to follow.



No Marking



186 =  $18 \times 10^6 \Omega$   
= 18M $\Omega$

# Thick Film Chip Resistor - High Value

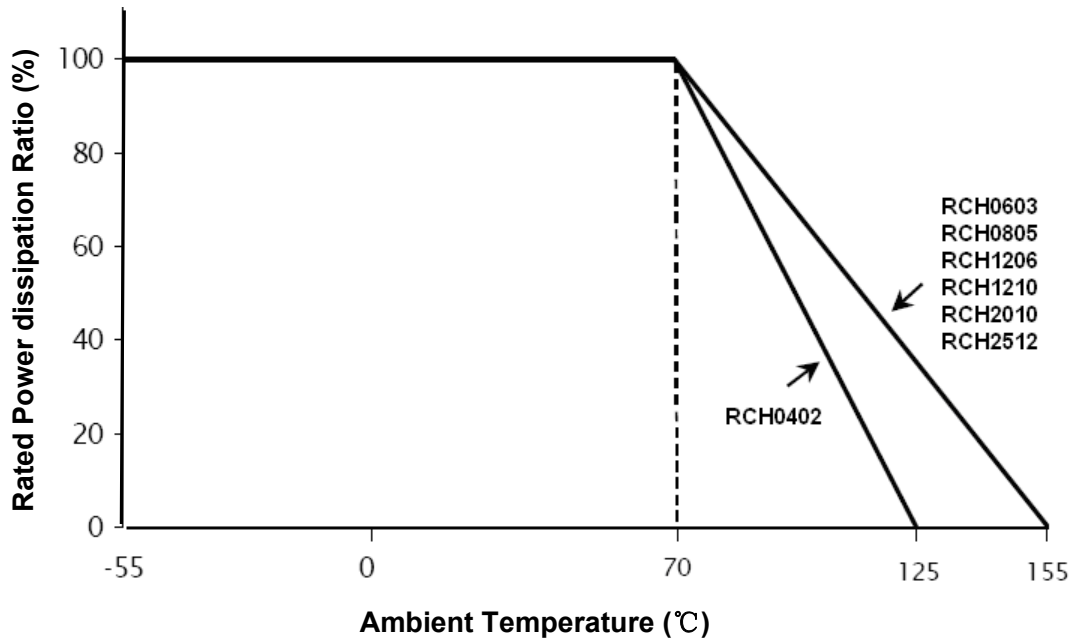
## RCH0402~ RCH2512

### Absolute Maximum Ratings & Electrical Characteristics

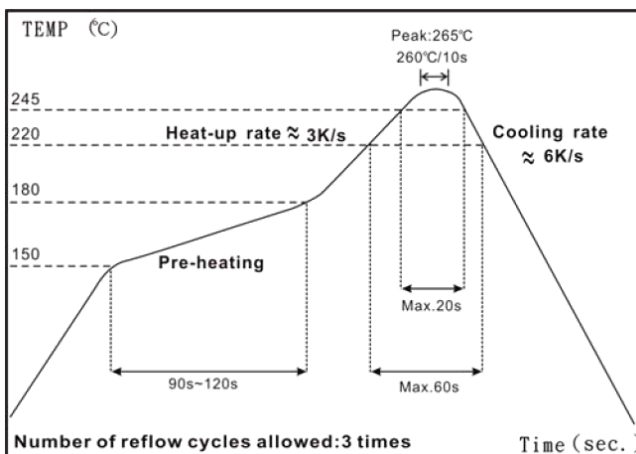
Type	Size Inch (mm)	Tolerance (E24)	Power Rating @70°C	MAX. Working Voltage	MAX. Overload Voltage	TCR (ppm/°C)	Resistance Range	Operating Temperature Range
RCH0402	0402(1005)	J: ±5% F: ±1%	1/16W	50V	100V	±200	10.2MΩ ~ 20MΩ	-55°C~+125°C
						±400	20.5MΩ ~ 39MΩ	
RCH0603	0603(1608)	J: ±5% F: ±1%	1/10W	50V	100V	±200	10.2MΩ ~ 20MΩ	-55°C~+155°C
						±400	20.5MΩ ~ 100MΩ	
RCH0805	0805(2012)	J: ±5% F: ±1%	1/8W	150V	300V	±200	10.2MΩ ~ 20MΩ	-55°C~+155°C
						±400	20.5MΩ ~ 100MΩ	
RCH1206	1206(3216)	J: ±5% F: ±1%	1/4W	200V	400V	±200	10.2MΩ ~ 20MΩ	-55°C~+155°C
						±400	20.5MΩ ~ 100MΩ	
RCH1210	1210(3225)	J: ±5% F: ±1%	1/3W	200V	400V	±200	10.2MΩ ~ 20MΩ	-55°C~+155°C
						±400	20.5MΩ ~ 39MΩ	
RCH2010	2010(5025)	J: ±5% F: ±1%	3/4W	200V	400V	±200	10.2MΩ ~ 20MΩ	-55°C~+155°C
RCH2512	2512(6432)	J: ±5% F: ±1%	1W	250V	500V	±200	10.2MΩ ~ 20MΩ	-55°C~+155°C

### Power Derating Curve

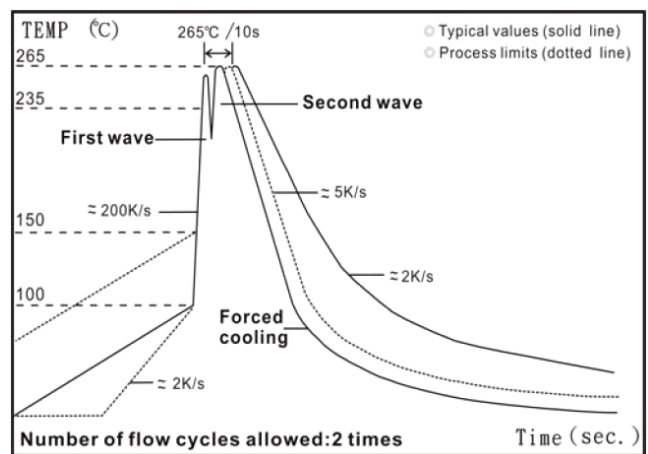
For resistors operate in the ambient temperature over 70°C, loading power ratio will derate in accordance with following curve.



### Soldering Condition



IR Reflow soldering



Wave soldering (flow soldering)

# Thick Film Chip Resistor - High Value

## RCH0402~ RCH2512

### Test and Requirements

Test Item	Test Method	Test Condition	Requirement	
			±1%	±5%
Temperature Coefficient of Resistance(T.C.R.)	JIS C 5201 4.8 IEC 60115-1 4.8	-55°C~+125°C /+155°C,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 Vw or max. overload voltage for 5 seconds	±(1.0%+0.05Ω)	±(2.0%+0.05Ω)
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 Vw (RMS) for 1 minute	no breakdown or flashover	
Substrate Bending Test	JIS C 5201 4.33 IEC 60115-1 4.33	Bending once for 5 Seconds,2010 &2512 size: 2 mm Other Size:3mm	±(1.0%+0.05Ω)	±(1.0%+0.05Ω)
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)
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 +125°C/+155°C for 1000 hrs	±(1.0%+0.05Ω)	±(1.5%+0.10Ω)
Rapid change of temperature	JIS C 5201 4.19 IEC 60115-1 4.19	-55°C to +125°C/+155°C, 5 cycles	±(0.5%+0.05Ω)	±(1.0%+0.05Ω)
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)
Endurance	JIS C 5201 4.25 IEC 60115-1 4.25.1	70±2°C, Vw 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)

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

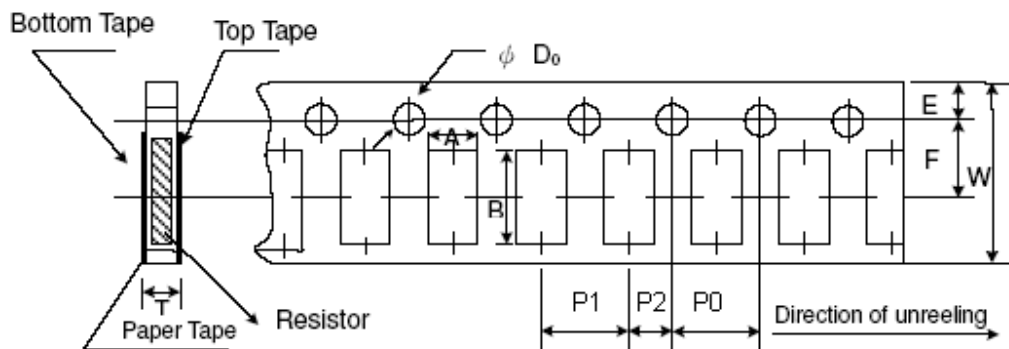
$$Vw = \sqrt{\text{Rated power (P)} \times \text{Resistance value (R)}}$$

# Thick Film Chip Resistor - High Value

## RCH0402~ RCH2512

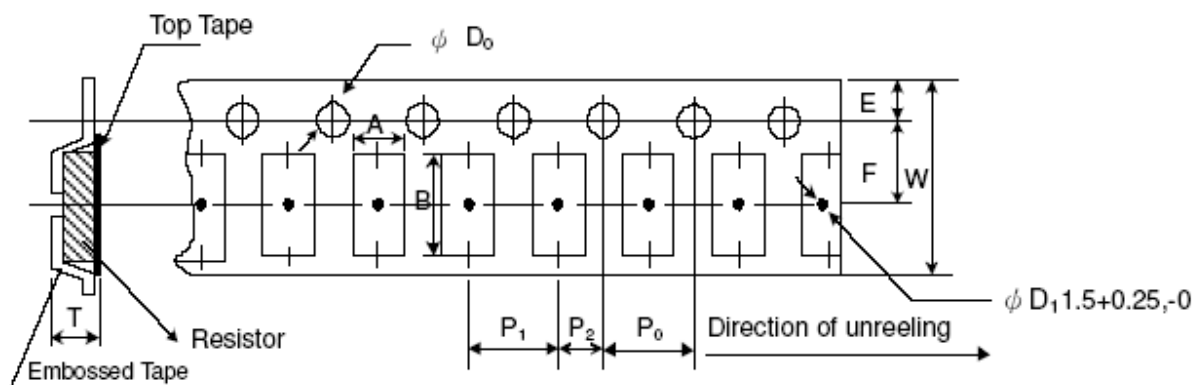
### Packing Information:

#### Carrier Tape Dimensions (in mm)



Type	A	B	W	E	F	P0	P1	P2	ψD0	T
RCH0402	0.65±0.1	1.15±0.1	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	2.0±0.05	2.0±0.05	1.5+0.1/-0	0.45±0.1
RCH0603	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
RCH0805	1.60±0.1	2.40±0.2	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	0.85±0.1
RCH1206	1.90±0.1	3.50±0.2	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	0.85±0.1
RCH1210	2.80±0.1	3.50±0.2	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	0.85±0.1

#### Embossed Plastic Tape Dimensions (in mm)

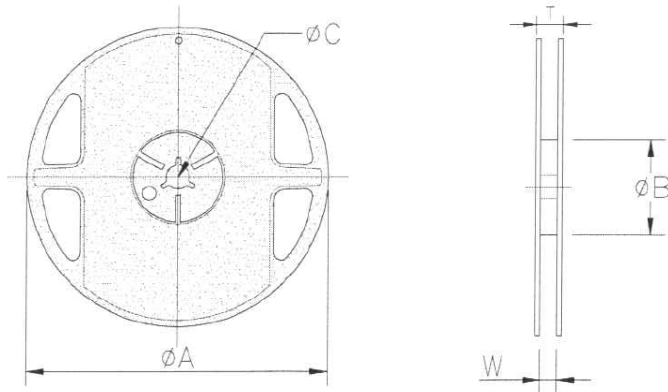


Type	A	B	W	E	F	P0	P1	P2	ψD0	T
RCH2010	2.80±0.2	5.50±0.2	12.0±0.3	1.75±0.1	5.5±0.05	4.0±0.1	4.0±0.1	2.0±0.05	1.5+0.1/-0	Max1.2
RCH2512	3.50±0.2	6.70±0.2	12.0±0.3	1.75±0.1	5.5±0.05	4.0±0.1	4.0±0.1	2.0±0.05	1.5+0.1/-0	Max1.2

# Thick Film Chip Resistor - High Value

## RCH0402~ RCH2512

### Reel Dimensions (in mm)



Type	Reel Diameter	Reel Quantity	$\psi A$	$\psi B$	$\psi C$	W	T
RCH0402	7"	10000	180+0/-3	60+1/-0	13.0±0.2	9.0±0.5	12.5±0.5
RCH0603		5000					
RCH0805							
RCH1206							
RCH1210							
RCH2010		4000	180+0/-3	60+1/-0	13.0±0.5	13.0±0.5	15.5±0.5
RCH2512							

### Carton Information

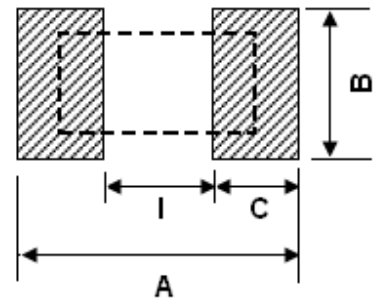
Type	PCS per Carton	Carton Size
RCH0402	600,000	400X400X200 ( in mm)
RCH0603	300,000	
RCH0805		
RCH1206		
RCH1210		
RCH2010	192,000	
RCH2512		

# Thick Film Chip Resistor - High Value

RCH0402~ RCH2512

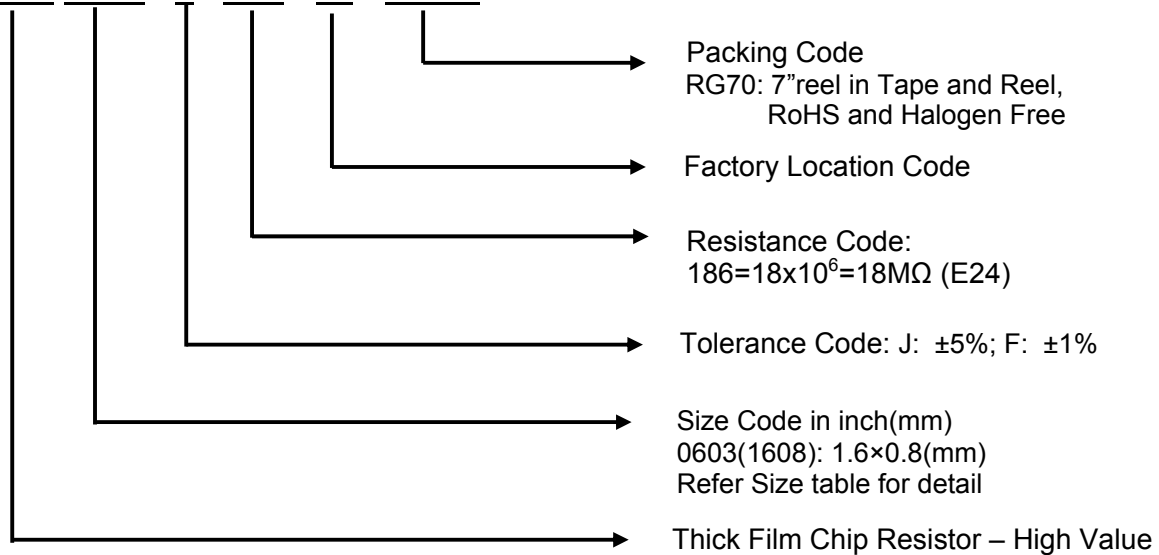
## Recommend Soldering PAD (in mm)

Type	A	B	C	I
RCH0402	1.40	0.60	0.45	0.50
RCH0603	2.10	0.90	0.60	0.90
RCH0805	2.60	1.30	0.70	1.20
RCH1206	3.80	1.60	0.90	2.00
RCH1210	3.80	2.80	0.90	2.00
RCH2010	5.60	2.80	0.90	3.80
RCH2512	7.00	3.50	1.60	3.80



## How to Order

RCH 0603 J 186 - xx - RG70





# Thick Film Chip Resistor - High Valu

RCH0402~ RCH2512

## How to contact us:

### US HEADQUARTERS

28040 WEST HARRISON PARKWAY, VALENCIA, CA 91355-4162

Tel: (800) TAITRON (800) 824-8766 (661) 257-6060

Fax: (800) TAITFAX (800) 824-8329 (661) 257-6415

Email: [taitron@taitroncomponents.com](mailto:taitron@taitroncomponents.com)

Http://[www.taitroncomponents.com](http://www.taitroncomponents.com)

### TAITRON COMPONENTS MEXICO, S.A .DE C.V.

BOULEVARD CENTRAL 5000 INTERIOR 5 PARQUE INDUSTRIAL ATITALAQUIA, HIDALGO C.P.

42970 MEXICO

Tel: +52-55-5560-1519

Fax: +52-55-5560-2190

### TAITRON COMPONETS INCORPORATED E REPRESENTAÇÕES DO BRASIL LTDA

RUA DOMINGOS DE MORAIS, 2777, 2.ANDAR, SALA 24 SAÚDE - SÃO PAULO-SP 04035-001 BRAZIL

Tel: +55-11-5574-7949

Fax: +55-11-5572-0052

### TAITRON COMPONETS INCORPORATED, SHANGHAI REPRESENTATIVE OFFICE

METROBANK PLASA, 1160 WEST YAN'AN ROAD, SUITE 1502, SHANGHAI, 200052, CHINA

Tel: +86-21-5424-9942

Fax: +86-21-5424-9931