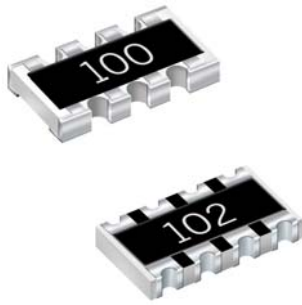


# Thick Film Array Chip Resistors- RA series



## Features

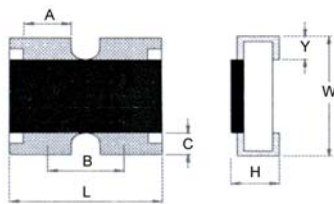
- Small size and light weight.
- Reduction of assembly costs and matching with placement Machines.
- Reliability, High quality.
- Suitable for both IR reflow soldering and wave soldering.

## Applications

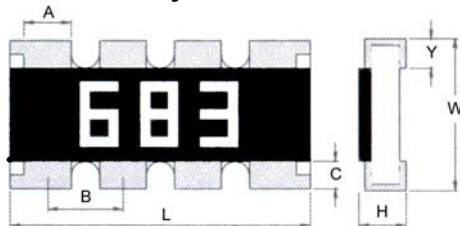
- Entertainment
- Computer & Relative Products
- Communication Equipment
- Power Equipment
- Measuring Instrument

## Dimensions

### 4P2R Convex Array

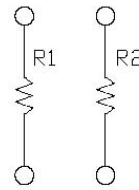


### 8P4R Convex Array



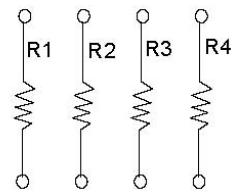
## Equivalent Circuit Diagram

### 4P2R



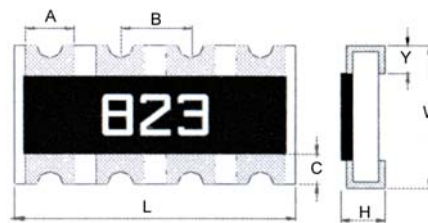
$$R1=R2$$

### 8P4R



$$R1=R2=R3=R4$$

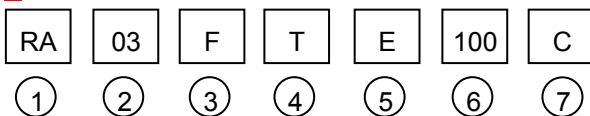
### Concave Array



Unit: mm

TYPE	Number of Resistors	L	W	H	A	B	C	Y
RA04	2	1.00±0.10	1.00±0.10	0.35±0.10	0.25±0.10	0.65±0.05	0.20±0.10	0.25±0.10
RA02	4	2.00±0.20	1.00±0.15	0.45±0.10	0.30±0.10	0.50±0.10	0.22±0.15	0.22±0.15
RA03	4	3.20±0.20	1.60±0.15	0.55±0.10	0.50±0.15	0.80±0.10	0.30±0.15	0.30±0.15
RA03-C	4	3.20±0.20	1.60±0.15	0.55±0.10	0.50±0.15	0.80±0.10	0.30±0.15	0.40±0.15

## Part Numbering



### ① Product Type

Product Type	Type
RA	Thick Film Chip Resistors Array

### ② Dimensions (L×W)

Codes	Dimensions (LxW)	EIA
04	1.0×1.0mm	0402×2
02	2.0×1.0mm	0402×4
03	3.2×1.6mm	0603×4

### ③ Resistance Tolerance

Codes	Resistance Tolerance
F	±1 %
J	±5 %

### ④ Packaging

Codes	Type
T	Taping Reel

### ⑤ TCR

Codes	Type
F	±200ppm
-	No Specified

### ⑥ Resistance

Codes	Type
100	10Ω
49R9	49.9Ω
221	220Ω
102	1000Ω
492	4900Ω
103	10000Ω

### ⑦ Special

Codes	Type
	Convex
C	Concave

## Electrical Characteristics Specifications

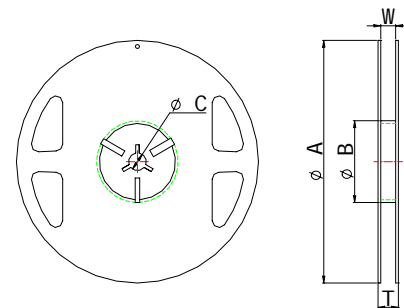
Type	Item	Power Rating / Rated Current	Operating Temp. Range	Max Working Voltage	Max Overload Voltage	Number of Resistors	Resistance Tolerance		Resistance Range	TCR (PPM/°C)
Jumper	RA04	1/16W	-55 ~ +125°C	25V	50V	2	±1%	E24	10Ω~1MΩ	±200
		±5%					E96			
Jumper	RA02	1/16W	-55 ~ +125°C	25V	50V	4	±1%	E24	10Ω~1MΩ	±200
		±5%					E96			
Jumper	RA03	1/10W	-55 ~ +155°C	50V	100V	4	±1%	E24	10Ω~1MΩ	±200
		±5%					E96			
Jumper	RA03-C	1/16W	-55 ~ +155°C	50V	100V	4	±1%	E24	10Ω~1MΩ	±200
		±5%					E96			

## Packaging

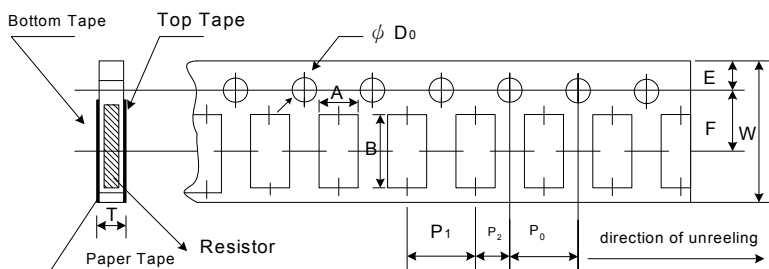
### Reel Specifications & Packaging Quantity

Unit : mm

Series	ΦA	ΦB	ΦC	W	T	Paper Tape (EA)
RA04	180+0/-3	60min.	13.0±1	9.0±1.0	11.4±2.0	10000
RA02	180+0/-3	60min.	13.0±1	9.0±1.0	11.4±2.0	10000
RA03	180+0/-3	60min.	13.0±1	9.0±1.0	11.4±2.0	5000



### Paper Tape Specifications



Unit : mm

Series	A	B	W	F	E	P <sub>1</sub>	P <sub>2</sub>	P <sub>0</sub>	ΦD <sub>0</sub>	T
RA04	1.2±0.1	1.2±0.1	8.0±0.2	3.50±0.05	1.75±0.01	2.00±0.05	2.00±0.05	4.00±0.10	1.50+0.1/-0	0.85±0.1
RA02	1.2±0.1	2.2±0.2	8.0±0.2	3.50±0.05	1.75±0.01	2.00±0.05	2.00±0.05	4.00±0.10	1.50+0.1/-0	0.85±0.1
RA03	2.0±0.1	3.6±0.1	8.0±0.2	3.50±0.05	1.75±0.01	4.00±0.05	2.00±0.05	4.00±0.10	1.50+0.1/-0	0.85±0.1

## Environmental Characteristics

Item	Specification		Test Method
	1%	5%	
Temperature Coefficient of Resistance	As Spec.		<b>MIL-STD-202F Method 304</b> +25/-55/+25/+125/+25°C
Short Time Overload	$\pm(1.0\%+0.05\Omega)$	$\pm(2.0\%+0.05\Omega)$	RCWV*2.5 or Max Overloading Voltage · 5 seconds
	Jumper <50mΩ		
Insulation Resistance	$\geq 10G\Omega$		<b>MIL-STD-202, Method 302</b> RCOV for 1minute
Voltage Proof	No breakdown or flashover		<b>MIL-STD-202F Method 301</b> Apply Max Overload Voltage for 1 minute
Resistance to Soldering Heat	$\pm(0.5\%+0.05\Omega)$	$\pm(1.0\%+0.05\Omega)$	<b>MIL-STD-202F Method 210E</b> 260±5°C, 10±1second
	Jumper <50mΩ		
Solderability	>95% Coverage		<b>MIL-STD-202F Method 208H</b> 245±5°C, 3±0.5 second
Resistance to Dry Heat	$\pm(1.0\%+0.05\Omega)$	$\pm(1.5\%+0.10\Omega)$	<b>JIS-C-5202-7.2</b> 125°C, 96 hrs. without load
	Jumper <50mΩ		
Thermal Shock	$\pm(0.5\%+0.05\Omega)$	$\pm(1.0\%+0.05\Omega)$	<b>MIL-STD-202F Method 107G</b> -55°C~150°C, 5 cycles
	Jumper <50mΩ		
Humidity (steady state)	$\pm(2.0\%+0.10\Omega)$	$\pm(3.0\%+0.10\Omega)$	<b>MIL-STD-202F, Method 103B</b> 40±2°C, 90~95% R.H. for 1000 hrs, without load
	Jumper <50mΩ		
Load Life	$\pm(2.0\%+0.1\Omega)$	$\pm(3.0\%+0.1\Omega)$	<b>MIL-STD-202F Method 108A</b> RCWV · 70°C · 1.5 hours on · 0.5 hrs off Total 1000~1048 hrs.
	Jumper <50mΩ		