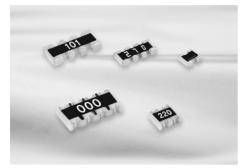
# Arrays



### Feature

- Reducing SMD surface area (40% reduced).
  Reducing SMD costs (75% reduced).
  Both flow and reflow soldering are applicable.

- Convex & concave type.

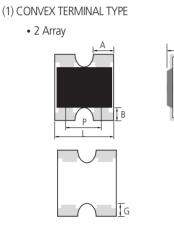
The product of lead-free terminal is RoHS compliant. PhO(lead oxide) is included in the glass of our product which is prescribed

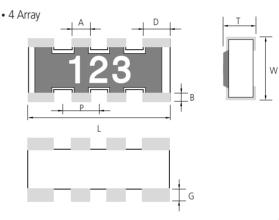
on RoHS appendix as an exception.

### Application

- For semiconductor devices.
- For computers, digital circuits.

### Structure and Dimensions

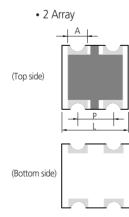


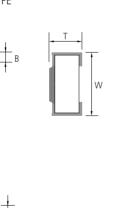


(UNIT: mm)

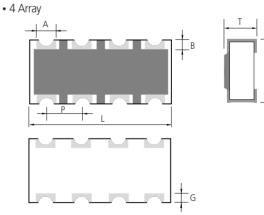
Туре	L	W	Т	Α	D	В	G	Р	Average Weight
RP102P	1.00±0.10	1.00±0.10	0.35±0.10	0.33±0.05	-	0.20±0.10	0.25±0.10	0.65±0.10	1.1mg
RP104P	2.00±0.10	1.00±0.10	0.35±0.10	0.30±0.15	0.40±0.15	0.15±0.10	0.25±0.15	0.50±0.15	2.2mg
RP164P	3.20±0.10	1.60±0.10	0.50±0.10	0.40±0.15	0.60±0.15	0.30±0.15	0.30±0.15	0.80±0.15	8.9mg

#### (2) CONCAVE TERMINAL TYPE





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(UNIT: mm)

W

Туре	L	W	Т	Α	В	G	Р	Average Weight
RN102P	1.00±0.10	1.00±0.10	0.35±0.10	0.30±0.10	0.15±0.10	0.25±0.15	0.5±0.10	1.2mg
RN104P	2.00±0.10	1.00±0.10	0.40±0.10	0.30±0.10	0.15±0.10	0.25±0.15	0.5±0.10	2.8mg

# Parts Numbering System

• The part number system shall be in the following format

, ,		5				
RN	16	4P	J	100	FS	
Code Designation	Dimension	Resistors	Tolerance	Resistance Value	Packaging Code	
RP: Convex type array RN: Concave type array	10: 1005 16: 1608	2P: 2 Pieces 4P: 4 Pieces	J: ±5% *Jumper:' J'	3 digit coding system (IEC coding system) E-24 series	CS : Tape Packaging 7" ES : Tape Packaging 10" AS : Tape Packaging 13"	

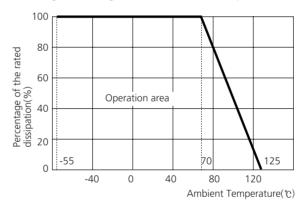
### Specification

Туре	Power Rating (W)	Working Voltage (MAX)	Overload Voltage (MAX)	TCR (ppm/ ୯)	Resistance Range (ହ)	Rated Ambient Temperature	Rated Working Temperature	Recommended Soldering Conditions
102P, 104P	1/16	25(V)	50(V)	$\pm$ 200ppm	1Ω~1MΩ	70°C	-55°c~+125°c	General
162P, 164P	1/10	50(V)	100(V)	$\pm$ 200ppm	1 22 - 11 01 22	700	-22 (14122 (	Structure

 Rated voltage (V) =  $\sqrt{\text{Rated power(W)} \times \text{Normal resistance value (R)}}$ Rated voltage should be lower than (MAX) working voltage.

### **Power Derating Curve**

The rated power is the maximum continuous loading power at 70 °C ambient temperature. For ambient temperature above 70°C, the loading power follows the below power derating curve. (The load current shall be derated according to Derating curve in case of the 'Jumper')

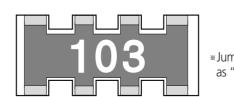


### **Jumper Resistors**

Туре	Resistance	Current Rating	Rated Ambient Temperature	Rated Working Temperature	
102P, 104P	E0mo May	1.0(A)	70 %	-55°c~+125°c	
162P, 164P	50mΩ Max.	1.0(A)	70°C	->> (*+125 (*	

## Marking

- 3 digits indication(E-24 series)
- Left 2 digits represent significant figures.
- Last 1 digit represents exponential number of 10.
- Example: 103 Left 2 digit: 10
  - - Last 1 digits: 3  $103 = 10 \times 10^3 = 10000 \Omega = 10 k\Omega$
- RP102P, RN102P, RN104P type : No marking.



\* Jumper chip is printed as "000".

Characteristics Performance

Attenuator

Operation Notes

General

Precision

Low Ohms

Ultra Low Ohms

Arrays

Arrays for

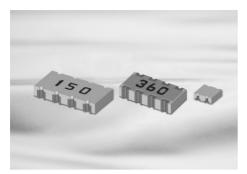
**Memory Modules** 

**Example of Land** Pattern Design

Packaging

Standard **Resistance Value** 

# Arrays for Memory Modules



### **Feature**

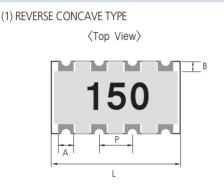
- Reducing SMD surface area (40% reduced).
  Reducing SMD costs (75% reduced).
  Applicable both flow and reflow soldering.
  Reverse & Short free Reverse Concave Type.

The product of lead-free terminal is RoHS compliant. PhO(lead oxide) is included in the glass of our product which is prescribed on RoHS appendix as an exception.

### Application

- For semiconductor devices.
- For computers, digital circuits.

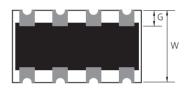
### Structure and Dimensions



⟨Side View⟩

т

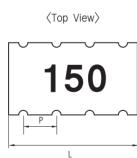
⟨Bottom View⟩



(UNIT: mm)

Туре	L	W	Т	Α	В	G	Р	Average Weight
RM102P	1.00±0.10	1.00±0.10	0.35±0.10	0.30±0.10	0.15±0.10	0.25±0.15	0.50±0.10	1.2mg
RM104P	2.00±0.10	1.00±0.10	0.45±0.10	0.30±0.10	0.15±0.10	0.25±0.15	0.50±0.10	2.8mg

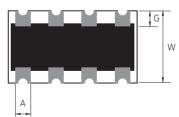
### (2) SHORT-FREE REVERSE CONCAVE TYPE



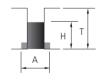




⟨Bottom View⟩



(Terminal Side View)



(UNIT: mm)

Туре	L	W	Т	А	G	Р	н	Average Weight
RK102P	1.00±0.10	1.00±0.10	0.35±0.10	0.30±0.10	0.25±0.15	0.50±0.10	0.17min	1.2mg
RK104P	2.00±0.10	1.00±0.10	0.45±0.10	0.30±0.10	0.25±0.15	0.50±0.10	0.3min	2.8mg

## Parts Numbering System

• The part number system shall be in the following format

, ,		5				
RM	10	4P	J	100	CS	
Code Designation	Dimension	Resistors	Tolerance	Resistance Value	Packaging Code	
RM : Reverse Concave Array RK : Short-free Reverse Concave Array	10: 1005 16: 1608	2P: 2 Pieces 4P: 4 Pieces	J: ±5% ∗Jumper:' J'	3 digit coding system (IEC coding system) E-24 series	CS : Tape Packaging 7" ES : Tape Packaging 10" AS : Tape Packaging 13"	Operation Notes

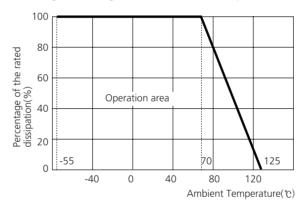
### Specification

Туре	Power Rating (W)	Working Voltage (MAX)	Overload Voltage (MAX)	TCR (ppm/ ୯)	Resistance Range (Ω)	Rated Ambient Temperature	Rated Working Temperature	Recommended Soldering Conditions
102P, 104P	1/16	25(V)	50(V)	$\pm$ 200ppm	1 Ω ~1M Ω	70℃	-55℃~+125℃	General

• Rated voltage (V) =  $\sqrt{\text{Rated power}(W) \times \text{Normal resistance value (R)}}$ Rated voltage should be lower than (MAX) working voltage.

### **Power Derating Curve**

The rated power is the maximum continuous loading power at  $70^{\circ}$  ambient temperature. For ambient temperature above  $70^{\circ}$ , the loading power follows the below power derating curve. (The load current shall be derated according to Derating curve in case of the 'Jumper')



### **Jumper Resistors**

Туре	Resistance	Current Rating	Rated Ambient Temperature	Rated Working Temperature	Characteristics Performance
102P, 104P	50mΩ Max.	1.0(A)	70℃	-55℃~+125℃	l'enformance

### Marking

- 3 digits indication(E-24 series)
- Left 2 digits represent significant figures.
- Last 1 digit represents exponential number of 10.
- Example: 150
  - Left 2 digit: 15
    - Last 1 digits: 0
      - $150 = 15 \times 10^{\circ} = 15 \Omega$
- RM102P, RK102P Type : No marking.



\* Jumper chip is printed as "000".

The specifications and designs contained herein may be subject to change without notice. Please contact our sales representatives or product engineers before you ordering.

18 19

Example of Land Pattern Design

**Structure** 

General

Precision

Low Ohms

Ultra Low Ohms

Arrays

Arrays for

Attenuator

Packaging

Standard

**Resistance Value** 

Memory Modules