



厚膜貼片排阻

CR Array Series
Thick Film Chip Resistor Array

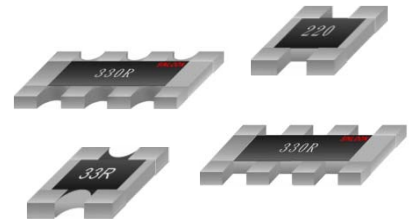
FEATURE

- ◆ Small size and light weight.
- ◆ Reduction of assembly costs matching with placement machines
- ◆ Reliability high quality and fast delivery
- ◆ Isolated and bussed circuits
- ◆ RoHS compliant version available
- ◆ Leadless surface mount construction

Application

- ◆ Entertainment: Stereo, TV tuners, Tape recorder.
- ◆ Appliance: Air conditioner, Refrigerator
- ◆ Computer & relative products: Main board, PDA.
- ◆ Communication equipment: Cell phone, Fax machine
- ◆ Power equipment: Power supply, illumination equipment.
- ◆ Measuring instrument: Electric meter, Navigation equipment.

FIGURE



ORDERING INFORMATION

Example: CR034R10RJF (0603 4R/8pin 10R ±5% 200ppm)

Power	Size	Type	Resistance		Tolerance	TCR/ppm	Packing	Resistance Marking
1/18W	0402	CR022R4P	E24	E96	F = ±1% J = ±5%	E = ±100 F = ±200 G = ±300	10K Reel	1R0 (1Ω)
1/18W	0402	CR024R8P	1R = 1R00	1R = 1R00			10K Reel	100 (10Ω)
1/10W	0603	CR032R4P	10R=10R0	10R=10R0			5K Reel	101 (100Ω)
1/10W	0603	CR034R8P	100R=101	100R=1000			5K Reel	102 (1KΩ)
1/18W	0402	CR024C8P	1K = 102	1K = 1001			5K Reel	103 (10KΩ)
1/10W	0603	CR034C8P	10K = 103	10K = 1002			5K Reel	104 (100KΩ)
1/18W	0402	CR028R10F	100K=104	100K=1003			4K Reel	105 (1MΩ)
1/4W	1206	CR064R8P	1M = 105	1M = 1004			4K Reel	

* Marking: See Page 4, Fig-6

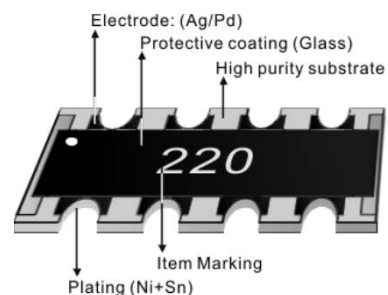
RATINGS

Type	Size	Power	Rate Current of Jumper	Max. Working Voltage	Max. Over Load Voltage	TCR (ppm) °C	Resistance Tolerance	Resistance Range (Ω)	Jumper
CR022R4P	0402	1/18W	1A	50V	100V	F=±200	F=±1% J=±5%	10~1M	<50m
CR024R8P	0402	1/18W	1A	50V	100V				
CR032R4P	0603	1/10W	1A	50V	100V				
CR034R8P	0603	1/10W	1A	50V	100V				
CR024C8P	0402	1/18W	1A	50V	100V				
CR034C8P	0603	1/10W	1A	50V	100V				
CR028R10F	0402	1/18W	1A	50V	100V				
CR064R8P	1206	1/4W	2A	200V	400V				
Operating Temperature (°C)						-55°C ~ 125°C			

Circuit Resistance

Type	Size	Power	Resistor/Pin
CR022R4P	0402	1/18W	2 Resistor 2 Pin
CR024R8P	0402	1/18W	4 Resistor 8 Pin
CR032R4P	0603	1/10W	2 Resistor 4 Pin
CR034R8P	0603	1/10W	4 Resistor 8 Pin
CR024C8P	0402	1/18W	4 Resistor 8 Pin
CR034C8P	0603	1/10W	8 Resistor 10 Pin
CR028R10F	0402	1/18W	8 Resistor 10 Pin
CR064R8P	1206	1/4W	4 Resistor 8Pin

CONSTRUCTION



► From the specification of data sheet choose one of our Ship topics, and then select an FAQ to read. If you have a question which is not in this section, please contact us.

- ◆ CR022R4P (0402 2R4 Pin 022R)
- ◆ CR032R4P (0603 2R4 Pin 032R)

□ DIMENSION

Unit: mm

Type	Size	L	W	H	L ₁	L ₂	P	Q	Figure
CR022R4P	0402	1.0±0.1	1.0±0.1	0.33±0.05	0.15±0.05	0.25±0.05	0.67±0.10	0.34±0.1	Fig-1
CR032R4P	0603	1.6±0.15	1.6±0.15	0.5±0.04	0.35±0.05	0.3±0.05	1.0±0.1	0.61±0.1	Fig-2

Fig-1

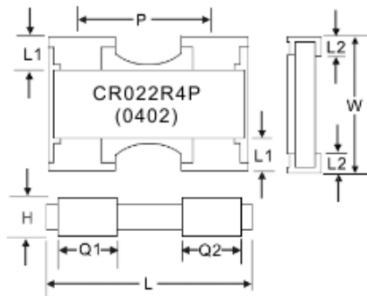
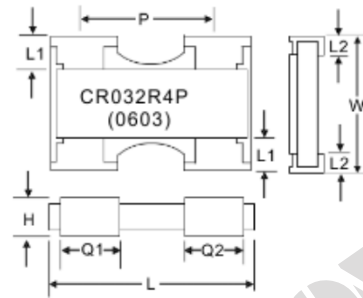
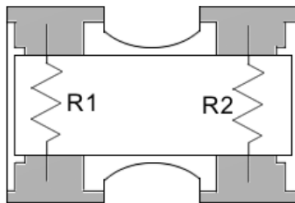


Fig-2

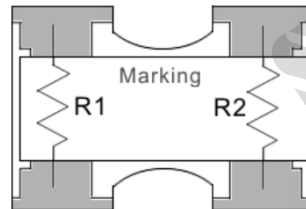


Equivalent Circuit Diagram
CR022R4P No Marking

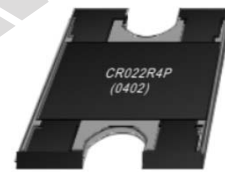


Isolated: R1=R2

Equivalent Circuit Diagram
CR032R4P Top view Marking code number Figure



Isolated: R1=R2



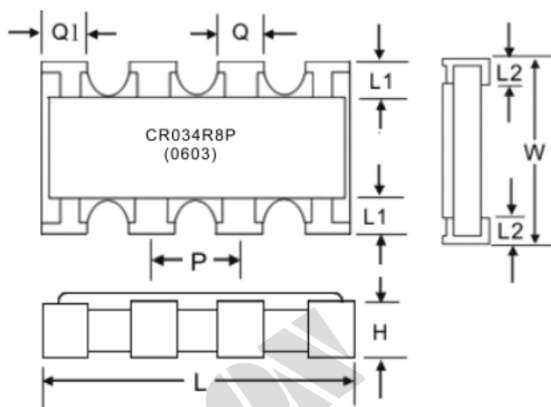
- ◆ CR024R8P (0402 4R8 Pin 024R)
- ◆ CR034R8P (0603 4R8 Pin 034R)

□ DIMENSION

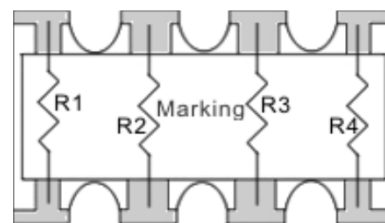
Unit: mm

Type	Size	L	W	H	L ₁	L ₂	P	Q	Q ₁
CR024R8P	0402	2.0±0.1	1.0±0.1	0.40±0.05	0.20±0.05	0.2±0.05	0.5±0.10	0.30±0.1	0.43±0.1
CR034R8P	0603	3.2±0.15	1.6±0.15	0.5±0.04	0.35±0.05	0.3±0.05	0.8±0.1	0.50±0.1	0.60±0.1

Fig-3



Equivalent Circuit Diagram
CR034R8P Top view Marking code number



Isolated: R1=R2=R3=R4

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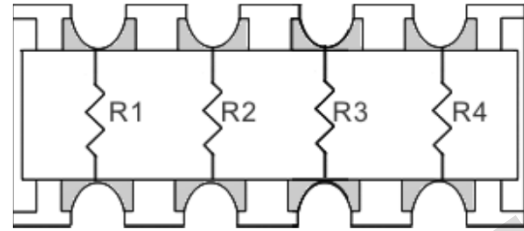
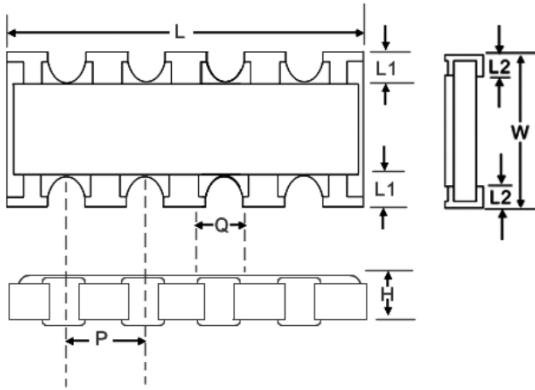
- ◆ CR024C8P (0402 4R8 Pin 024C)
- ◆ CR034C8P (0603 4R8 Pin 034C)

□ DIMENSION

Unit: mm

Type	Size	L	W	H	L ₁	L ₂	P	Q	Figure
CR024C8P	0402	2.0±0.1	1.0±0.1	0.40±0.05	0.20±0.05	0.2±0.05	0.5±0.10	0.43±0.1	Fig-4
CR034C8P	0603	3.2±0.15	1.6±0.15	0.5±0.04	0.35±0.05	0.3±0.05	0.8±0.1	0.60±0.1	

Fig-4



Isolated: R1=R2=R3=R4

Figure:



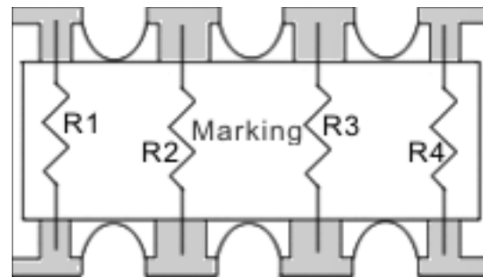
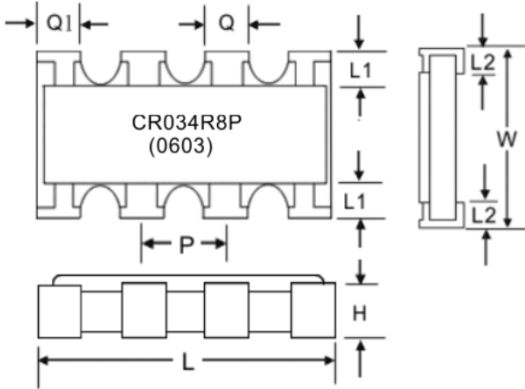
- ◆ CRA064R8P (1206 4R8 Pin 064R)

□ DIMENSION

Unit: mm

Type	Size	L	W	H	L ₁	L ₂	P	Q	Q1
CR064R8P	1206	5.1±0.2	3.1±0.2	0.55±0.05	0.50±0.05	0.5±0.2	1.27±0.10	0.8±0.2	1.0±0.2

Fig-5



Isolated: R1=R2=R3=R4

Figure:



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- ◆ CR028R10P (0402 8R10 Pin 028R)
- ◆ CR028S10P (0402 8R10 Pin 028S)

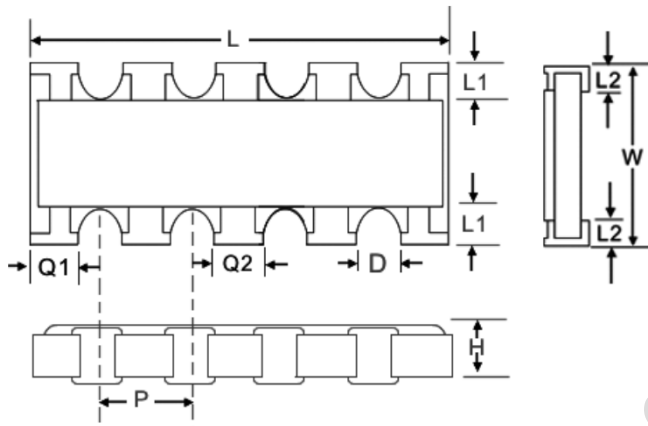
□ DIMENSION

Unit: mm

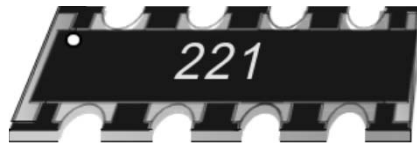
Type	L	W	H	D	Q1	Q2	L ₁	L ₂	P
CR028R10P	3.2±0.1	1.6±0.1	0.55±0.05	0.32±0.05	0.53±0.1	0.32±0.1	0.3±0.15	0.3±0.15	0.64±0.1

This product is highly suitable for the purpose of pull-up and pull-down it is easy to handle because of specifies direction for mounting due to the symmetrical placement of common terminal.

Fig-6

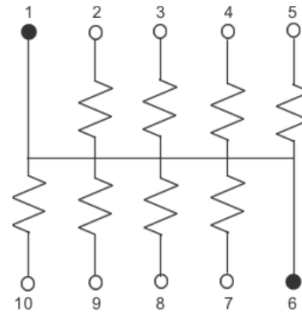


Body Marking : R
CR028R10P R-Type

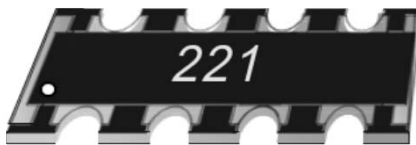


Bussed.

Circuit R-Type

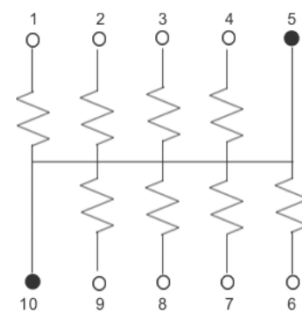


Body Marking : S
CR028S10P S-Type



Bussed.

Circuit S-Type

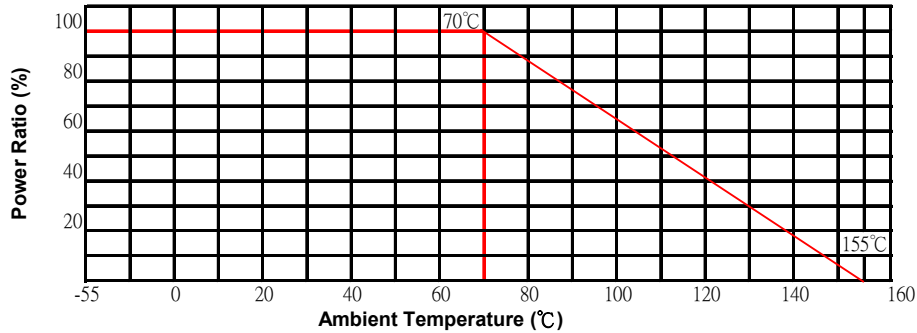




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CR Array Series
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POWER CURVE



* Power rating or current rating is in the case based on continuous full-load at ambient temperature of 70°C for operation at ambient temperature in excess of 70°C, the load should be dreed in accordance with figure of dating Curve

Voltage Rating of Current Rating

Resistance Range: $\geq 1\Omega$ $E=\sqrt{R \times P}$ P=Power rating(W) R=Nominal resistance(Ω)

Rated Voltage: The resistor shall have a DC continuous working voltage or a RMS AC continuous working voltage at commercial-line frequency and wave form corresponding to the power rating, as determined formula as following:

E =Rated voltage(V) $E=\sqrt{R \times P}$ P=Power rating(W) R=Nominal resistance(Ω)

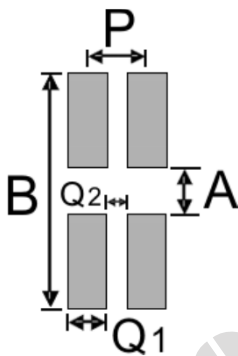
Operation and Storage Temperature

	Min	Max
Operation Temperatur	-55°C	70°C
Storage Temperature	20°C	30°C
Storage Humidity	30%	70%

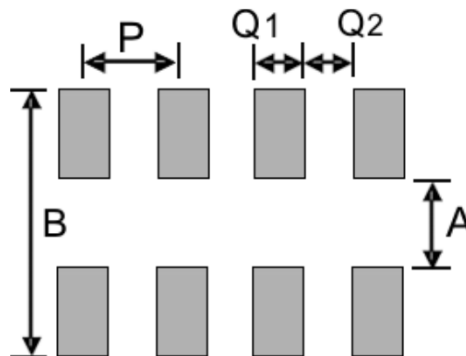
RECOMMEND LAND PATTERN DESIGN (For Reflow Soldering)

Type	CR022R4P	CR024R8P	CR024C8P	CR034R8P	CRA022C	CR064R8P	CR028R10P
Dim.	0402	0402	0402	0603	0402	1206	0402
A	0.50	0.50	0.50	1.00	0.50	2.00	3.1
B	2.00	2.00	2.00	2.60	2.00	4.75	2.6
P	0.67	0.50	0.50	0.80	0.50	1.30	0.3
Q1	0.33	0.28	0.28	0.40	0.33	0.90	0.4
Q2	0.34	0.22	0.22	0.40	0.17	0.375	0.4

CR022R4P CR022C4P



CR024R8P CR024C8P CR034R8P CR064R8P



□ Test Procedures and Requirements

Test Item	Procedue	Requirement	Test Method
Temperature Coefficient of Resistance	-55°C ~ +155°C, 20°C is the reference temperature	Refer to Rating	JIS C 5201-1 clause 4.8
Short Time Overload	General: 2.5 time RCWV or Max. Overload voltage for 5 seconds. Hifh Power: 2.5 times RCWV of Mac. Overload voltage for 2 seconds.	±1=±(1.0% +0.05Ω) ±5=±(2.0% +0.1Ω)	JIS C 5201-1 clause
IR Reflow	<p>Peak : 250⁺⁵/₀ °C 230°C or higher Pre Heating Zone 180°C 150°C 90 ± 30 s 30 ± 10 s Soldering Zone Heating time</p>	±1=±(1.0% +0.05Ω) ±5=±(1.0% +0.05Ω)	SONY SS-00254
Leaching	260±5°C for 30 seconds	>95% Coverage	SONY SS-00254-9
Soldering Heat	260±5°C for 10 seconds	±1=±(1.0% +0.05Ω) ±5=±(1.0% +0.05Ω)	JIS C 5201-2 clause
Temperature Cycling	-55°C to +155°C 5 cycles	0.10%,0.50%,1% : ±(0.1%+0.05Ω) 2%,5%: ±(0.1%+0.01Ω)	JIS C 5201-2 clause
Electric Iron	Preheating temperature : 350±5°C Electric iron preheating time: 3+1/-0 second	±1=±(1.0% +0.05Ω) ±5=±(1.0% +0.05Ω)	SONY SS-00254-5
Resistance Solcent	The tested resistor be immersed into isproply alcohol of 20 ~ 25°C for 60 secs. Then the resistor is left in the room for 48 hours.	±1=±(1.0% +0.05Ω) ±5=±(1.0% +0.05Ω)	JIS C 5201-1 clause
Load life in Humidity	40±2°C, 90-95% R.H. or Max. working voltage for 1000 h with 1.5 hrs "ON" and 0.5 hrs "OFF"	0.10%,0.50%,1% : ±(0.1%+0.05Ω) 2%,5%: ±(2%+0.05Ω)	JIS C 5201-1 clause
Load life (Endurance)	70±2°C, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"	0.10%,0.50%,1% : ±(0.1%+0.05Ω) 2%,5%: ±(2%+0.05Ω)	JIS C 5201-1 clause
Insulation Resistance	Max. Overload voltage for 1 mimute	≥ 10G Ω	JIS C 5201-1 clause 4.6

- ▶ 在本章規格書裡, 如果你未能找到或參數指標未能達到你的應用要求, 即未在本規格書裡表現出來, 請與美隆聯系。
- ▶ From the specification of data sheet choose one of our Ship topics, and then select an FAQ to read.
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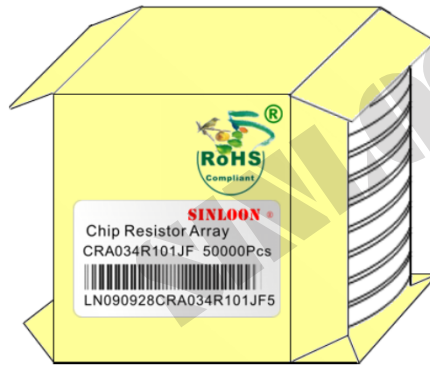
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Package

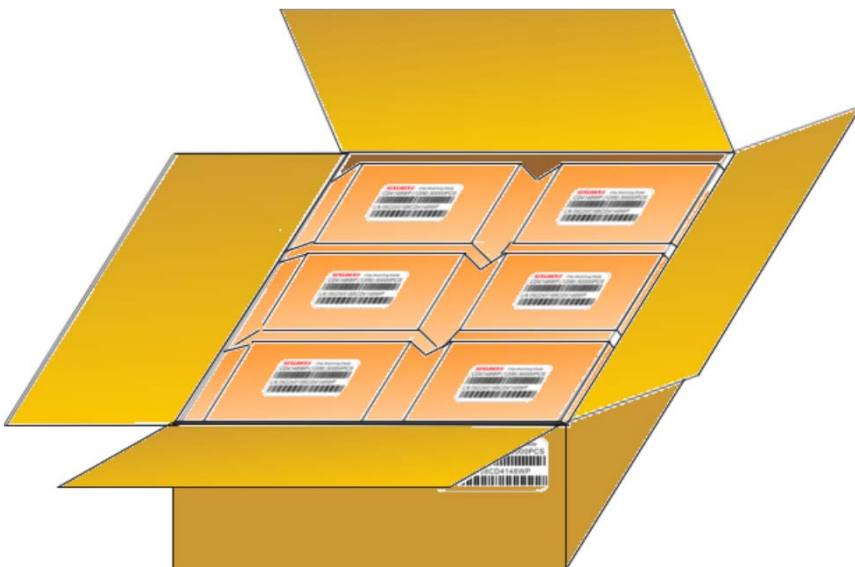
Type	Size	Power	Resistor/Pin	Reel Size	Quantity		
					Reel/Pcs	Inner Box	Carton
CR022R4P	0402	1/18W	2 Resistor 2 Pin	170mm (7")	10K	100K	600K
CR024R8P	0402	1/18W	4 Resistor 8 Pin		10K	100K	600K
CR032R4P	0603	1/10W	2 Resistor 4 Pin		5K	50K	300K
CR034R8P	0603	1/10W	4 Resistor 8 Pin		5K	50K	300K
CR024C8P	0402	1/18W	4 Resistor 8 Pin		10K	100K	600K
CR034C8P	0603	1/10W	8 Resistor 10 Pin		5K	50K	300K
CR028R10P	0402	1/18W	8 Resistor 10 Pin	280mm(11")	4K	20K	100K
CR064R8P	1206	1/4W	4 Resistor 8 Pin	280mm(11")	4K	20K	100K

Plastic Reel
Quantity: 5K Reel / 7"

Inner Box.
Quantity: 50K Pcs / Box



Carton
Quantity: See Package



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