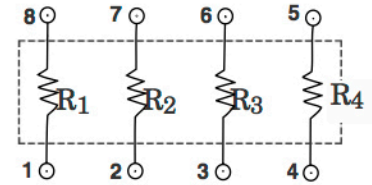
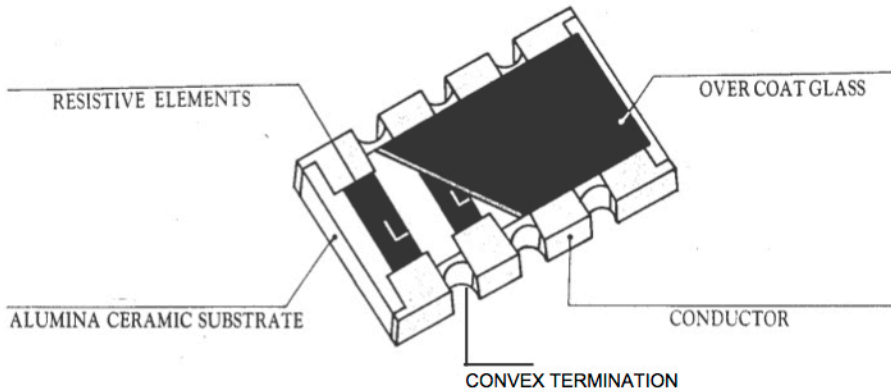


## Thick Film Chip Resistor Arrays - CN Series



### Construction

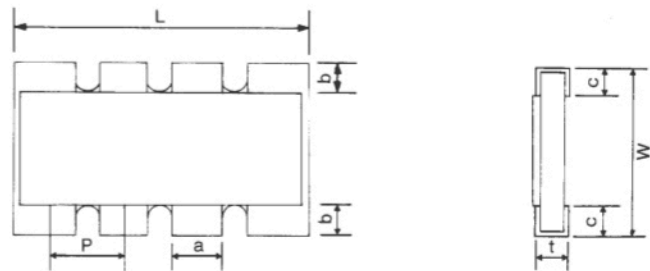


$$R_1 = R_2 = R_3 = R_4$$

### Features

- Small size and light weight, high density
- Reduction of assembly costs and matching with placement machines (automatic placement)
- Reliability, high quality
- Suitable for IR reflow soldering
- Convex

### Dimensions



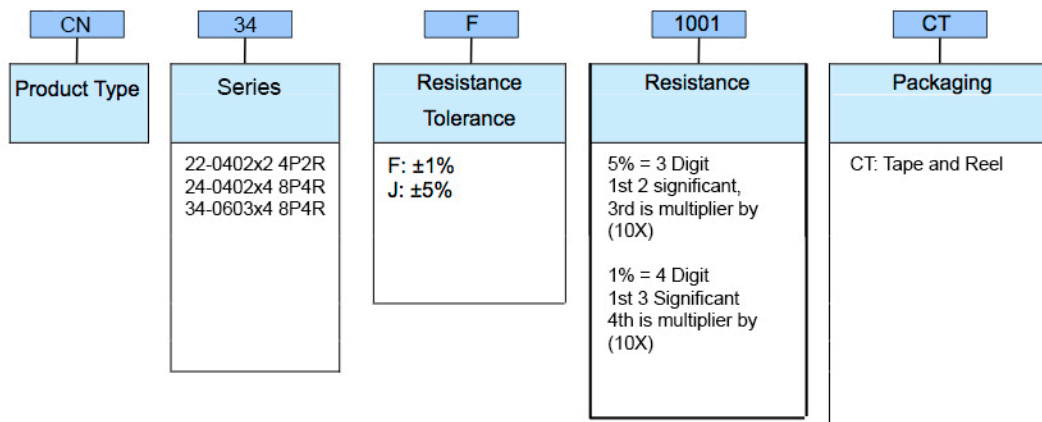
### Applications

- Entertainment
- Computer & Related Products
- Communication Equipment
- Power Equipment
- Measuring Equipment

unit = mm

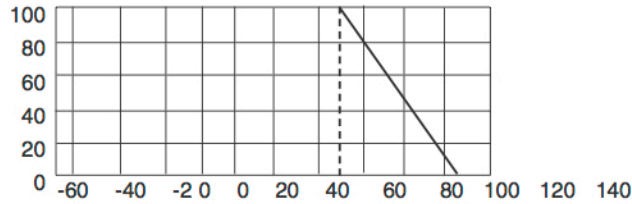
Type	L	W	t	P	a	b	c
CN22	1.0±0.1	1.0±0.1	0.35±0.1	0.65±0.05	0.3±0.1	0.15±0.1	0.25±0.2
CN24	2.0±0.1	1.0±0.1	0.4±0.1	0.5±0.05	0.3±0.1	0.15±0.1	0.25±0.2
CN34	3.2±0.1	1.6±0.15	0.55±0.1	0.8±0.5	0.45±0.1	0.3±0.2	0.3±0.2

### Part Numbering



Note: Cal-Chip has completed the Lead-Free transition. All parts shipped will be Lead-Free. The customer designator of "LF" is no longer available.

## Derating Curve



The resistors operated in ambient temperatures above 70°C, power rating must be derated in accordance with curve to the left.

## Rated Voltage

The value of rated voltage shall be determined from formula (1).

$$E = \sqrt{P \times R} \dots\dots(1)$$

E = Rated Voltage (V)

P = Power Rating (W)

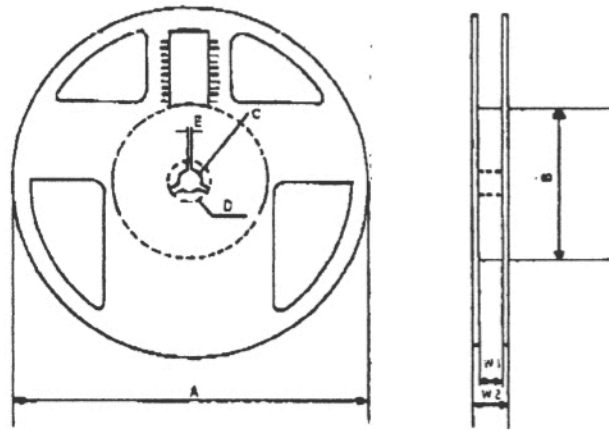
R = Nominal Resistance ( $\Omega$ )

## Electrical/Machine Characteristics and Testing Methods

Item	Specifications	Test Methods
Temperature Coefficient	TCR: $\pm 200$ ppm	Inspection Temp. Cold: +25°C~55°C Hot: +25°C~+125°C
Short Time Overload	$\pm(2\%+0.05\Omega)$	1. Apply 2.5 x rated voltage for 5 sec. 2. Wait 30 minutes 3. Measure resistance value
Load Life	$\pm(3\%+0.05\Omega)$	1. Dwell in chamber at 70 $\pm$ 2°C for ON: 90 min. at rated voltage; then OFF: 30 min. 2. Perform 1,000 hours cyclically
Load Life in Humidity	$\pm(3\%+0.05\Omega)$	1. Dwell in humidity chamber at 40 $\pm$ 2°C and 95% RH for ON: 90 min. at rated voltage; then OFF: 30 min. 2. Perform 1,000 hours cyclically
Temperature Cycling	$\pm(1\%+0.05\Omega)$	1. -55 $\pm$ 3°C~125 $\pm$ 3°C, make 5 cycles. 2. Released 1 hour in room temp., then measure value.
Effect of Soldering	$\pm(2.5\%+0.05\Omega)$ Non-damage by machinery	1. Immersed in molten solder at 270 $\pm$ 5°C for 10 $\pm$ .01 sec. 2. Released 1 hour in room temp., then measure value.
Solderability	95% coverage min.	1. Immersed in rosin solution for 5~10 seconds. 2. Re-immersed in solder pot at 230 $\pm$ 5°C for 3 $\pm$ 0.5 sec
Intermittent Overload	$\pm(5\%+0.1\Omega)$	1. Perform 10,000 voltage cycles as follows: ON (2.5 x rated voltage or current) 1 sec. and OFF 25 sec. 2. Released 30 min. without loading. 3. Measure resistance.
Dielectric Withstanding Voltage	No evidence of mechanical damage	Apply 300VAC for 1 second
Insulation Resistance	10 <sup>8</sup> $\Omega$ min	Apply 100VDC.

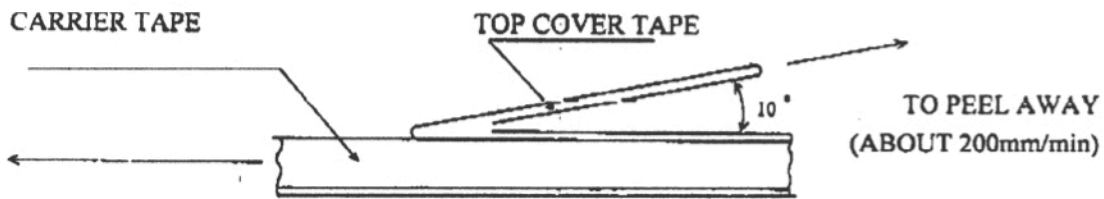
## ■ Packaging

### Reel Specifications & Packaging Quantity



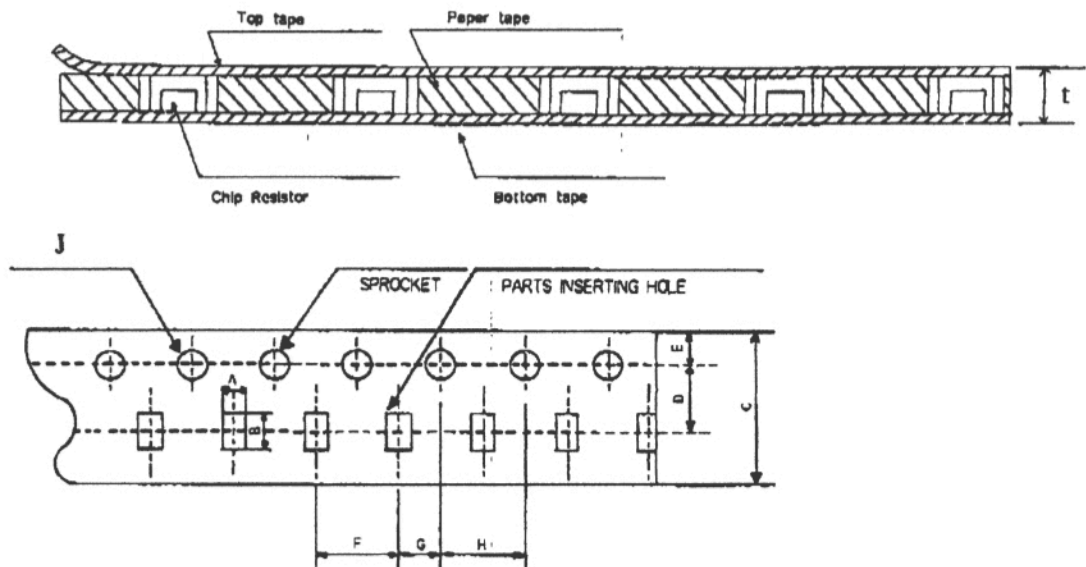
Unit=mm

Type	A	B	C	D	E	W1	W2
CN22	$\Phi 178 \pm 2.0$	$\Phi 80 \pm 2.0$	$\Phi 13 \pm 0.5$	$\Phi 21.0$	$2.0 \pm 0.5$	$9.0 \pm 1.0$	$11.4 \pm 2.0$
CN24	$\Phi 178 \pm 2.0$	$\Phi 80 \pm 2.0$	$\Phi 13 \pm 0.5$	$\Phi 21.0$	$2.0 \pm 0.5$	$10.0 \pm 1.0$	$12.5 \pm 1.0$
CN34	$\Phi 178 \pm 2.0$	$\Phi 80 \pm 2.0$	$\Phi 13 \pm 0.5$	$\Phi 21.0$	$2.0 \pm 0.5$	$10.0 \pm 1.0$	$12.5 \pm 1.0$



The top fixed tape for each carrier shall have an adhesion peel strength of 10 to 50G, measure method is shown above to peel away.

### Taping Specification



Unit=mm

Type	A	B	C	D	E	F	G	H	J	t	
CN22 CN24	10000	$2.0 \pm 0.15$	$2.4 \pm 0.2$	$8.0 \pm 0.2$	$3.5 \pm 0.05$	$1.75 \pm 0.1$	$4.0 \pm 0.1$	$2.0 \pm 0.05$	$4.0 \pm 0.1$	$.5 \pm 0.1 / -0$	$.84 \pm 0.01$
CN34	5000	$2.0 \pm 0.2$	$3.6 \pm 0.2$	$8.0 \pm 0.1$	$3.5 \pm 0.05$	$1.75 \pm 0.1$	$4.0 \pm 0.1$	$2.0 \pm 0.05$	$4.0 \pm 0.1$	$1.5 \pm 0.1$	1.0