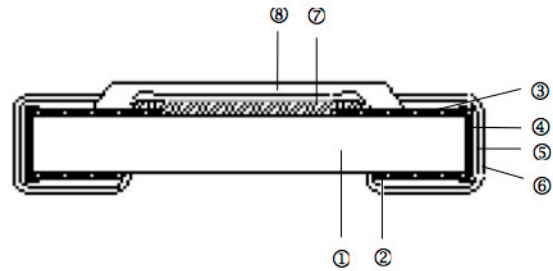


Thin Film Array Chip Resistor – CNP Series



Construction



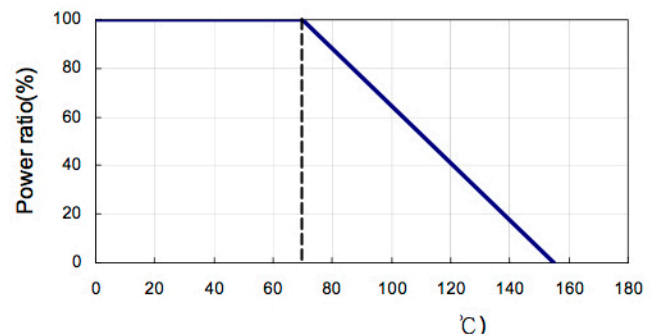
Features

- Advanced thin film technology
- Very tight tolerance down to $\pm 0.1\%$
- Extremely low TCR down to $\pm 10 \text{ PPM}/^\circ\text{C}$
- RoHS compliant component, compatible with lead (Pb)-free

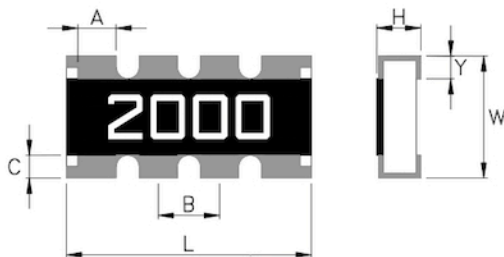
Applications

- Voltage divider
- Feedback circuits
- Signal conditioning

Derating Curve



Dimensions



Type	Number of Resistors	L	W	H	A	B	C	Y
CNP34	4	3.20 ± 0.15	1.60 ± 0.15	0.55 ± 0.10	0.50 ± 0.15	0.80 ± 0.05	0.30 ± 0.15	0.30 ± 0.15

Part Numbering

CNP	34	B	1001	CT	—	25
Product Type	Dimensions	Resistance Tolerance	Resistance	Packaging Code		TCR (PPM/°C)
	34: 0603X4	B: $\pm 0.1\%$ C: $\pm 0.25\%$ D: $\pm 0.5\%$ F: $\pm 1\%$	1001: 1K Ω 1002: 10K Ω 1003: 100K Ω 1004: 1M Ω	CT: Tape & 5K Reel		10 : ± 10 15 : ± 15 25 : ± 25 50 : ± 50

* See packaging specifications below for avail reel quantities

■ Standard Electrical Specifications

Item Type	Power Rating at 70°C	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Number Of Resistors	Resistance Range				TCR (PPM/°C)
						±0.1%	±0.25%	±0.5%	±1%	
CNP 34	1/16W	-55 ~ +155°C	50V	100V	4	24.9Ω~100KΩ				±25 ±50

Operating Voltage= $\sqrt{P \cdot R}$ or Max. operating voltage listed above, whichever is lower.

Overload Voltage= $2.5 \cdot \sqrt{P \cdot R}$ or Max. overload voltage listed above, whichever is lower.

■ Special Specifications

Item Type	Power Rating at 70°C	Operating Temp. Range	Max. Operating Voltage	Max. Overload Voltage	Number Of Resistors	Resistance Range				TCR (PPM/°C)
						±0.1%	±0.25%	±0.5%	±1%	
CNP 34	1/16W	-55 ~ +155°C	50V	100V	4	24.9Ω~2KΩ				±10 ±15

Operating Voltage= $\sqrt{P \cdot R}$ or Max. operating voltage listed above, whichever is lower.

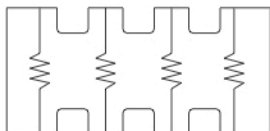
Overload Voltage= $2.5 \cdot \sqrt{P \cdot R}$ or Max. overload voltage listed above, whichever is lower.

■ Environmental Characteristics

Item	Requirement		Test Method
	Tol. ≤ 0.25%	Tol. > 0.25%	
Temperature Coefficient of Resistance (T.C.R.)	As Spec.		MIL-STD-202F Method 304 +25/-55/+25/+125/+25°C
Short Time Overload	ΔR±0.25%	ΔR±0.5%	JIS-C-5201-1 5.5 RCWV*2.5 or Max. overload voltage for 5 seconds
Insulation Resistance	>1000 MΩ		MIL-STD-202F Method 302 Apply 100V _{DC} for 1 minute
Endurance	ΔR±0.25%	ΔR±0.5%	MIL-STD-202F Method 108A 70±2°C, Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp Heat with Load	ΔR±0.25%	ΔR±0.5%	MIL-STD-202F Method 103B 40±2°C, 90~95% R.H. Max. working voltage for 1000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Bending Strength	ΔR±0.25%	ΔR±0.5%	JIS-C-5201-1 6.1.4 Bending amplitude 3 mm for 10 seconds
Solderability	95% min. coverage		MIL-STD-202F Method 208H 245±5°C for 3 seconds
Resistance to Soldering Heat	ΔR±0.25%	ΔR±0.5%	MIL-STD-202F Method 210E 260±5°C for 10 seconds
Dielectric Withstand Voltage	100V		MIL-STD-202F Method 301 Max. overload voltage for 1 minute
Thermal Shock	ΔR±0.25%	ΔR±0.5%	MIL-STD-202F Method 107G -55°C ~150°C, 100 cycles
Low Temperature Operation	ΔR±0.25%	ΔR±0.5%	JIS-C-5201-1 7.1 1 hour, -65°C, followed by 45 minutes of RCWV

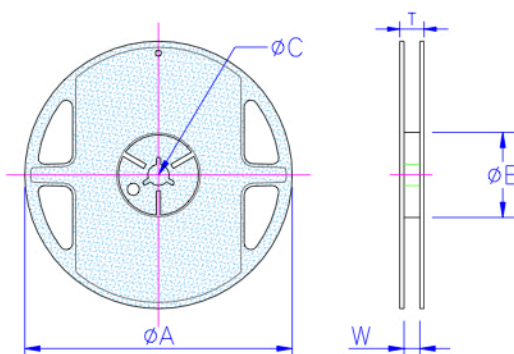
■ Storage Temperature: 25±3°C; Humidity < 80%RH

Equivalent Circuit Diagram



Packaging

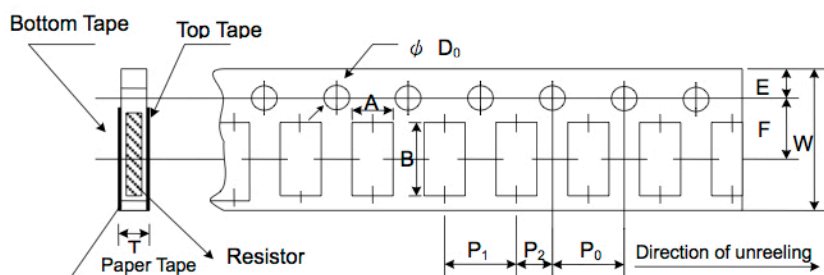
Reel Specifications & Packaging Quantity



Unit: mm

Type	Packaging Quantity		Tape Width	Reel Diameter	ΦA	ΦB	ΦC	W	T
CNP 34	Paper	5K	8mm	7 inch	178.5±1.5	60 ^{+1/-0}	13.0±0.2	9.0±0.5	12.5±0.5

Paper Tape Specifications



Unit: mm

Type	A	B	W	E	F	P_0	P_1	P_2	ϕD_0	T
CNP-34	1.95 ± 0.1	3.50 ± 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	$1.5^{+0.1}_{-0}$	0.85 ± 0.1

Marking

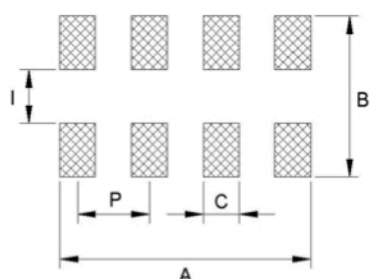
Jumper for all: Letter "0"

CNP 34 : 4 digits marking

Example:

Resistance	100 Ω	2.2K Ω	10K Ω	49.9K Ω	100K Ω
marking	1000	2201	1002	4992	1003

Recommend Land Pattern



Unit: mm

Type	A	B	C	C1	I	I1	P	P1
CNP-34	2.85	3.10	0.45	--	0.80	--	0.80	--