

# Chip Resistors



## MCCN-21 and MCCN-41

### Features:

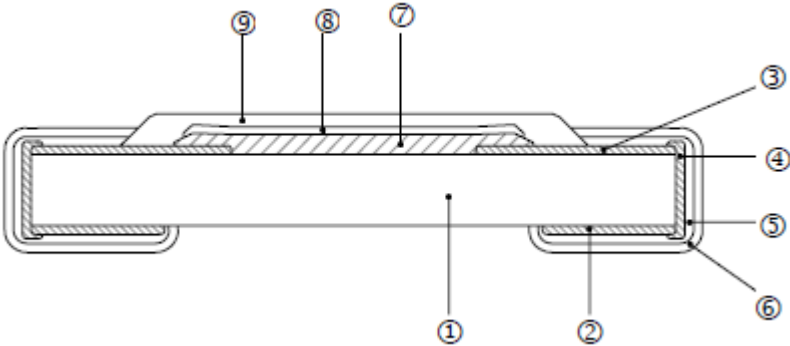


- Thick film flat array
- Contribute to higher-density mounting and reduction in size of devices by remarkably PCB
- Contribute to the size reduction of small electronic equipment such as Mobile phone, HDD
- Reduced the mounting time by decreasing the number of components
- Suitable for IR reflow soldering

### Applications

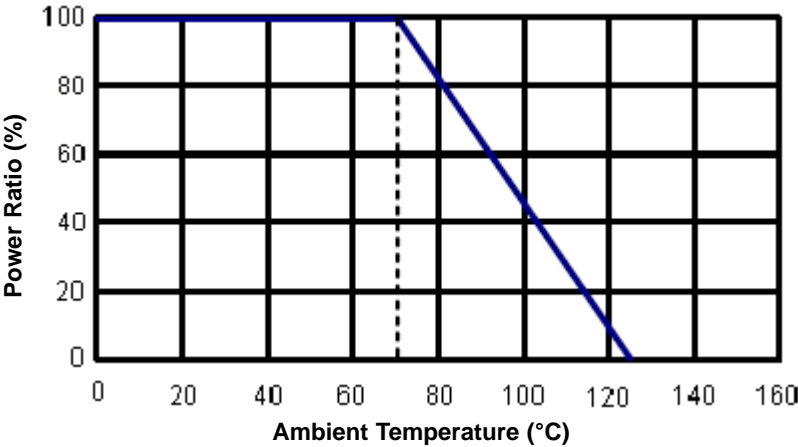
Pull-up / pull-down resistors for digital circuits  
 Used in interface circuits of LCD displays, memory modules, etc  
 Communication equipments

### Construction



1	Alumina Substrate
2	Bottom Electrode (Ag)
3	Top Electrode (Ag-Pd)
4	Edge Electrode (NiCr)
5	Barrier Layer (Ni)
6	External Electrode (Sn)
7	Resistor Layer (RuO <sub>2</sub> / Ag)
8	Primary Overcoat (Glass)
9	Secondary Overcoat (Epoxy)

### Derating Curve

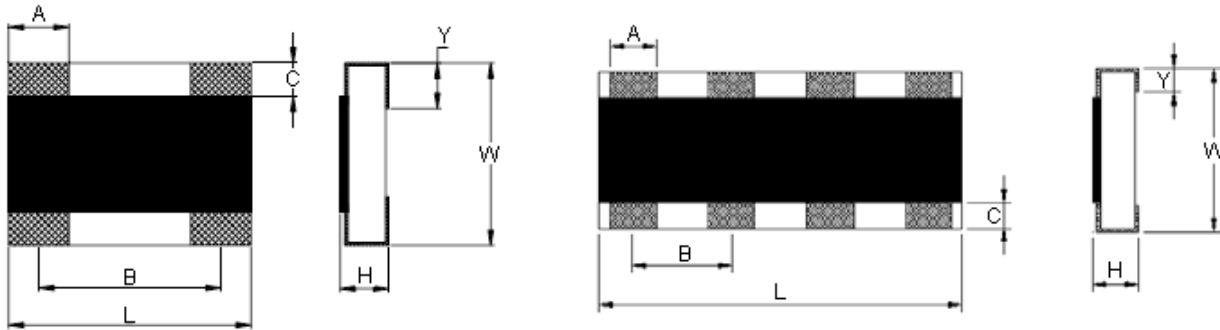


# Chip Resistors



## MCCN-21 and MCCN-41

### Dimensions



Type	Number of Resistors	L	W	H	A	B	C	Y	Weight (g) (1,000 Pieces)
CN-21	2	0.8 ±0.1	0.6 ±0.1	0.35 ±0.1	0.3 ±0.1	0.5 ±0.1	0.15 ±0.1	0.15 ±0.1	0.5
CN-41	4	1.4 ±0.1	0.6 ±0.1	0.35 ±0.1	0.2 ±0.1	0.4 ±0.1	0.1 ±0.07	0.15 ±0.05	0.833

Dimensions : Millimetres

### Standard Electrical Specifications

Type	Item	Power Rating / Rated Current	Operating Temperature Range	Maximum Operating Voltage	Maximum Overload Voltage	Number of Resistors	Resistance Range	TCR (PPM / °C)
							±5%	
CN-21	Jumper	1 / 32 W	-55 to +125°C	12.5 V	25 V	2	10 Ω - 1 MΩ	±200
	Jumper	0.5 A					0 Ω ( < 50 mΩ)	
CN-41	Jumper	1 / 32 W				4	10 Ω - 1 MΩ	
	Jumper	0.5 A					0 Ω ( < 50 mΩ)	

Operating voltage =  $\sqrt{P \times R}$  or maximum operating voltage listed above, whichever is lower

Overload voltage =  $2.5 \times \sqrt{P \times R}$  or maximum overload voltage listed above, whichever is lower

Viking is capable of manufacturing the optional specification based on customer's requirement

### Environmental Characteristics

Item	Requirement		Test Method
	±5%	Jumper	
Temperature coefficient of resistance (TCR)	As specification		-55°C to +125°C, 25°C is the reference temperature
Short time overload	± (2% +0.1 Ω)	< 50 mΩ	2.5 times RCWV or maximum overload voltage for 5 s
Insulation resistance	≥ 10 G		Maximum overload voltage for 1 min
Endurance	± (3% +0.1 Ω)	< 100 mΩ	70 ±2°C, maximum working voltage for 1,000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Damp heat with load		< 50 mΩ	40 ±2°C, 90 to 95% RH maximum working voltage for 1,000 hrs with 1.5 hrs "ON" and 0.5 hrs "OFF"
Dry heat		< 100 mΩ	at +125°C for 1,000 hrs
Bending strength	± (1% +0.05 Ω)	< 50 mΩ	Bending once for 5 s with 3 mm
Solderability	95% minimum coverage		245 ±5°C for 3 s
Resistance to soldering heat	± (1% +0.05 Ω)	< 50 mΩ	260 ±5°C for 10 s

# Chip Resistors

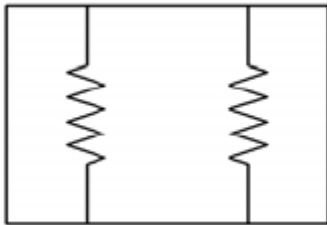
## MCCN-21 and MCCN-41

### Environmental Characteristics

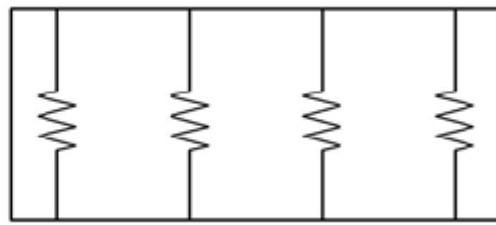
Item	Requirement		Test Method
	±5%	Jumper	
Voltage proof	No breakdown or flashover		1.42 times RCWV (RMS) for 1 min
Rapid change of temperature	± (1% +0.05 Ω)	< 50 mΩ	-55°C to +125°C, 5 cycles

Storage temperature : 25 ±3°C; humidity < 80% RH

### Equivalent Circuit Diagram

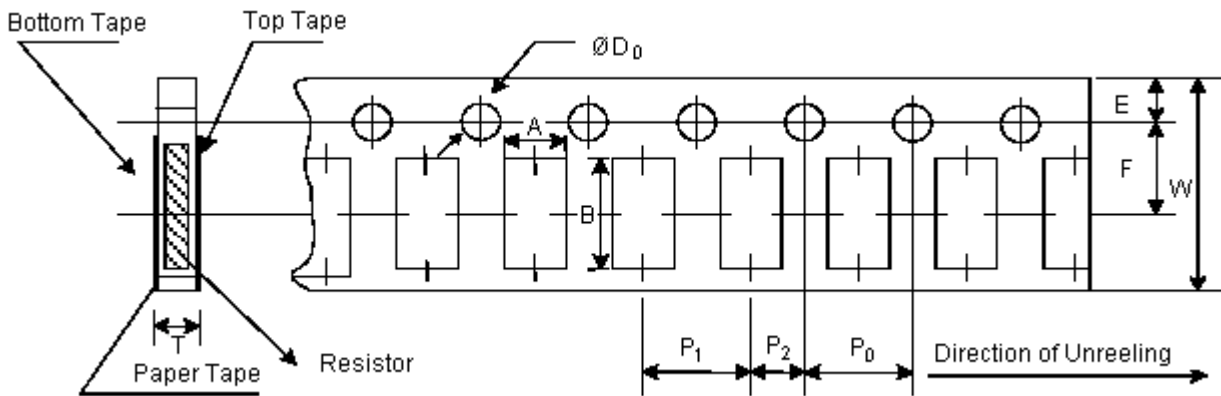


CN-21



CN-41

### Paper Tape Specifications



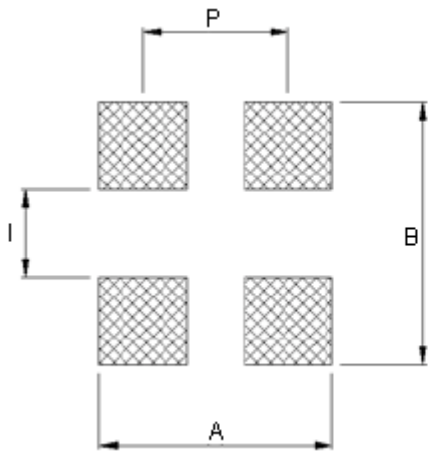
Type	A	B	W	E	F	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	ØD <sub>0</sub>	T
CN-21	0.77 ±0.05	0.97 ±0.05	8 ±0.2	1.75 ±0.1	3.5 ±0.05	4 ±0.1	2 ±0.05	2 ±0.05	1.5 <sup>+0.1</sup> <sub>-0</sub>	0.5 ±0.1
CN-41		1.57 ±0.05								

Dimensions : Millimetres

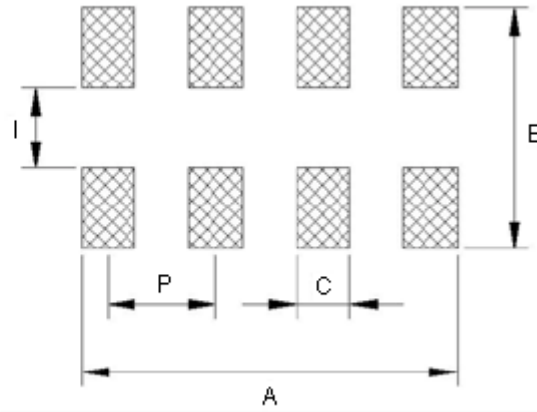
# Chip Resistors

## MCCN-21 and MCCN-41

### Recommend Land Pattern



**CN-21**



**CN-41**

Type	A	B	C	I	P
CN-21	0.8	0.9	-	0.3	0.5
CN-41	1.4	0.9	0.2	0.3	0.4

Dimensions : Millimetres

### Part Number Table

Description	Part Number
Resistor, Array, 2 X 0201, 10R	MCCN-21JL6---10R
Resistor, Array, 2 X 0201, 1K	MCCN-21JL6---1K
Resistor, Array, 2 X 0201, 10K	MCCN-21JL6---10K
Resistor, Array, 2 X 0201, 100K	MCCN-21JL6---100K
Resistor, Array, 2 X 0201, 1M	MCCN-21JL6---1M
Resistor, Array, 2 X 0201, 22R	MCCN-21JL6---22R
Resistor, Array, 2 X 0201, 220R	MCCN-21JL6---220R
Resistor, Array, 4 X 0201, 10R	MCCN-41JL6---10R
Resistor, Array, 4 X 0201, 10K	MCCN-41JL6---10K
Resistor, Array, 4 X 0201, 100K	MCCN-41JL6---100K
Resistor, Array, 4 X 0201, 1M	MCCN-41JL6---1M
Resistor, Array, 4 X 0201, 120R	MCCN-41JL6---120R
Resistor, Array, 4 X 0201, 22K	MCCN-41JL6---22K
Resistor, Array, 4 X 0201, 330R	MCCN-41JL6---330R
Resistor, Array, 4 X 0201, 33K	MCCN-41JL6---33K
Resistor, Array, 4 X 0201, 470K	MCCN-41JL6---470K

# Chip Resistors

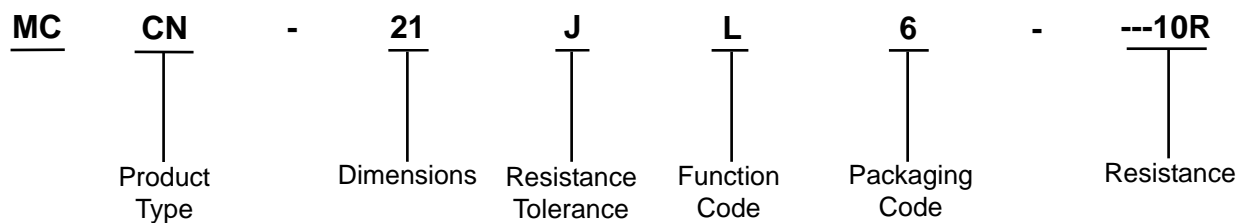
## MCCN-21 and MCCN-41



### Part Number Table

Description	Part Number
Resistor, Array, 4 X 0201, 68R	MCCN-41JL6---68R
Resistor, Array, 4 X 0201, 0R0	MCCN-41JL6---0R
Resistor, Array, 4 X 0201, 47R	MCCN-41JL6---47R
Resistor, Array, 4 X 0201, 56R	MCCN-41JL6---56R
Resistor, Array, 4 X 0201, 560R	MCCN-41JL6---560R
Resistor, Array, 4 X 0201, 2.2K	MCCN-41JL6---2K2

### Part Number Explanation:



- Dimensions** : 21 = 0201 × 2, 41 = 0201 × 4
- Resistance Tolerance** : J = ±5%
- Function Code** : L = 8P4R / 4P2R
- Packaging Code** : 6 : 7" Reel 10 K pieces
- Resistance** : 1K = 1 KΩ, 10 K = 10 KΩ

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