

# Flat Chip Resistor Array

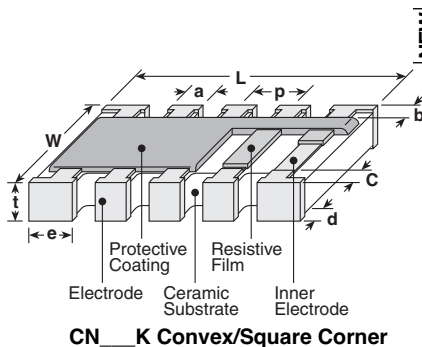
## Type CN\_K/N

ISO 9001:2000  
CERTIFIED  
 TS-16949  
CERTIFIED

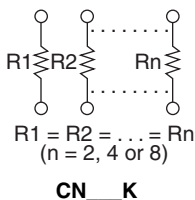
### 1. Features

- Manufactured to Type RK73 standards
- Less board space than individuals chips
- Marked with resistance value
- Isolated resistor elements
- Products with lead-free terminations meet EU-RoHS requirements. Pb located in glass material, electrode and resistor element is exempt per Annex 1, exemption 5 of EU directive 2005/95/EC

### 2. Dimensions

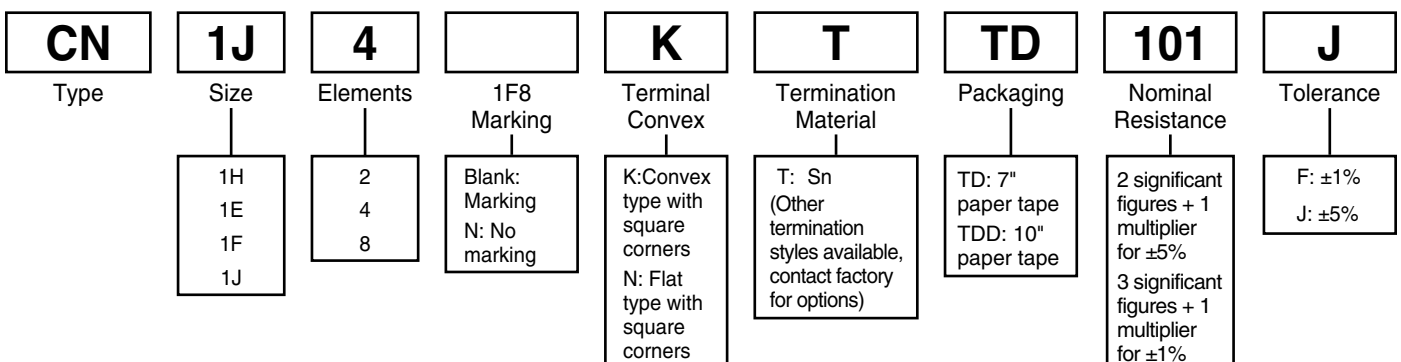


Size Code	Dimensions inches (mm)									
	L	W	C	d	t	a (ref.)	b (ref.)	p (ref.)	e	
<b>1H2N</b>	.031±.004 (0.8±0.1)	.024±.004 (0.6±0.1)	.006±.004 (0.15±0.1)	.006±.004 (0.15±0.1)	.014±.004 (0.35±0.1)	.014±.004 (0.35±0.1)	—	.020 (0.5)	.014±.004 (0.35±0.1)	
<b>1E2K</b>	.039±.004 (1.0±0.1)	.039±.004 (1.0±0.1)	.006±.004 (0.15±0.1)	.010±.004 (0.25±0.1)	.014 (0.35)	.013±.004 (0.33±0.1)	.007±.002 (0.17±0.05)	.026±.004 (0.65±0.1)	.013±.004 (0.33±0.1)	
<b>1E4K</b>	.079±.004 (2.0±0.1)	.039±.004 (1.0±0.1)	.010±.004 (0.25±0.1)	.010±.004 (0.25±0.1)	.014 (0.35)	.012±.006 (0.3±0.15)	.006±.004 (0.15±0.1)	.020 (0.5)	.013±.004 (0.33±0.1)	
<b>1J2K</b>	.063±.006 (1.6±0.15)	.063±.006 (1.6±0.15)	.012±.008 (0.3±0.2)	.010±.004 (0.25±0.1)	.020 (0.5)	.020 (0.5)	.012 (0.3)	0.31 (0.8)	.020 (0.5)	
<b>1J4K</b>	.126±.006 (3.2±0.15)	.063±.006 (1.6±0.15)	.012±.008 (0.3±0.2)	.010±.004 (0.25±0.1)	.020 (0.5)	.020 (0.5)	.012 (0.3)	0.31 (0.8)	0.024 (0.607)	
<b>1F8K</b> <b>1F8N</b>	.149±.004 (3.8±0.1)	.063±.008 (1.6±0.2)	.012±.004 (0.3±0.1)	—	.017±.004 (0.44±0.1)	.012±.004 (0.296±0.1)	.012±.004 (0.3±0.1)	.020±.004 (0.5±0.1)	.012±.004 (0.296±0.1)	



### 3. Type Designation

The type designation shall be the following form:



## 4. Standard Applications

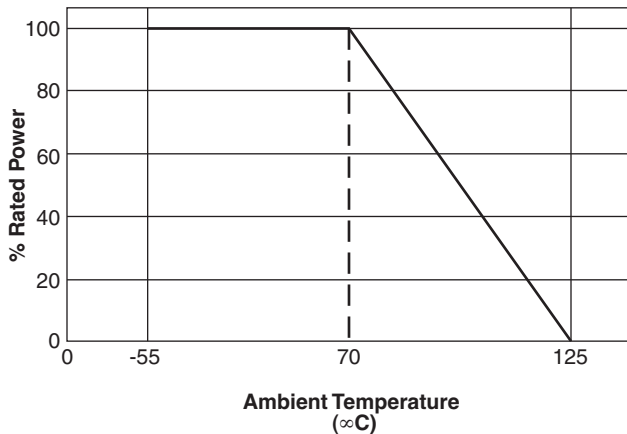
	Part Designation	Power Rating @ 70°C (Per Element)	T.C.R. (ppm/°C) Max.	Resistance Range E-96 (F±1%)	Resistance Range E-24 (J±5%)	Absolute Maximum Working Voltage	Maximum Overload Voltage (5 Secs. Max.)	Operating Temperature Range
NEW	CN1H2N	1/32W (.031W)	±200:>10Ω ±400:R<10Ω	—	10Ω - 1MΩ	12.5V	25V	-55°C to +125°C
	CN1E2K	1/16W (.063W)		10Ω - 100kΩ		10Ω - 1MΩ	25V	
	CN1E4K				1Ω - 1MΩ		50V	
	CN1J2K					10Ω - 1MΩ	25V	
	CN1J4K							
	CN1F8K	1/16W (.063W)* 0.25W per package						
CN1F8NK								

\* Note that network resistors generate higher heat rather than single flat chip resistor under rated power output

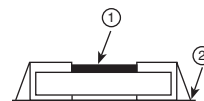
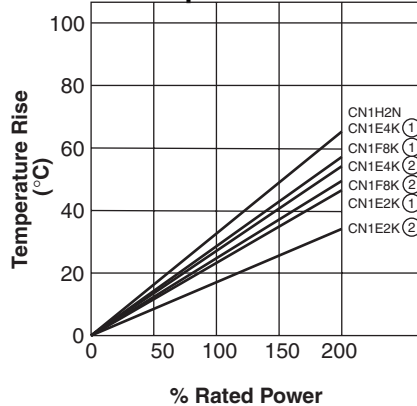
## 5. Environmental Applications

For temperature in excess of 70°C, the load shall be derated in accordance with the following figure.

### Derating Curve



### Surface Temperature Rise



## 5.1 Voltage Rating

Resistors shall have a rated direct current (DC) continuous working voltage or an approximate sine wave root mean square (RMS) alternating current (AC) continuous working voltage at a commercial line frequency and wave form corresponding to the power rating, as determined from the following formula:

In no case shall the rated DC or RMS AC continuous working voltage be greater than the applicable maximum value.

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

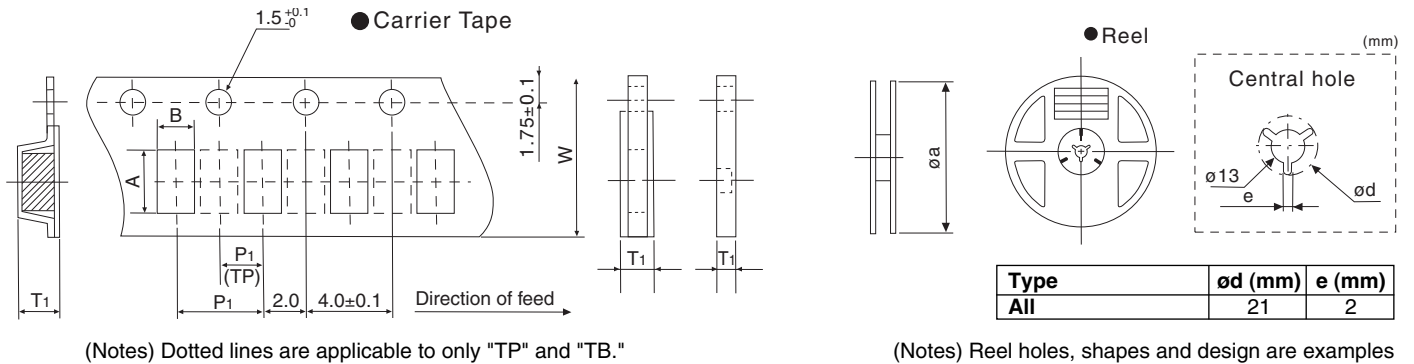
## 6. Characteristics

Item	Requirement	Test Method
Temperature Coefficient	Within specified limits	JIS C 5202 5.2B -55°C ~ +125°C
Short-time Overload	$\pm(2.0\% + 0.1\Omega)$ No visual damage	JIS C 5202 5.5A Rated voltage x 2.5
Resistance to Soldering Heat	$\pm(1.0\% + 0.1\Omega)$	JIS C 5202 6.4 260°C $\pm$ 5°C 10 sec. $\pm$ 1 sec.
Solderability	More than 75% of the surface of electrode shall be covered with new solder	JIS C 5202 6.5 230°C $\pm$ 5°C 2 sec. $\pm$ 0.5 sec.
Temperature Cycling	$\pm(1.0\% + 0.1\Omega)$ No mechanical damage	JIS C 5202 7.4 5 cycles of the change in temp. given in the following steps
		Step 1: -55°C $\pm$ 3°C / 30 minutes
		Step 2: Normal temp. 10 min. to 15 min.
		Step 3: +125°C $\pm$ 3°C / 30 minutes
Heat Resistance	$\pm(1.0\% + 0.1\Omega)$	JIS C 5202 7.2 125°C $\pm$ 2°C 1000 Hr
		JIS C 5202 7.9 40°C $\pm$ 2°C / 90 ~ 95% RH rated voltage 1000 Hr $\pm$ $\frac{4.8}{0}$ Hr
Endurance (Moisture Load)	$\pm(5.0\% + 0.1\Omega)$	JIS C 5202 7.10 70°C $\pm$ 2°C rated voltage 1000 Hr $\pm$ $\frac{4.8}{0}$ Hr
Endurance (Rated Load)	$\pm(5.0\% + 0.1\Omega)$	JIS C 5202 7.10 70°C $\pm$ 2°C rated voltage 1000 Hr $\pm$ $\frac{4.8}{0}$ Hr

## 8. Packaging Specifications

### 8.1 Paper Tape Dimensions

Type	Component Size (mm)			Carrier Tape	Quantity/ Reel (Pieces)	Taping (mm)					Reel Size	
	L	W	T			A	B	W	P1	T1		
CN_K	1F8	3.8±0.1	1.6±0.2	0.44±0.1	TP	5000	4.0±0.1	1.8±0.1	8.0±0.2	2.0±0.05	0.55±0.1	178
	1E2K	1.00	1	0.35	TP	10000	1.2±0.1	1.2±0.1	8.0±0.2	2.0±0.05	0.45±0.1	178
	1E4/1E4K	1.60	1.6	0.6/0.5	TP	10000	2.2±0.1	1.2±0.1	8.0±0.2	2.0±0.05	0.45±0.1	178
	TD				5000	1.9±0.1	1.9±0.1	8.0±0.2	4.0±0.1	0.6+0.2/-0 0.75+0.2/-0/	178	
	TDD				10000	1.9±0.1	1.1±0.1	8.0±0.2	4.0±0.1	0.6+0.2/-0 0.75+0.2/-0/	255	
	TD				5000	3.5±0.1	2.0±0.1	8.0±0.2	4.0±0.1	0.75+0.2/-0/	178	
1J4/1J4K	3.20	0.6/0.5	TDD	10000	1.9±0.1	1.1±0.1	8.0±0.2	4.0±0.1	0.75+0.2/-0/	0.6+0.2/-0	255	



## 9. Body Color

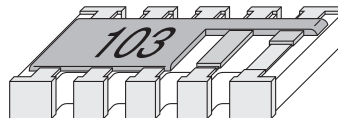
### 9.1 Body Convex

Body Color: Black  
Marking Color: White

### 9.2 Marking

±5%  
3-digit number

103 → 10000Ω → 10kΩ



±1%  
4-digit number

1002 → 10000Ω → 10kΩ

