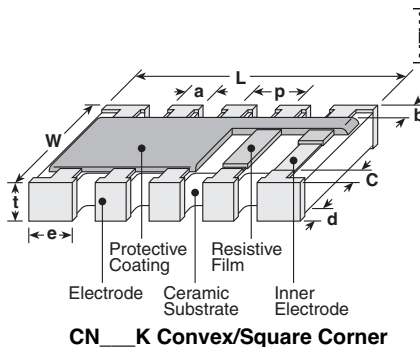# Flat Chip Resistor Array
Type CN_K/N

ISO 9001:2000 CERTIFIED
TS-16949 CERTIFIED
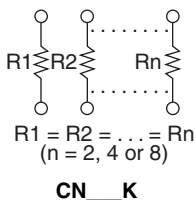
1. Features

■ 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
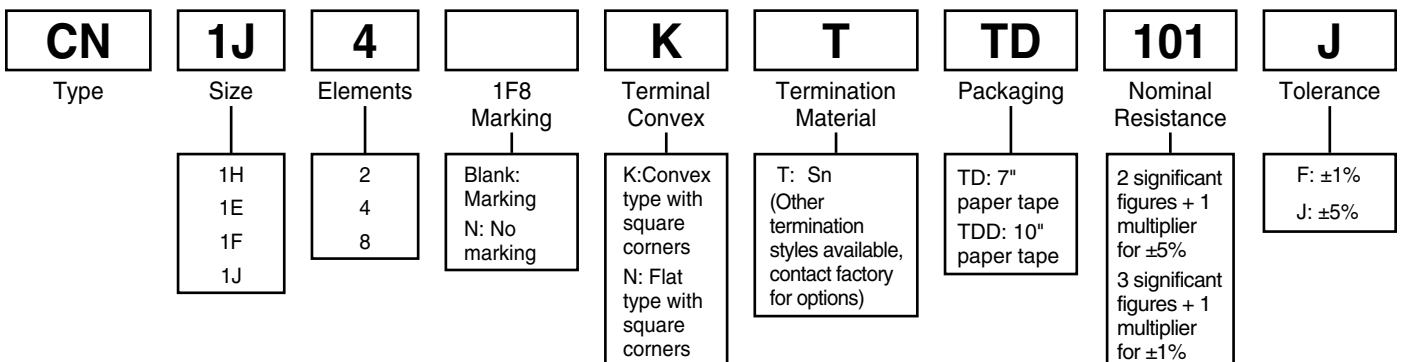
2. Dimensions

CN___K Convex/Square Corner

R1 = R2 = . . . = Rn
(n = 2, 4 or 8)

CN___K

Size Code	Dimensions inches (mm)								
	L	W	C	d	t	a (ref.)	b (ref.)	p (ref.)	e
1H2N (NEW)	.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)
1E2K	.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)
1E4K	.079±.004 (2.0±0.1)		.010±.004 (0.25±0.1)			.012±.006 (0.3±0.15)	.006±.004 (0.15±0.1)	.020 (0.5)	.013±.004 (0.33±0.1)
1J2K	.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)
1J4K	.126±.006 (3.2±0.15)								0.024 (0.607)
1F8K 1F8N	.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:

CN	1J	4		K	T	TD	101	J
Type	Size	Elements	1F8 Marking	Terminal Convex	Termination Material	Packaging	Nominal Resistance	Tolerance

Size:
1H
1E
1F
1J

Elements:
2
4
8

1F8 Marking:
Blank: Marking
N: No marking

Terminal Convex:
K: Convex type with square corners
N: Flat type with square corners

Termination Material:
T: Sn (Other termination styles available, contact factory for options)

Packaging:
TD: 7" paper tape
TDD: 10" paper tape

Nominal Resistance:
2 significant figures + 1 multiplier for ±5%
3 significant figures + 1 multiplier for ±1%

Tolerance:
F: ±1%
J: ±5%

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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)		——		12.5V	25V	
	CN1E2K				10Ω - 1MΩ	25V	50V	
	CN1E4K	1/16W (.063W)	±200:>10Ω ±400:R<10Ω					-55°C to +125°C
	CN1J2K			10Ω - 100kΩ		50V	100V	
	CN1J4K				1Ω - 1MΩ			
	CN1F8K CN1F8NK	1/16W (.063W)* 0.25W per package			10Ω - 1MΩ	25V	50V	

* Note that network resistors generate higher heat rather than single flat chip resistor under rated power output
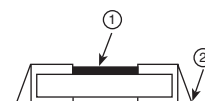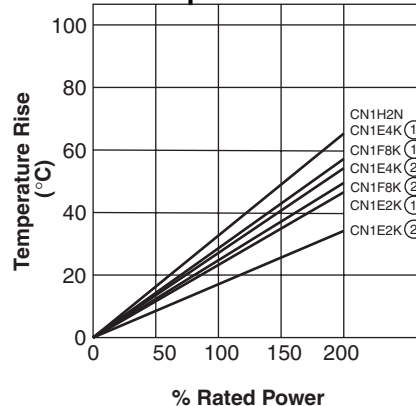
5. Environmental Applications

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

Derating Curve
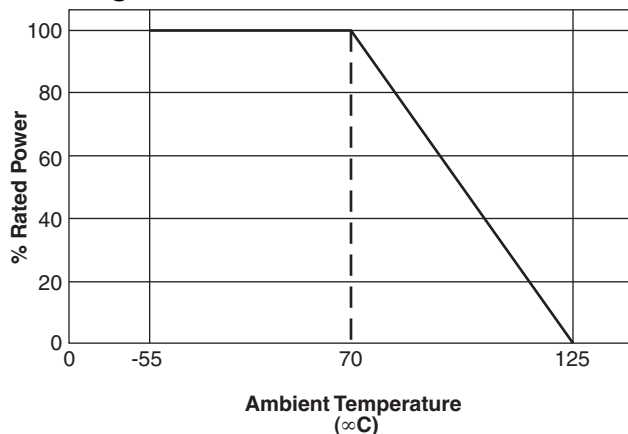
Surface Temperature Rise

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 (Ω)

6. Characteristics
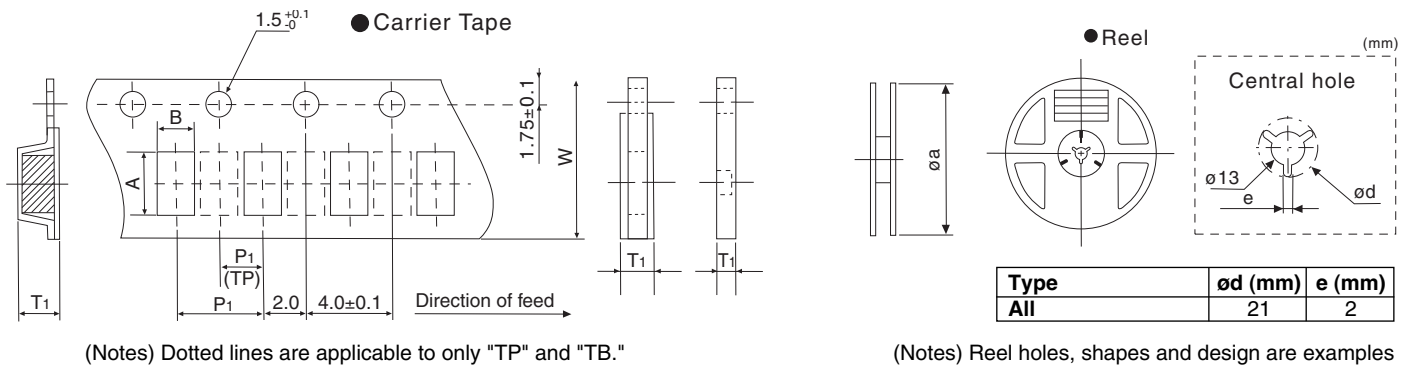
Item	Requirement	Test Method
Temperature Coefficient	Within specified limits	JIS C 5202 5.2B -55°C ~ +125°C
Short-time Overload	±(2.0% +0.1Ω) No visual damage	JIS C 5202 5.5A Rated voltage x 2.5
Resistance to Soldering Heat	±(1.0% +0.1Ω)	JIS C 5202 6.4 260°C ± 5°C 10 sec. ± 1 sec.
Solderability	More than 75% of the surface of electrode shall be covered with new solder	JIS C 5202 6.5 230°C ± 5°C 2 sec. ± 0.5 sec.
Temperature Cycling	±(1.0% +0.1Ω) No mechanical damage	JIS C 5202 7.4 5 cycles of the change in temp. given in the following steps
		Step 1: -55°C ± 3°C / 30 minutes
		Step 2: Normal temp. 10 min. to 15 min.
		Step 3: +125°C ± 3°C / 30 minutes
		Step 4: Normal temp. 10 min. to 15 min.
Heat Resistance	±(1.0% +0.1Ω)	JIS C 5202 7.2 125°C ± 2°C 1000 Hr
Endurance (Moisture Load)	±(5.0% +0.1Ω)	JIS C 5202 7.9 40°C ± 2°C / 90 ~ 95% RH rated voltage 1000 Hr ± $^{4.8}_{0}$Hr
Endurance (Rated Load)	±(5.0% +0.1Ω)	JIS C 5202 7.10 70°C ± 2°C rated voltage 1000 Hr ± $^{4.8}_{0}$Hr

KOA SPEER ELECTRONICS, INC.

spec sheet

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				TP	10000	2.2±0.1	1.2±0.1	8.0±0.2	2.0±0.05	0.45±0.1	178
	1J2/1J2K	1.60	1.6	0.6/0.5	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
	1J4/1J4K	3.20		0.6/0.5	TD	5000	3.5±0.1	2.0±0.1	8.0±0.2	4.0±0.1	0.75+0.2/-0/	178
					TDD	10000	1.9±0.1	1.1±0.1	8.0±0.2	4.0±0.1	0.75+0.2/-0/ 0.6+0.2/-0	255

● Carrier Tape

1.5 +0.1/-0

1.75±0.1

P1 (TP)

P1 2.0 4.0±0.1 Direction of feed

(Notes) Dotted lines are applicable to only "TP" and "TB."

● Reel

(mm)

Central hole

ø13 e ød

Type	ød (mm)	e (mm)
All	21	2

(Notes) Reel holes, shapes and design are examples
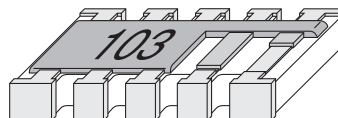
9. Body Color

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

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