

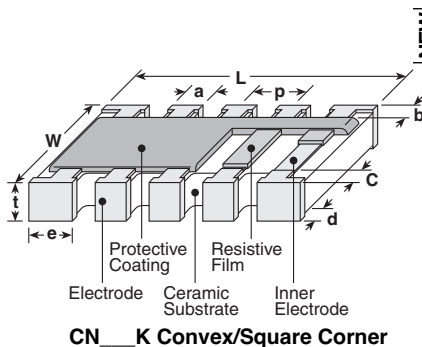
Flat Chip Resistor Array Type CN_K/N

ISO 9001:2000
CERTIFIED
TS-16949
CERTIFIED

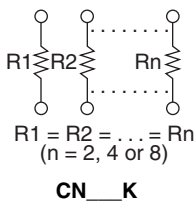
1. Features

- 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

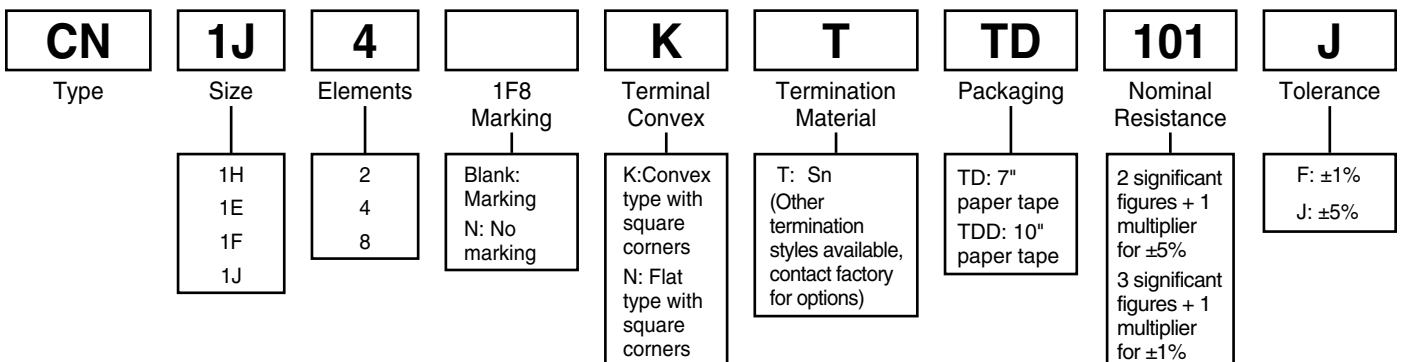


| Size Code | Dimensions inches (mm) | | | | | | | | | |
|--------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--------------------------|--------------------------|-------------------------|--------------------------|--|
| | L | W | C | d | t | a (ref.) | b (ref.) | p (ref.) | e | |
| NEW 1H2N | .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) | .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) | |
| 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) | .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) | |
| 1F8K | .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) | |
| 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:



4. Standard Applications

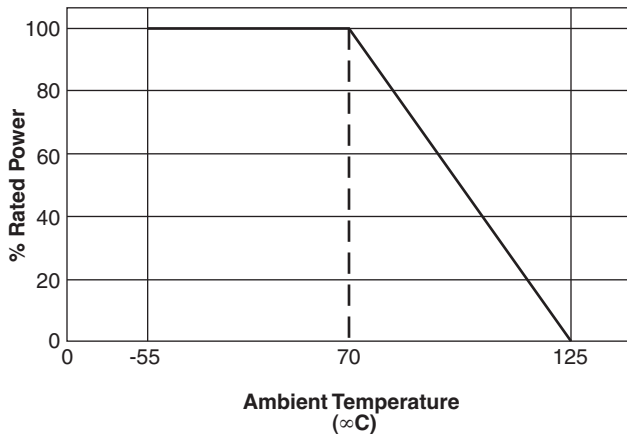
| | Part Designation | Power Rating @ 70°C (Per Element) | T.C.R. (ppm/°C) Max. | Resistance Range E-96 (F±1%) | Resistance Range E-24 (J±5%) | Absolute Maximum Working Voltage | Maximum Overload Voltage (5 Secs. Max.) | Operating Temperature Range |
|---------|------------------|-------------------------------------|-------------------------|------------------------------|------------------------------|----------------------------------|---|-----------------------------|
| 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

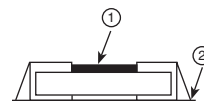
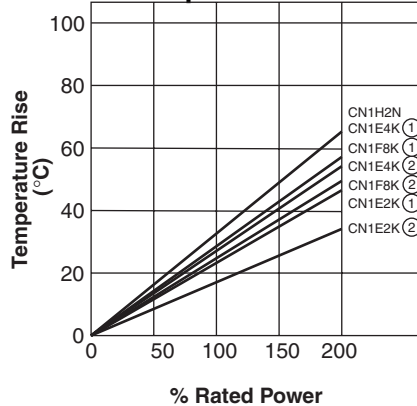
5. Environmental Applications

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 (Ω) |
|-------------------------|---|

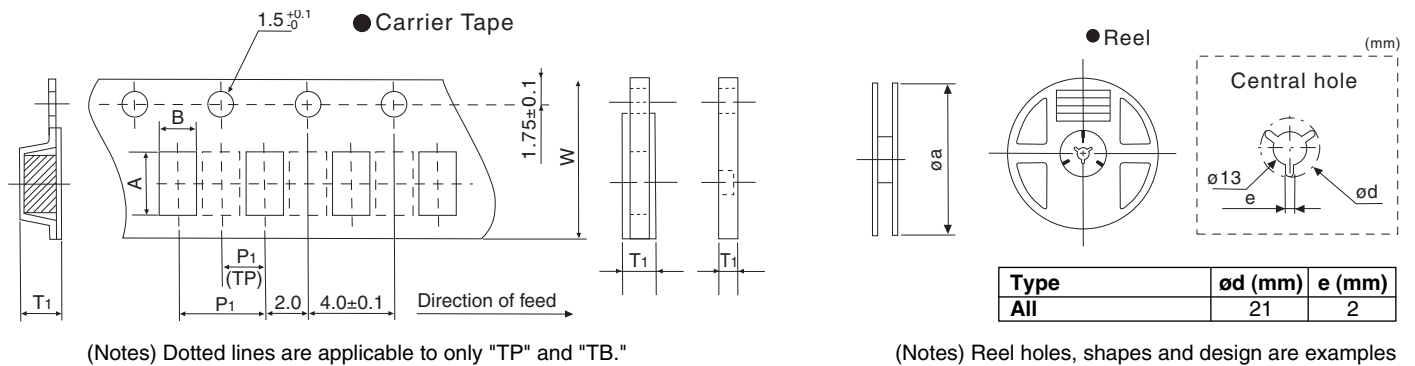
6. Characteristics

| 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 7.9 40°C \pm 2°C / 90 ~ 95% RH 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

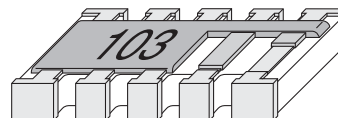
9.1 Body Convex

Body Color: Black
Marking Color: White

9.2 Marking

±5%
3-digit number

103 → 10000Ω → 10kΩ



±1%
4-digit number

1002 → 10000Ω → 10kΩ

