



Features

- Lead free version available (see How to Order "Termination" options)
- Lead free versions are RoHS compliant*
- Convex and concave terminals
- 2, 4 or 8 isolated elements available
- Resistance tolerance $\pm 1\%$ and $\pm 5\%$
- Resistance range: 10 ohms to 1 megohm

CAT/CAY 16 Series - Chip Resistor Arrays

Specifications

| Requirement | Characteristics | Test Method |
|-------------------------|---|--|
| Short Time Overload | $\pm 1\%$ ($\pm 2\%$ for CAT16-F8, -J8 & CAY16-J8) | Rated Voltage X 2.5, 5 seconds |
| Soldering Heat | $\pm 1\%$ | 260 °C $\pm 5\%$ °C, 10 seconds ± 1 second |
| Temperature Cycling (5) | $\pm 1\%$ | 125 °C (30 minutes) - normal (15 minutes) -30 °C (30 minutes) - normal (15 minutes) |
| Moisture Load Life | $\pm 2\%$ ($\pm 3\%$ for CAT16-F8, -J8 & CAY16-J8) | 1000 hours |
| Load Life | $\pm 2\%$ ($\pm 3\%$ for CAT16-F8, -J8 & CAY16-J8) | 1000 hours |

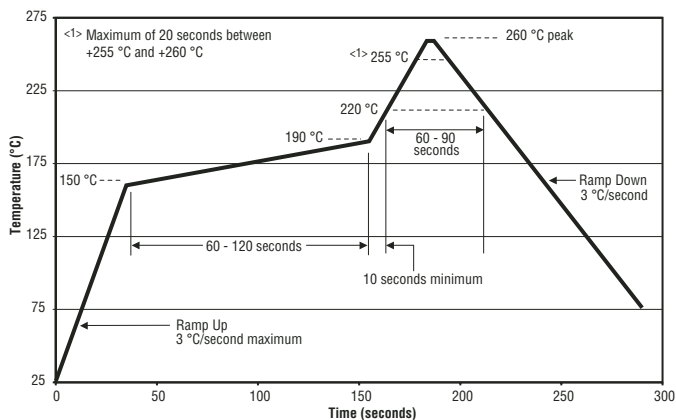
Characteristics

| Characteristics | CAT16/CAY16 |
|--|--------------------------------|
| Number of Elements | 2 (J2), 4 (F4, J4), 8 (F8, J8) |
| Power Rating Per Resistor | 62 mW (31 mW for CAY16-J8) |
| Resistance Tolerance | $\pm 1\%$, $\pm 5\%$ |
| Resistance Range: E24 (J), E96 + E24 (F) Zero-Ohm Jumper < 0.05 ohm | 10 ohms - 1 megohm |
| Max. Working Voltage | 50 V (25 V for CAY16-J8) |
| Operating Temp. Range | -55 °C - 125 °C |
| Rating Temperature | +70 °C |

How To Order

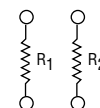
- CA Y 16 - 103 J 4**
- Chip Arrays _____
- Type _____
- T = Concave
 - Y = Convex
- Models _____
- J2 = 0606 Package Size
 - F4, J4 = 1206 Package Size
 - F8 = 2406 Package Size for CAT16;
 - J8 = 2406 Package Size for CAT16;
 - 1506 Package Size for CAY16
- Resistance Code _____
- 103 = 10 K ohms
 - 1003 = 100 K ohms (1 % tolerance)
 - 000 = Zero-ohm
- Resistance Tolerance _____
- J = $\pm 5\%$ (Use "J" for zero-ohm jumper)
 - F = $\pm 1\%$ (4 resistor package and CAT16-F8)
- Resistors _____
- 2 = 2 Isolated Resistors
 - 4 = 4 Isolated Resistors
 - 8 = 8 Isolated Resistors
- Terminations* _____
- LF = Tin-plated (lead free)
 - Blank = Solder-plated

Soldering Profile for Lead Free Chip Resistors and Arrays

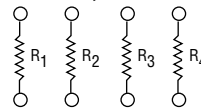


Schematics

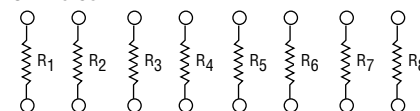
**CAT16-J2
CAY16-J2**



**CAT16-F4, -J4
CAY16-F4, -J4**



**CAT16-F8, -J8
CAY16-J8**



*RoHS Directive 2002/95/EC Jan 27 2003 including Annex

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Customers should verify actual device performance in their specific applications.

CAT/CAY 16 Series - Chip Resistor Arrays

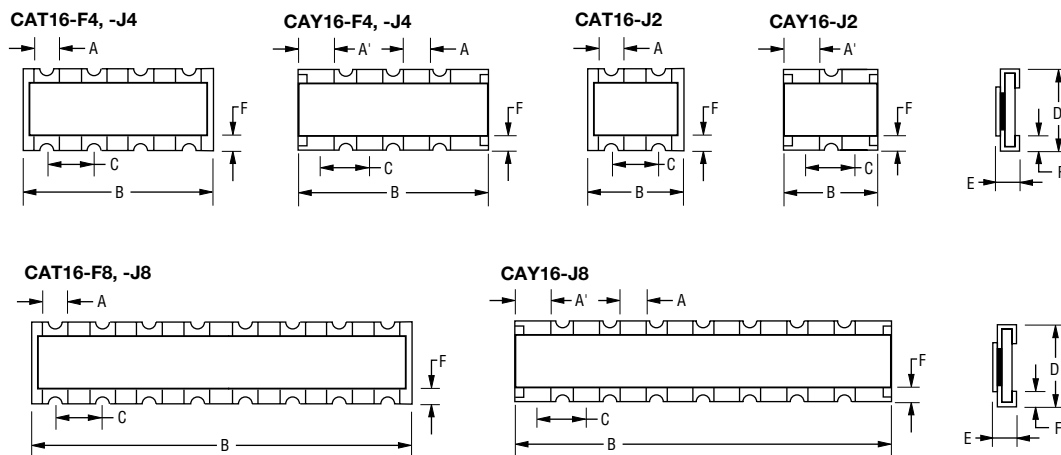
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Dimensions

| Model | A | A | B | C | D | E | F |
|---------------|---|---|---|---|---|---|---|
| CAT16-F4, -J4 | $\frac{0.40 \pm 0.15}{(.016 \pm .006)}$ | — | $\frac{3.20 \pm 0.20}{(.126 \pm .008)}$ | $\frac{0.80 \pm 0.05}{(.032 \pm .002)}$ | $\frac{1.60 \pm 0.20}{(.063 \pm .008)}$ | $\frac{0.50 \pm 0.10}{(.020 \pm .004)}$ | $\frac{0.30 \pm 0.15}{(.012 \pm .006)}$ |
| CAY16-F4, -J4 | $\frac{0.50 \pm 0.15}{(.002 \pm .006)}$ | $\frac{0.70 \pm 0.10}{(.027 \pm .008)}$ | $\frac{3.20 \pm 0.20}{(.126 \pm .008)}$ | $\frac{0.80 \pm 0.05}{(.032 \pm .002)}$ | $\frac{1.60 \pm 0.20}{(.063 \pm .008)}$ | $\frac{0.50 \pm 0.10}{(.020 \pm .004)}$ | $\frac{0.30 \pm 0.20}{(.012 \pm .008)}$ |
| CAT16-J2 | $\frac{0.40 \pm 0.15}{(.016 \pm .006)}$ | — | $\frac{1.60 \pm 0.15}{(.063 \pm .006)}$ | $\frac{0.80 \pm 0.05}{(.032 \pm .002)}$ | $\frac{1.60 \pm 0.15}{(.063 \pm .006)}$ | $\frac{0.60 \pm 0.15}{(.024 \pm .006)}$ | $\frac{0.30 \pm 0.20}{(.012 \pm .008)}$ |
| CAY16-J2 | — | $\frac{0.60 \pm 0.15}{(.024 \pm .006)}$ | $\frac{1.60 \pm 0.15}{(.063 \pm .006)}$ | $\frac{0.80 \pm 0.05}{(.032 \pm .002)}$ | $\frac{1.60 \pm 0.15}{(.063 \pm .006)}$ | $\frac{0.50 \pm 0.10}{(.020 \pm .004)}$ | $\frac{0.25 \pm 0.10}{(.010 \pm .004)}$ |
| CAT16-F8, -J8 | $\frac{0.40 \pm 0.15}{(.016 \pm .006)}$ | — | $\frac{6.40 \pm 0.20}{(.252 \pm .008)}$ | $\frac{0.80 \pm 0.15}{(.032 \pm .006)}$ | $\frac{1.60 \pm 0.20}{(.063 \pm .008)}$ | $\frac{0.60 \pm 0.15}{(.024 \pm .006)}$ | $\frac{0.30 \pm 0.20}{(.012 \pm .008)}$ |
| CAY16-J8 | $\frac{0.30 \pm 0.15}{(.012 \pm .006)}$ | $\frac{0.30 \pm 0.15}{(.012 \pm .006)}$ | $\frac{3.80 \pm 0.20}{(.15 \pm .008)}$ | $\frac{0.50 \pm 0.05}{(.02 \pm .002)}$ | $\frac{1.60 \pm 0.20}{(.063 \pm .008)}$ | $\frac{0.50 \pm 0.10}{(.02 \pm .004)}$ | $\frac{0.30 \pm 0.15}{(.012 \pm .006)}$ |

DIMENSIONS ARE: $\frac{\text{MM}}{\text{(INCHES)}}$

Configurations

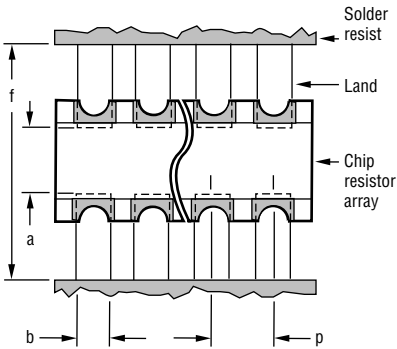


CAT/CAY 16 Series - Chip Resistor Arrays

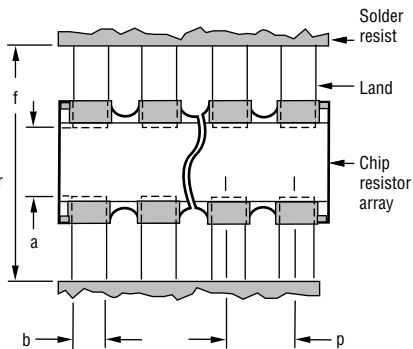


Land Patterns

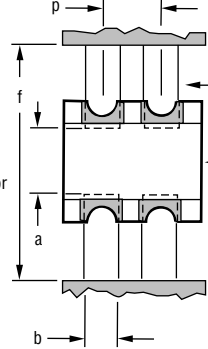
CAT16-F4, -J4, -F8, -J8



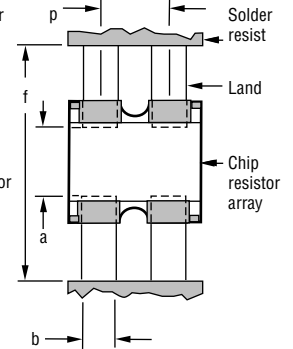
CAY16-F4, -J4, -J8



CAT16-J2

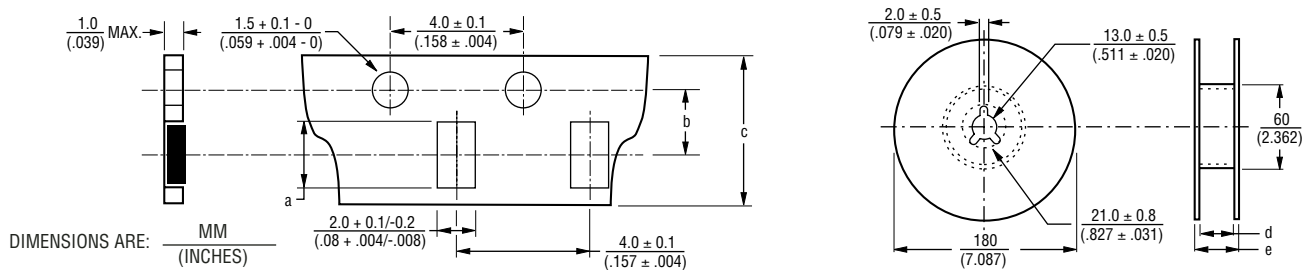


CAY16-J2



| Model | a | b | p | f |
|-------------------------|---|---|-----------------------|---|
| CAT16-F4, -J4, -F8, -J8 | $\frac{0.7 \text{ to } 0.9}{(.028 \text{ to } .035)}$ | $\frac{0.4 \text{ to } 0.45}{(.016 \text{ to } .0178)}$ | $\frac{0.80}{(.032)}$ | $\frac{2.0 \text{ to } 2.2}{(.079 \text{ to } .087)}$ |
| CAY16-F4, -J4 | $\frac{0.7 \text{ to } 0.9}{(.028 \text{ to } .035)}$ | $\frac{0.4 \text{ to } 0.45}{(.016 \text{ to } .0178)}$ | $\frac{0.80}{(.032)}$ | $\frac{2.4 \text{ to } 2.8}{(.094 \text{ to } .11)}$ |
| CAY16-J8 | $\frac{0.7 \text{ to } 0.9}{(.028 \text{ to } .035)}$ | $\frac{0.3 \text{ to } 0.35}{(.012 \text{ to } .014)}$ | $\frac{0.50}{(.020)}$ | $\frac{2.0 \text{ to } 2.2}{(.079 \text{ to } .087)}$ |
| CAT16-J2 | $\frac{0.7 \text{ to } 0.9}{(.028 \text{ to } .035)}$ | $\frac{0.4 \text{ to } 0.45}{(.016 \text{ to } .0178)}$ | $\frac{0.80}{(.032)}$ | $\frac{2.2 \text{ to } 2.6}{(.087 \text{ to } .102)}$ |
| CAY16-J2 | $\frac{0.7 \text{ to } 0.9}{(.028 \text{ to } .035)}$ | $\frac{0.4 \text{ to } 0.45}{(.016 \text{ to } .0178)}$ | $\frac{0.80}{(.032)}$ | $\frac{2.0 \text{ to } 2.2}{(.079 \text{ to } .087)}$ |

Packaging Dimensions



| Model | a | b | c | d | e |
|------------------------------|---|---|--|--|--|
| CAT16-F4, -J4 & CAY16-F4, J4 | $\frac{3.40 \pm 0.10}{(.134 \pm .004)}$ | $\frac{3.50 \pm .005}{(.138 \pm .004)}$ | $\frac{8.0 \pm 0.3}{(.315 \pm .012)}$ | $\frac{9.0 \pm 0.3}{(.354 \pm .012)}$ | $\frac{11.4 \pm 1.0}{(.449 \pm .040)}$ |
| CAT16-J2 & CAY16-J2 | $\frac{1.80 \pm 0.10}{(.070 \pm .004)}$ | $\frac{3.50 \pm .005}{(.138 \pm .004)}$ | $\frac{8.0 \pm 0.3}{(.315 \pm .012)}$ | $\frac{9.0 \pm 0.3}{(.354 \pm .012)}$ | $\frac{11.4 \pm 1.0}{(.449 \pm .040)}$ |
| CAT16-F8, -J8 | $\frac{6.90 \pm 0.20}{(.272 \pm .008)}$ | $\frac{5.50 \pm 0.10}{(.217 \pm .004)}$ | $\frac{12.0 \pm 0.2}{(.472 \pm .008)}$ | $\frac{13.0 \pm 0.2}{(.512 \pm .008)}$ | $\frac{15.4 \pm 1.0}{(.606 \pm .040)}$ |
| CAY16-J8 | $\frac{4.10 \pm 0.15}{(.161 \pm .012)}$ | $\frac{3.50 \pm 0.05}{(.138 \pm .002)}$ | $\frac{8.0 \pm 0.3}{(.315 \pm .012)}$ | $\frac{9.0 \pm 0.3}{(.354 \pm .012)}$ | $\frac{11.4 \pm 1.0}{(.449 \pm .040)}$ |

- 5,000 pcs. per reel (J2, J4, CAY16-J8)
- 4,000 pcs. per reel (CAT16-F8, -J8)
- Paper tape

REV.07/05

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Chip Resistor Arrays - Application Note

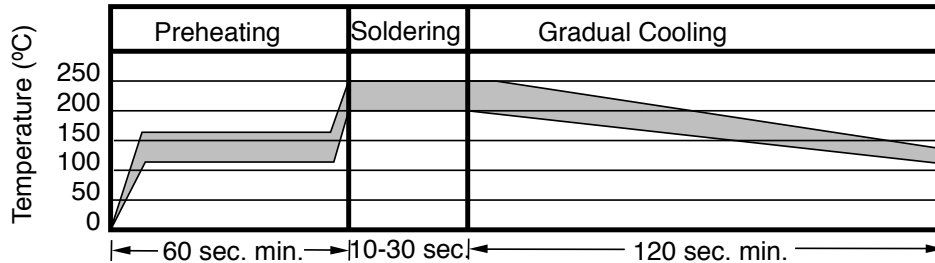
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Component Placement

- Reduce the mechanical stress to a minimum during and after placing of the unit in order not to damage the terminals and protective coating.
- Misplacement of components may cause solder bridges.

Soldering

- Reflow soldering: Recommendation is shown in the following chart.
- Wave soldering: Recommendation according to IEC standards.
- Hand soldering: Don't touch the protective coating of the part. Solder within 3 seconds when the temperature is over 280 °C.



Cleaning

A recommended cleaning method is shown in the following table.

| Solvents | Cleaning Condition | |
|-------------------|--------------------|---|
| | Dipping | Ultrasonic Wave Washing |
| Isopropyl alcohol | 5 minutes maximum | 1 minute maximum Power: 20 W/L Frequency: 10 to 100 kHz |