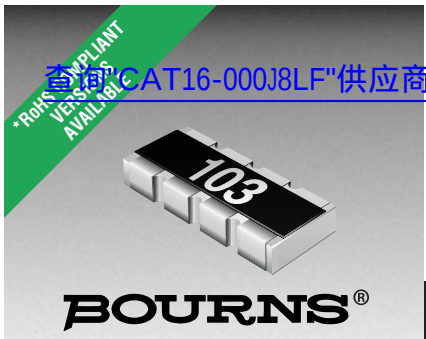




## Features

- 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

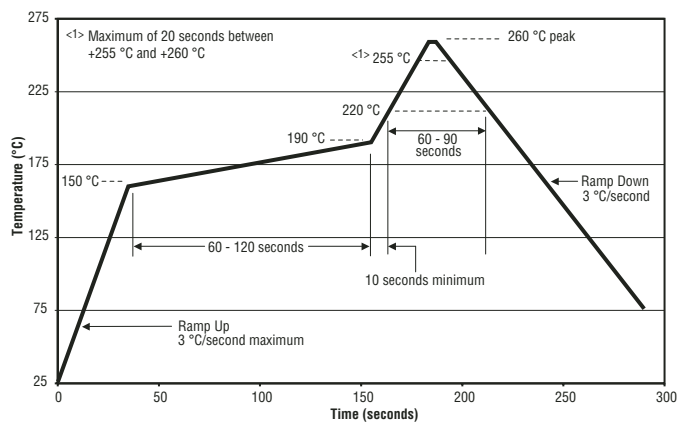
### Specifications

| 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 $\pm 1$ second                                           |
| Temperature Cycling (5) | $\pm 1\%$                                           | 125 °C (30 minutes) - normal (15 minutes)<br>-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)<br>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                |

### Soldering Profile for Lead Free Chip Resistors and Arrays



### 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\*

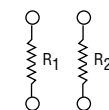
- LF = Tin-plated (lead free)
- Blank = Solder-plated

\*Model CAY16-J8 is available only with tin-plated terminations.

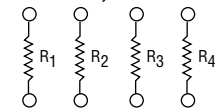
For Standard Values Used in Capacitors, Inductors, and Resistors, [click here](#).

### Schematics

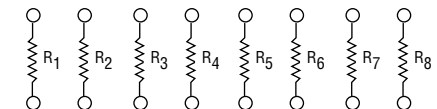
CAT16-J2  
CAY16-J2



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



CAT16-F8, -J8  
CAY16-J8



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

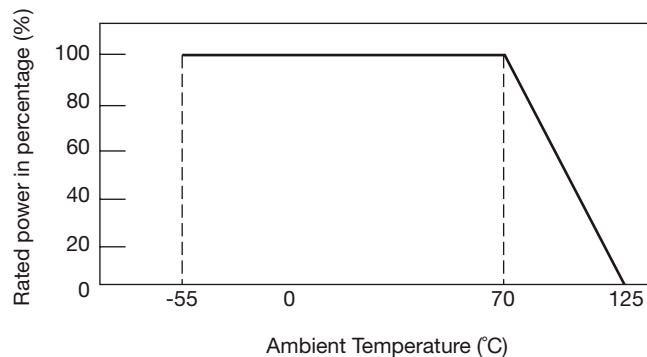
Specifications are subject to change without notice.

Customers should verify actual device performance in their specific applications.

## CAT/CAY 16 Series - Chip Resistor Arrays

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### Derating Curve

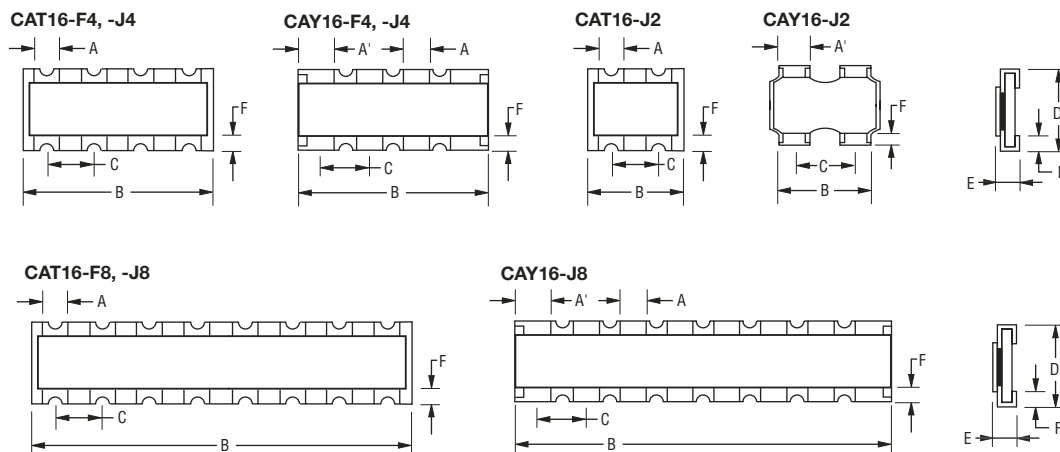


### Dimensions

| 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      | —                                       | $\frac{0.60 \pm 0.15}{(.024 \pm .006)}$ | $\frac{1.60 \pm 0.15}{(.063 \pm .006)}$ | $\frac{0.76 \pm 0.10}{(.030 \pm .004)}$ | $\frac{1.60 \pm 0.15}{(.063 \pm .006)}$ | $\frac{0.45 \pm 0.10}{(.018 \pm .004)}$ | $\frac{0.30 \pm 0.20}{(.012 \pm .008)}$ |
| 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



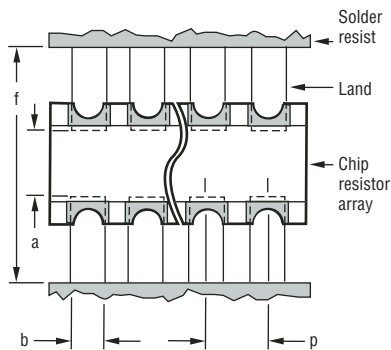
Specifications are subject to change without notice.  
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## CAT/CAY 16 Series - Chip Resistor Arrays

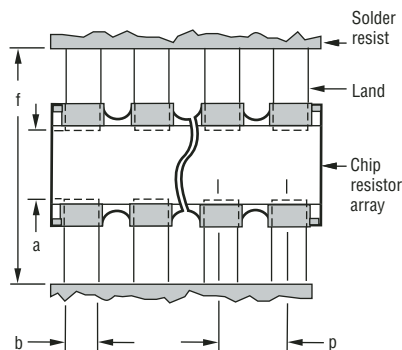
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### Land Patterns

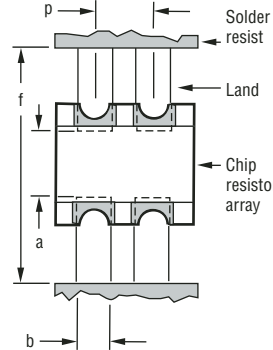
CAT16-F4, -J4, -F8, -J8



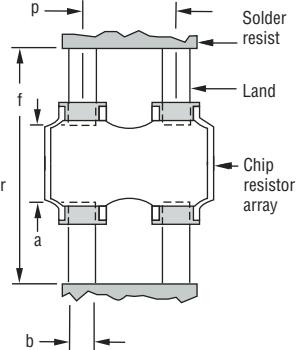
CAY16-F4, -J4, -J8



CAT16-J2

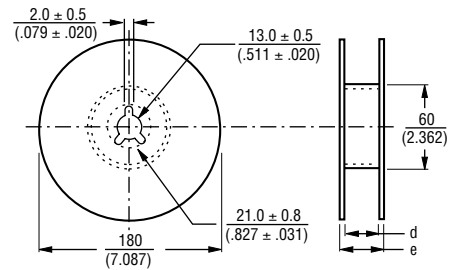
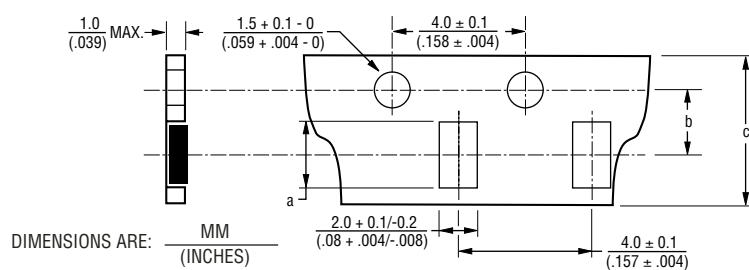


CAY16-J2



| 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                | $\frac{0.7 \text{ to } 0.9}{(.028 \text{ to } .035)}$ | $\frac{0.4 \text{ to } 0.5}{(.016 \text{ to } .020)}$   | $\frac{0.80}{(.032)}$ | $\frac{2.0 \text{ to } 2.6}{(.079 \text{ to } .102)}$ |

### 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. 07/06

Specifications are subject to change without notice.  
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## Chip Resistor Arrays - Application Note

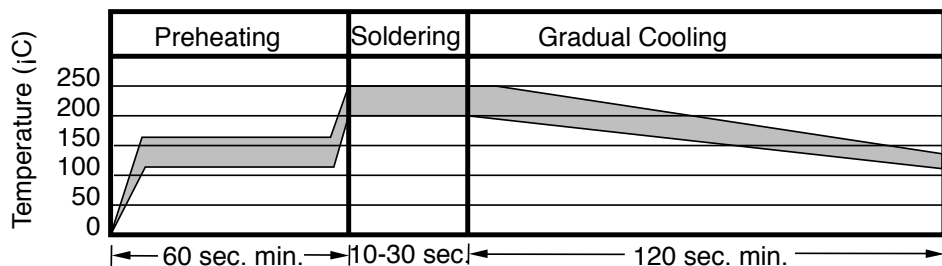
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### Component Placement

- 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<br>Power: 20 W/L<br>Frequency: 10 to 100 kHz |