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ELECTRONICS

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Jameco Part Number 774209



## 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) -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

### 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\* \_\_\_\_\_

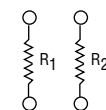
- LF = Tin-plated (lead free)
- Blank = Solder-plated

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

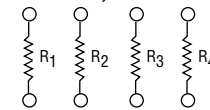
For Standard Values Used in Capacitors, Inductors, and Resistors, [click here](#).

### Schematics

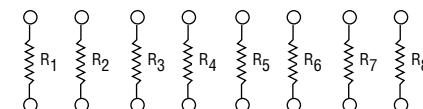
CAT16-J2  
CAY16-J2



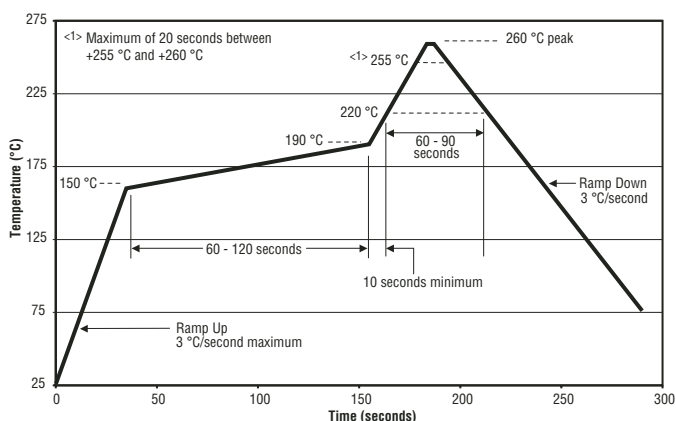
CAT16-F4, -J4  
CAY16-F4, -J4



CAT16-F8, -J8  
CAY16-J8



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



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

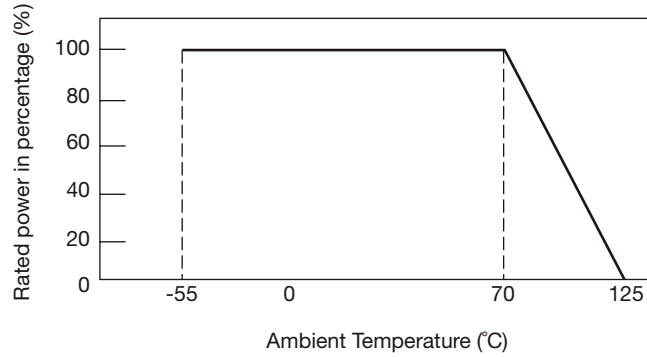
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# CAT/CAY 16 Series - Chip Resistor Arrays

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## Derating Curve

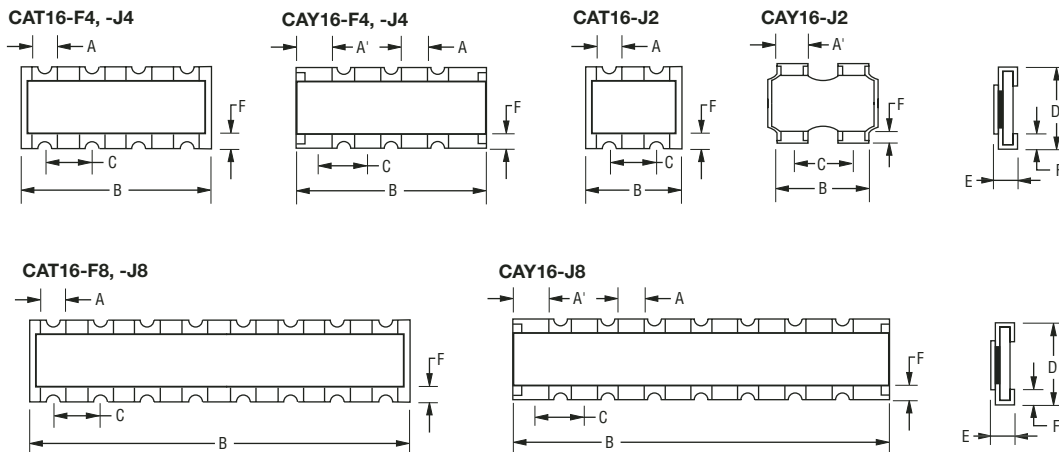


## Dimensions

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

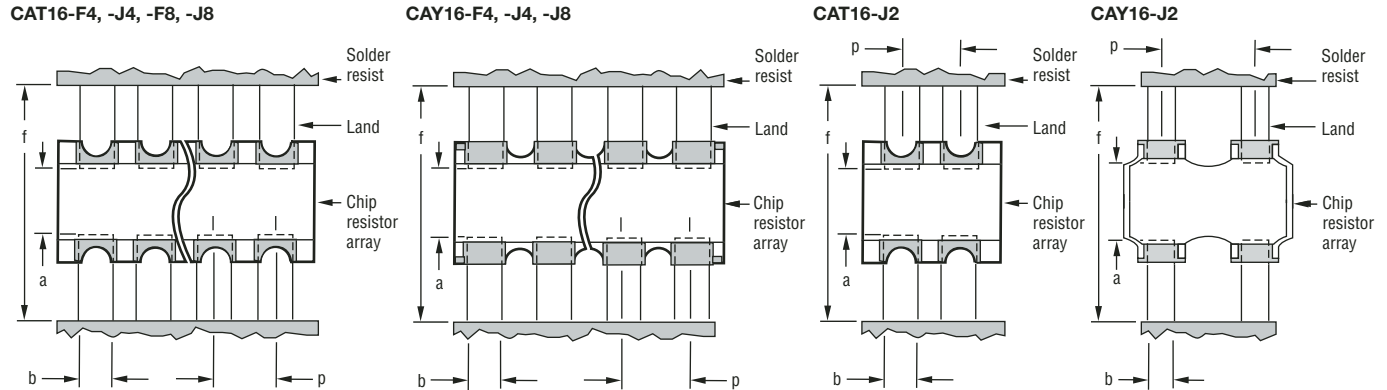


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# CAT/CAY 16 Series - Chip Resistor Arrays

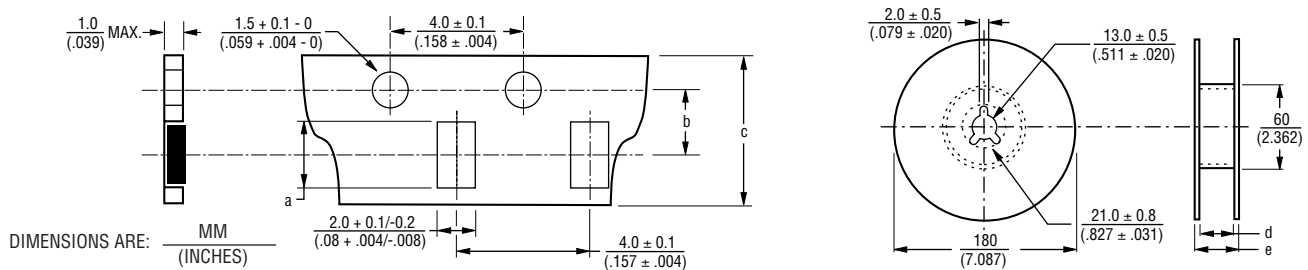
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## Land Patterns



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



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

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

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# Chip Resistor Arrays - Application Note

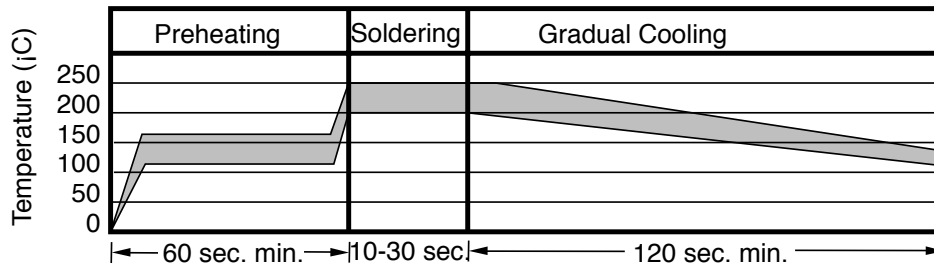
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## Component Placement

- 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