

BOURNS[®]

Features

- Convex and concave terminals
- 4 isolated elements available
- Resistance tolerance 5% and 1%
- E24 series from 10 ohms to 1 megohm

CAT/CAY 16 Series - Chip Resistor Arrays

Specifications

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

Characteristics

| Characteristics | CAT16/CAY16 |
|-----------------------|--------------------|
| Number of Elements | 4 |
| Power Rating | 62mW |
| Resistance Tolerance | 5%, 1% |
| Resistance Range E24 | 10 ohms - 1 megohm |
| T.C.R. | ±200ppm/°C |
| Max. Working Voltage | 50V |
| Operating Temp. Range | -55°C - 125°C |
| Rating Temperature | +70°C |

How To Order

Chip Arrays **CA Y 16 - 103 J 4**

Type
 • T = Concave
 • Y = Convex

Models
 • 16 = 1205 Package Size

Resistance Code
 • 103 = 10K ohms
 • 1003 = 100K ohms (1% tolerance)

Resistance Tolerance
 • J = ±5%
 • F = ±1%

Resistors
 • 4 = 4 pcs.

Dimensions

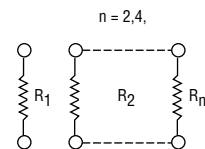
| Model | A | A' | B | C | D | E | F |
|-------|------------------------|--------------------------|------------------------|-------------------------|------------------------|-----------------------|-------------------------|
| CAT16 | 0.5±0.15 (.02±.006) | — | 3.2±0.2 (.126±.008) | 0.8±0.05 (.032±.002) | 1.6±0.2 (.063±.008) | 0.5±0.1 (.02±.004) | 0.3±0.15 (.012±.006) |
| CAY16 | 0.5±0.15 (.02±.006) | 0.65±0.15 (.026±.006) | 3.2±0.2 (.126±.008) | 0.8±0.05 (.032±.002) | 1.6±0.2 (.063±.008) | 0.5±0.1 (.02±.004) | 0.3±0.15 (.012±.006) |

*5% preferred, 1% available

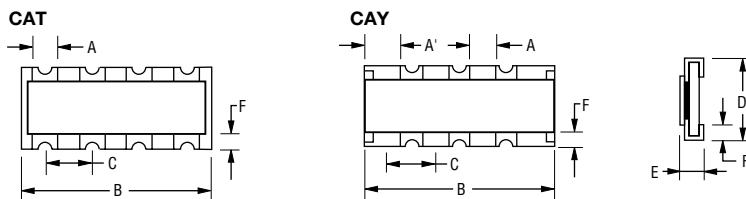
Tape And Reel Packaging

- 5,000 pieces per reel
- 178mm diameter plastic reel
- Paper tape

Schematic



Configuration



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

Standard Values Used in Bourns Chip Resistors & Arrays



According to IEC Publication 63

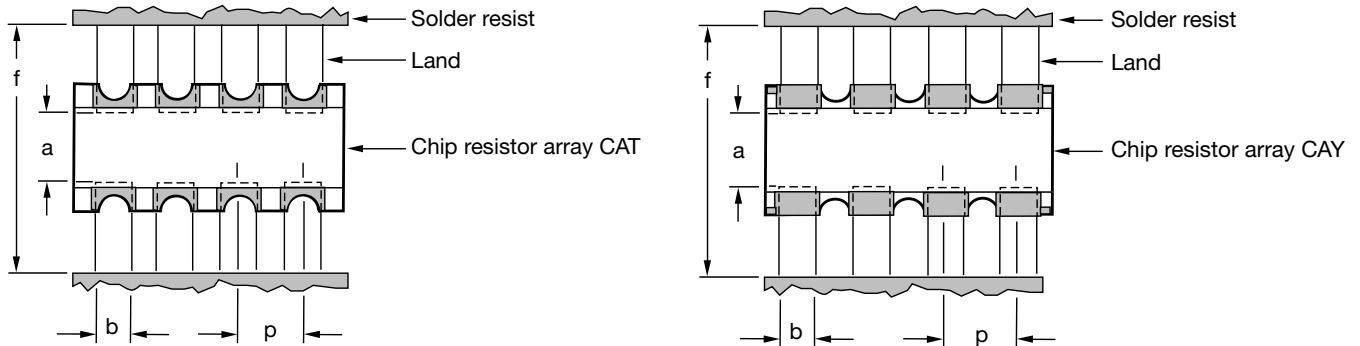
| E96 | | | | | E24 | E12 |
|-----|-----|-----|-----|-----|---------------------------------|-----------|
| 100 | 169 | 287 | 487 | 825 | 10 | 10 |
| 102 | 174 | 294 | 499 | 845 | 11 | |
| | | | | | 12 | 12 |
| | | | | | 13 | |
| 105 | 178 | 301 | 511 | 866 | 15 | 15 |
| | | | | | 16 | |
| 107 | 182 | 309 | 523 | 887 | 18 | 18 |
| | | | | | 20 | |
| 110 | 187 | 316 | 536 | 909 | 22 | 22 |
| | | | | | 24 | |
| 113 | 191 | 324 | 549 | 931 | 27 | 27 |
| | | | | | 30 | |
| 115 | 196 | 332 | 562 | 953 | 33 | 33 |
| | | | | | 36 | |
| 118 | 200 | 340 | 576 | 976 | 39 | 39 |
| | | | | | 43 | |
| 121 | 205 | 348 | 590 | | 47 | 47 |
| | | | | | 51 | |
| 124 | 210 | 357 | 604 | | 56 | 56 |
| | | | | | 62 | |
| 127 | 215 | 365 | 619 | | 68 | 68 |
| | | | | | 75 | |
| 130 | 221 | 374 | 634 | | 82 | 82 |
| | | | | | 91 | |
| 133 | 226 | 383 | 649 | | | |
| 137 | 232 | 392 | 665 | | | |
| | | | | | Part Number Series Range | |
| 140 | 237 | 402 | 681 | | CR0402 (1%) | E96 + E24 |
| | | | | | CR0402 (5%) | E24 |
| 143 | 243 | 412 | 698 | | CR0603 (1%) | E96 + E24 |
| | | | | | CR0603 (5%) | E24 |
| 147 | 249 | 422 | 715 | | CR0805 (1%) | E96 + E24 |
| | | | | | CR0805 (5%) | E24 |
| 150 | 255 | 432 | 732 | | CR1206 (1%) | E96 + E24 |
| | | | | | CR1206 (5%) | E24 |
| 154 | 261 | 442 | 750 | | CAY10 | E12 |
| | | | | | CAT16/CAY16 | E12 |
| 158 | 267 | 453 | 768 | | CAY17 | E12 |
| | | | | | CAT25 | E24 |
| 162 | 274 | 464 | 787 | | | |
| 165 | 280 | 475 | 806 | | | |

Chip Resistor Arrays - Application Note



1. Land Pattern Design

Recommended land pattern design for the chip arrays shown in the following illustration.



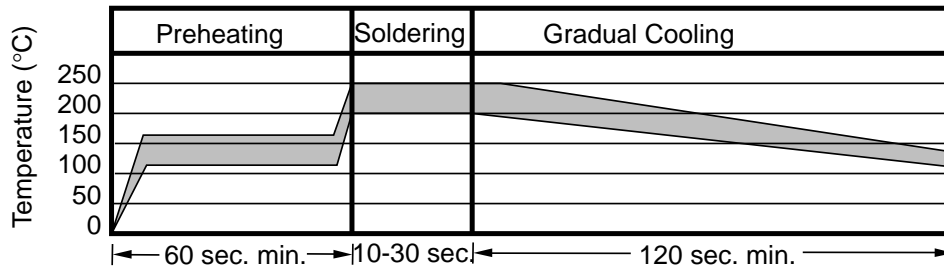
| Model | a | b | p | f |
|----------|---|---|-----------------------|---|
| CAT16..4 | $\frac{0.7 \text{ to } 0.9}{(.028 \text{ to } .035)}$ | $\frac{0.4 \text{ to } 0.45}{(.016 \text{ to } .0178)}$ | $\frac{0.80}{(.032)}$ | $\frac{2.0 \text{ to } 2.2}{(.079 \text{ to } .087)}$ |
| CAY16..4 | $\frac{0.7 \text{ to } 0.9}{(.028 \text{ to } .035)}$ | $\frac{0.4 \text{ to } 0.45}{(.016 \text{ to } .0178)}$ | $\frac{0.80}{(.032)}$ | $\frac{2.4 \text{ to } 2.8}{(.094 \text{ to } .11)}$ |

2. 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.

3. 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.



4. Cleaning

A recommended cleaning method is shown in the following table.

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

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