

## Features

- Operating temperature Range : -55°C-+125°C; >85°C with rated voltage derating
- Capacitance tolerance: ±20%; ±10%(for special order)
- DC leakage at 25°C;  $I_0 \leq 0.01 C_R U_R$  or 0.5uA(Whichever is greater)
- Dissipation factor at 20°C; Please See Table 3
- Dimensions ,rated voltage and nominal capacitance:Please see Table 1 & 2 and Figure 1
- Temperature characteristics:See Table 3
- ESR:See Table 4



## Brief Introduction

CA45 Series sinter-anode, molded solid tantalum chip capacitor, featuring small size, high capacitance, high reliability and excellent operation performances, is used for telecommunications, computers, camcorder, SMT electric circuits and so on, CA45 Series meets the requirements of EIA Standard 535BAAC.

## Dimensions--Millimeters

table1

| Case Size | L       | W       | H       | S       | W1      |
|-----------|---------|---------|---------|---------|---------|
| S         | 2.0±0.2 | 1.3±0.2 | 1.2±0.2 | 0.5±0.3 | 1.2±0.1 |
| A         | 3.2±0.2 | 1.6±0.2 | 1.6±0.2 | 0.8±0.3 | 1.2±0.1 |
| B         | 3.5±0.2 | 2.8±0.2 | 1.9±0.2 | 0.8±0.3 | 2.2±0.1 |
| C         | 6.0±0.3 | 3.2±0.3 | 2.5±0.3 | 1.3±0.3 | 2.2±0.1 |
| D         | 7.3±0.3 | 4.3±0.3 | 2.8±0.3 | 1.3±0.3 | 2.4±0.1 |
| E         | 7.3±0.3 | 4.3±0.3 | 4.0±0.3 | 1.3±0.3 | 2.4±0.1 |

## Temperature characteristics

table3

| Capacitance (uF) | Cap.Change |       |        | DF Max |       |       |        | DCL Max          |                  |
|------------------|------------|-------|--------|--------|-------|-------|--------|------------------|------------------|
|                  | -55°C      | +85°C | +125°C | -55°C  | +20°C | +85°C | +125°C | +85°C            | +125°C           |
| t≤1.0            | -10        | +10   | +12    | 6      | 4     | 6     | 6      | 10I <sub>0</sub> | 12I <sub>0</sub> |
| 1.5-68           |            |       |        | 10     | 6     | 10    | 10     |                  |                  |
| 100-470          |            |       |        | 12     | 8     | 12    | 12     |                  |                  |

## Outline Drawings

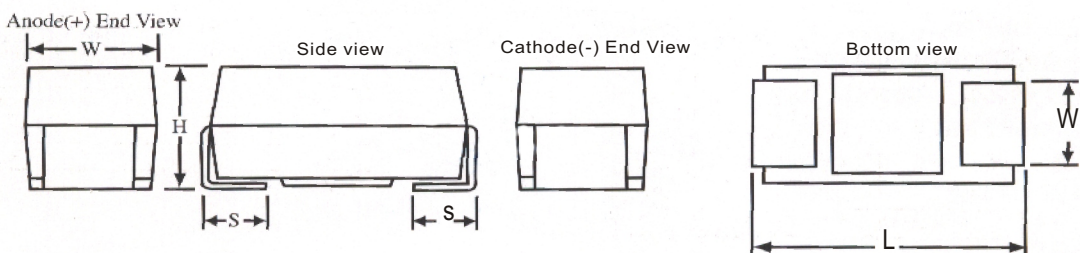
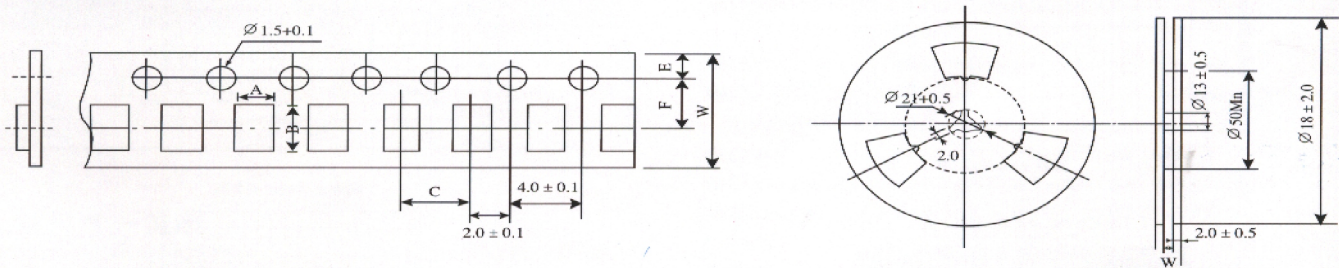


Figure 1

table 4

| Rated Voltage                       | 4       | 6.3     | 10      | 16       | 20      | 25      | 35      | 50        |
|-------------------------------------|---------|---------|---------|----------|---------|---------|---------|-----------|
| Capacitance (Standard/Extended)(uF) |         |         |         |          |         |         |         |           |
| 0.1                                 |         |         |         |          | 25.0    |         | 24.0    | 22.0      |
| 0.15                                |         |         |         |          | 25.0    |         | 21.0    | 17.0/15.0 |
| 0.22                                |         |         |         |          | 25.0    |         | 18.0    | 14.0      |
| 0.33                                |         |         |         |          | 25.0    |         | 15.0    | 12.0      |
| 0.47                                |         |         |         | 25.0     | 25.0    | 14.0    | 10/12   | 8.0       |
| 0.68                                |         |         | 30.0    | 25.0     | 12/25   | 10.0    | 8.0     | 7.0       |
| 1.0                                 |         | 14/25   | 13/25   | 11/20    | 9.0     | 7/8     | 6.5     | 5.5       |
| 1.5                                 | 30.0    | 12/25   | 10.0/25 | 8.0/12.0 | 5/6.5   | 5.0     | 4.5/5.2 | 4.0/4.5   |
| 2.2                                 | 25.0    | 9/20    | 7.0/15  | 5.5/6.5  | 3.5/5.3 | 4.5     | 3.5     | 2.5       |
| 3.3                                 | 9/20    | 7.0/12  | 5.5/10  | 4.5/5.0  | 2.5/3.0 | 2.8     | 2.0/2.5 | 2.0       |
| 4.7                                 | 7.5/10  | 6.0/7.0 | 4/5     | 3.5/4    | 2.5/2.8 | 2.4     | 1.5/2.2 | 1.4       |
| 6.8                                 | 6.5/7.0 | 4/5     | 3/4     | 2.5/3.5  | 1.8/2.0 | 1.4/2.0 | 1.3     |           |
| 10                                  | 4/6     | 3/4     | 2.5/3.0 | 2.0/2.8  | 1.3     | 1.2/1.8 | 1.0     |           |
| 15                                  | 3.5/4   | 3.3/4.0 | 2.2/2.8 | 1.8      | 1.1     | 1.0     | 0.9     |           |
| 22                                  | 3.2/3.5 | 2.5/3.5 | 1.8/2.4 | 1.1/1.6  | 0.9     | 0.9     | 0.9     |           |
| 33                                  | 2.2/2.8 | 1.8/2.0 | 1.1/1.6 | 0.9/1.5  | 0.9     | 0.9     |         |           |
| 47                                  | 1.8/2.2 | 1.6/2.0 | 0.9/1.2 | 0.9/1.4  | 0.9/0.9 |         |         |           |
| 68                                  | 1.1/1.6 | 0.9/1.2 | 0.9     | 0.9      | 0.9     |         |         |           |
| 100                                 | 0.9/1.3 | 0.9/1.4 | 0.9     | 0.9      |         |         |         |           |
| 150                                 | 0.9     | 0.9     | 0.9     | 0.9      |         |         |         |           |
| 220                                 | 0.9     | 0.9     | 0.9     | 0.9      |         |         |         |           |
| 330                                 | 0.9     | 0.9     | 0.9     |          |         |         |         |           |
| 470                                 | 0.9     |         |         |          |         |         |         |           |

## Tape and Reel Dimensions



| Case Size | A $\pm 0.2$ | B $\pm 0.2$ | C $\pm 0.1$ | E $\pm 0.1$ | F $\pm 0.1$ | W $\pm 0.3$ |
|-----------|-------------|-------------|-------------|-------------|-------------|-------------|
| S         | 1.5         | 2.4         | 4.0         | 1.75        | 3.5         | 8.0         |
| A         | 1.9         | 3.5         | 4.0         | 1.75        | 3.5         | 8.0         |
| B         | 3.1         | 3.8         | 4.0         | 1.75        | 3.5         | 8.0         |
| C         | 3.6         | 6.4         | 8.0         | 1.75        | 5.5         | 12.0        |
| D         | 4.7         | 7.7         | 8.0         | 1.75        | 5.5         | 12.0        |
| E         | 4.8         | 7.7         | 8.0         | 1.75        | 5.5         | 12.0        |

| Case Size | W     |      |       | Qty per reel |
|-----------|-------|------|-------|--------------|
| A B       | +1.50 | 8.4  | -0.00 | 2000         |
| C D       | +2.00 | 12.4 | -0.00 | 500          |
| E         | +2.00 | 12.4 | -0.00 | 400          |
| S         | +2.00 | 12.4 | -0.00 | 2500         |

table2-1

| Rated Voltage    | 4.0                            | 6.3 | 10.0 | 16.0 | 20.0 | 25.0 | 35.0 | 50.0 |
|------------------|--------------------------------|-----|------|------|------|------|------|------|
| Voltage Derating | 2.5                            | 4.0 | 6.3  | 10.0 | 13.0 | 16.0 | 23.0 | 33.0 |
| Surge Voltage    | 5.0                            | 8.0 | 13.0 | 20.0 | 26.0 | 32.0 | 46.0 | 65.0 |
| Surge Voltage    | 3.4                            | 5.0 | 9.0  | 12.0 | 16.0 | 20.0 | 26.0 | 38.0 |
| Capacitance      | Case Size (Standard/ Extended) |     |      |      |      |      |      |      |
| 0.1              |                                |     |      |      | S    |      | A    | A    |
| 0.15             |                                |     |      |      | S    |      | A    | B/A  |
| 0.22             |                                |     |      |      | S    |      | A    | B    |
| 0.33             |                                |     |      |      | S    |      | A    | B    |
| 0.47             |                                |     |      | S    | S    | A    | B/A  | C    |
| 0.68             |                                |     | S    | S    | A/S  | A    | B    | C    |
| 1.0              |                                | A/S | A/S  | A/S  | A    | B/A  | B    | C    |
| 1.5              | S                              | A/S | A/S  | A/S  | B/A  | B    | C/B  | D/C  |
| 2.2              | S                              | A/S | A/S  | B/A  | B/A  | B    | C    | D    |
| 3.3              | A/S                            | A/S | A/S  | B/A  | C/B  | C    | D/C  | D    |
| 4.7              | A/S                            | A/S | B/A  | B/A  | D/C  | C    | D/C  | E    |
| 6.8              | A/S                            | B/A | B/A  | C/B  | D/C  | D/C  | D    |      |
| 10               | B/A                            | B/A | B/A  | C/B  | D    | D/C  | D    |      |
| 10               | B/A                            | B/A | C/B  | C    | D    | D    | E    |      |
| 22               | B/A                            | B/A | C/B  | D/C  | D    | D    | E    |      |
| 33               | C/B                            | C/B | D/C  | D/C  | D    | E    |      |      |
| 47               | C/B                            | C/B | D/C  | D/C  | E/D  |      |      |      |
| 68               | D/C                            | D/C | D    | D    | E    |      |      |      |
| 100              | D/C                            | D/C | D    | D    |      |      |      |      |
| 150              | D/C                            | D   | E    | E    |      |      |      |      |
| 220              | D                              | E   | E    | E    |      |      |      |      |
| 330              | E                              | E   | E    |      |      |      |      |      |
| 470              | E                              |     |      |      |      |      |      |      |