# ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

## CA series

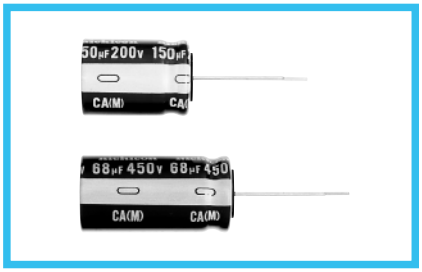
Miniature Sized, High Ripple Current, Long Life

Smaller | Long Life | High Ripple Current

- High ripple current and Long Life product withstanding load life of 12000 hours(10000 hours for φD=10) at +105°C.
- Suited for ballast application.
- Compliant to the RoHS directive (2011/65/EU).

CA — Long Life → PT

Smaller → CS



## ■Specifications

| Item | Performance Characteristics |
|---|---|
| Category Temperature Range | −25 to +105°C |
| Rated Voltage Range | 160 to 450V |
| Rated Capacitance Range | 6.8 to 220μF |
| Capacitance Tolerance | ±20% at 120Hz, 20°C |
| Leakage Current | After 1 minute's application of rated voltage, leakage current is not more than 0.04CV+100 (μA) |
| Tangent of loss angle (tan δ) | Measurement frequency : 120Hz at 20°C |

| Rated voltage (V) | 160 | 200 | 250 | 350 | 400 | 450 |
|---|---|---|---|---|---|---|
| tan δ (MAX.) | 0.15 | 0.15 | 0.15 | 0.20 | 0.20 | 0.20 |

| Stability at Low Temperature | Measurement frequency : 120Hz | | | | | |
|---|---|---|---|---|---|---|
| Rated voltage (V) | | 160 | 200 | 250 | 350 | 400 | 450 |
| Impedance ratio ZT / Z20 (MAX.) | Z−25°C / Z+20°C | 3 | 3 | 3 | 6 | 6 | 6 |

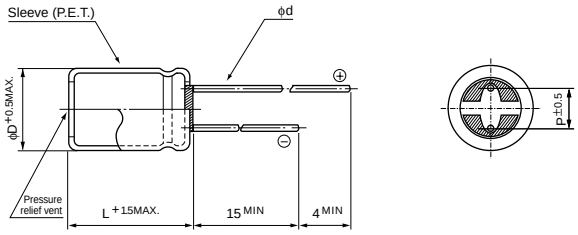
**Endurance**

The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 12000 hours (10000 hours for φD=10) at 105°C, the peak voltage shall not exceed the rated voltage.

| | |
|---|---|
| Capacitance change | Within ±20% of the initial capacitance value |
| tan δ | 200% or less than the initial specified value |
| Leakage current | Less than or equal to the initial specified value |

| Shelf Life | After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above. |
|---|---|
| Marking | Printed with white color letter on dark brown sleeve. |

## ■Radial Lead Type




(mm)

| φD | 10 | 12.5 | 16 | 18 |
|---|---|---|---|---|
| P | 5.0 | 5.0 | 7.5 | 7.5 |
| φd | 0.6 | 0.6 | 0.8 | 0.8 |

• Please refer to page 20 about the end seal configuration.

## Type numbering system (Example : 250V 100μF)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| U | C | A | 2 | E | 1 | 0 | 1 | M | H | D | |

- 12: Size code
- 10–11: Configuration ※
- 9: Capacitance tolerance (±20%)
- 6–8: Rated capacitance (100μF)
- 4–5: Rated voltage (250V)
- 3: Series name
- 1–2: Type

※ Configuration

| φ D | Pb-free leadwire<br>Pb-free PET sleeve |
|---|---|
| 10 | PD |
| 12.5 to 18 | HD |

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

● Dimension table in next page.

# CA series

## ■Dimensions

| Cap. (μF) \ V | Code | 160 | | 200 | | 250 | | 350 | | 400 | | 450 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2C | | 2D | | 2E | | 2V | | 2G | | 2W | |
| **6.8** | 6R8 | | | | | | | 10 × 16 | 220 | 10 × 16 | 220 | 10 × 20 | 150 |
| **10** | 100 | 10 × 16 | 250 | 10 × 16 | 250 | 10 × 20 | 300 | 10 × 20 | 280 | 10 × 20 | 280 | 12.5 × 20 | 320 |
| **22** | 220 | 10 × 20 | 500 | 10 × 20 | 500 | 12.5 × 20 | 600 | 12.5 × 20 | 350 | 12.5 × 20 | 430 | 16 × 25 | 560 |
| | | | | | | | | | | ▲16 × 20 | 600 | ▲18 × 20 | 560 |
| **33** | 330 | 10 × 20 | 565 | 12.5 × 20 | 600 | 12.5 × 20 | 630 | 16 × 20 | 600 | 16 × 25 | 640 | 16 × 31.5 | 700 |
| | | | | | | | | | | ▲18 × 20 | 640 | ▲18 × 25 | 700 |
| **47** | 470 | 12.5 × 20 | 725 | 12.5 × 20 | 780 | 12.5 × 25 | 720 | 16 × 25 | 700 | 16 × 31.5 | 840 | 18 × 31.5 | 900 |
| | | | | | | ▲16 × 20 | 750 | ▲18 × 20 | 750 | ▲18 × 25 | 840 | | |
| **68** | 680 | 12.5 × 25 | 950 | 12.5 × 25 | 950 | 16 × 25 | 1000 | 16 × 31.5 | 1100 | 18 × 31.5 | 1000 | | |
| | | ▲16 × 20 | 970 | ▲16 × 20 | 970 | ▲18 × 20 | 920 | ▲18 × 25 | 875 | | | | |
| **100** | 101 | 16 × 25 | 1280 | 16 × 25 | 1280 | 16 × 31.5 | 1400 | | | | | | |
| | | ▲18 × 20 | 1180 | ▲18 × 20 | 1180 | ▲18 × 25 | 1345 | | | | | | |
| **150** | 151 | 16 × 31.5 | 1360 | 16 × 31.5 | 1360 | 18 × 31.5 | 1500 | | | | | | |
| | | ▲18 × 25 | 1360 | ▲18 × 25 | 1360 | | | | | | | | |
| **220** | 221 | 16 × 31.5 | 1400 | 18 × 31.5 | 1700 | | | | | | | Case size φD × L (mm) | ※ |
| | | ▲18 × 25 | 1400 | | | | | | | | | | |

※: Rated ripple current (mArms) at 105°C 100kHz

▲: In this case, 6 will be put at 12th digit of type numbering system.

• Frequency coefficient of rated ripple current

| Frequency | 50Hz | 120Hz | 1kHz | 10kHz | 100kHz or more |
|---|---|---|---|---|---|
| Coefficient | 0.40 | 0.50 | 0.80 | 0.90 | 1.00 |