# CONDUCTIVE POLYMER ALUMINUM SOLID ELECTROLYTIC CAPACITORS

nichicon

**CX** Chip Type, High Voltage / Long Life series

For SMD | HR High Ripple Current | Z Low Impedance | F For High Frequency | L Long Life | Anti-Solvent Feature

- High reliability, High voltage (to 50V).
- Low ESR, High ripple current.
- Long life of 1500 to 3000 hours at 125°C.
- SMD type : Lead free reflow soldering condition at 260°C peak complete correspondence.
- Adapted to the RoHS directive (2002/95/EC).

CX

Higher Temperature

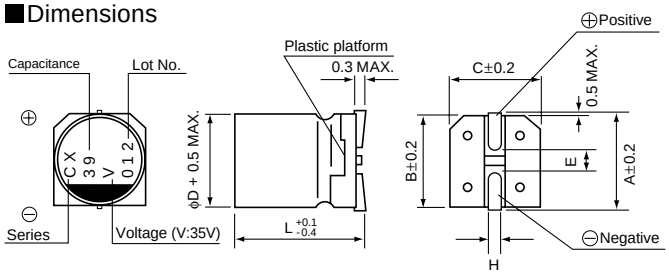
CV

## ■Specifications

| Item | Performance Characteristics |
|---|---|
| Category Temperature Range | –55 to +125°C |
| Rated Voltage Range | 16 to 50V |
| Rated Capacitance Range | 5.6 to 390µF |
| Capacitance Tolerance | ±20% at 120Hz, 20°C |
| Tangent of loss angle (tan δ) | Less than or equal to the specified value at 120Hz, 20°C |
| ESR ( ※ 1) | Less than or equal to the specified value at 100kHz, 20°C |
| Leakage Current ( ※ 2) | Less than or equal to the specified value . After 2 minutes' application of rated voltage at 20°C |
| Temperature Characteristics (Max.Impedance Ratio) | Z+125°C / Z+20°C ≦ 1.25 (100kHz)<br>Z–55°C / Z+20°C ≦ 1.25 |
| Endurance | The specifications listed at below shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 3000 hours (φD = 6.3:1500hours) at 125°C.<br>Capacitance change: Within ± 20% of initial capacitance value ( ※3)<br>tan δ: 150% or less of the initial specified value<br>ESR ( ※ 1): 150% or less of the initial specified value<br>Leakage current ( ※2): Less than or equal to the initial specified value |
| Damp Heat (Steady State) | The specifications listed at below shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 60°C, 90% RH.<br>Capacitance change: Within ± 20% of initial capacitance value ( ※3)<br>tan δ: 150% or less of the initial specified value<br>ESR ( ※ 1): 150% or less of the initial specified value<br>Leakage current ( ※2): Less than or equal to the initial specified value |
| Resistance to Soldering Heat | After soldering the capacitor under the soldering conditions prescribed here, the capacitor shall meet the specifications listed at right, provided that it's temperature profile is measured at the capacitor top and the terminal.<br>Pre-heating shall be done at 150 to 200°C and for 60 to 180 sec.<br>The duration for over +230°C temperature at capacitor surface shall not exceed 60 seconds.<br>In the case of peak temp, less than 250°C, reflow soldering shall be two times maximum.<br>In the case of peak temp, less than 260°C, reflow soldering shall be once.<br>Measurement for solder temperature profile shall be made at the capacitor top and the terminal.<br>Capacitance change: Within ± 10% of the initial capacitance value ( ※3)<br>tan δ: 130% or less than the initial specified value<br>ESR ( ※ 1): 130% or less than the initial specified value<br>Leakage current ( ※2): Less than or equal to the initial specified value |
| Marking | Navy blue print on the case top |

※ 1 ESR should be measured at both of the terminal ends closest where the terminals protrude through the plastic platform.
※ 2 Conditioning : If any doubt arises, measure the leakage current after the voltage treatment of applying DC rated voltage continuously to the capacitor for 120 minutes at 105°C.
※ 3 Initial value : The value before test of examination of resistance to soldering.

## ■Dimensions




(mm)

| Size | φ6.3×6L | φ8×7L | φ8×10L | φ8×12L | φ10×8L | φ10×10L | φ10×12.7L |
|---|---|---|---|---|---|---|---|
| φD | 6.3 | 8.0 | 8.0 | 8.0 | 10.0 | 10.0 | 10.0 |
| L | 5.9 | 6.9 | 9.9 | 11.9 | 7.9 | 9.9 | 12.6 |
| A | 7.3 | 9.0 | 9.0 | 9.0 | 11.0 | 11.0 | 11.0 |
| B | 6.6 | 8.3 | 8.3 | 8.3 | 10.3 | 10.3 | 10.3 |
| C | 6.6 | 8.3 | 8.3 | 8.3 | 10.3 | 10.3 | 10.3 |
| E | 2.1 | 3.2 | 3.2 | 3.2 | 4.6 | 4.6 | 4.6 |
| H | 0.5 to 0.8 | 0.8 to 1.1 | 0.8 to 1.1 | 0.8 to 1.1 | 0.8 to 1.1 | 0.8 to 1.1 | 0.8 to 1.1 |

Voltage

| V | 16 | 20 | 25 | 35 | 50 |
|---|---|---|---|---|---|
| Code | C | D | E | V | H |

## Type numbering system (Example : 35V 39µF)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | C | X | 1 | V | 3 | 9 | 0 | M | C | L | 1 | G | S |

- Taping code
- Size code
- Configuration
- Capacitance toleranc (±20%)
- Rated capacitance (39µF)
- Rated voltage (35V)
- Series name
- Type

● Dimension table in next page.

# CX series

## ■Standard Ratings

| Rated Voltage (V)(code) | Surge Voltage (V) | Rated Capacitance (μF) | Case Size φD × L (mm) | tan δ | Leakage Current (μA) | ESR (mΩ) (at 100kHz 20°C) | Rated Ripple (mArms) | | Part Number |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | ≦105℃ (*3) | 105℃< ≦125℃ (*3) | |
| 16 (1C) | 18.4 | 47 | 6.3×6 | 0.12 | 150 | 55 | 1000 | 390 | PCX1C470MCL1GS |
| | | 82 | 8×7 | 0.12 | 262 | 45 | 1300 | 530 | PCX1C820MCL1GS |
| | | 150 | ▲ 8×10 | 0.12 | 480 | 28 | 2000 | 780 | PCX1C151MCL6GS |
| | | 150 | 10×8 | 0.12 | 480 | 33 | 1900 | 830 | PCX1C151MCL1GS |
| | | 220 | 8×12 | 0.12 | 704 | 27 | 2300 | 870 | PCX1C221MCL1GS |
| | | 270 | 10×10 | 0.12 | 864 | 27 | 2300 | 830 | PCX1C271MCL1GS |
| | | 390 | 10×12.7 | 0.12 | 1248 | 26 | 2700 | 1040 | PCX1C391MCL1GS |
| 20 (1D) | 23.0 | 33 | 6.3×6 | 0.12 | 132 | 60 | 900 | 380 | PCX1D330MCL1GS |
| | | 56 | 8×7 | 0.12 | 224 | 50 | 1300 | 500 | PCX1D560MCL1GS |
| | | 120 | ▲ 8×10 | 0.12 | 480 | 29 | 1900 | 770 | PCX1D121MCL6GS |
| | | 120 | 10×8 | 0.12 | 480 | 35 | 1800 | 810 | PCX1D121MCL1GS |
| | | 150 | 8×12 | 0.12 | 600 | 28 | 2200 | 860 | PCX1D151MCL1GS |
| | | 180 | 10×10 | 0.12 | 720 | 28 | 2300 | 800 | PCX1D181MCL1GS |
| | | 270 | 10×12.7 | 0.12 | 1080 | 27 | 2700 | 1020 | PCX1D271MCL1GS |
| 25 (1E) | 28.7 | 22 | 6.3×6 | 0.12 | 110 | 65 | 900 | 360 | PCX1E220MCL1GS |
| | | 39 | 8×7 | 0.12 | 195 | 55 | 1200 | 480 | PCX1E390MCL1GS |
| | | 82 | ▲ 8×10 | 0.12 | 410 | 30 | 1900 | 760 | PCX1E820MCL6GS |
| | | 82 | 10×8 | 0.12 | 410 | 36 | 1800 | 800 | PCX1E820MCL1GS |
| | | 120 | ▲ 8×12 | 0.12 | 600 | 29 | 2200 | 850 | PCX1E121MCL6GS |
| | | 120 | 10×10 | 0.12 | 600 | 29 | 2200 | 790 | PCX1E121MCL1GS |
| | | 180 | 10×12.7 | 0.12 | 900 | 28 | 2600 | 1010 | PCX1E181MCL1GS |
| 35 (1V) | 40.2 | 10 | 6.3×6 | 0.12 | 70 | 85 | 800 | 310 | PCX1V100MCL1GS |
| | | 18 | 8×7 | 0.12 | 126 | 60 | 1100 | 450 | PCX1V180MCL1GS |
| | | 39 | ▲ 8×10 | 0.12 | 273 | 35 | 1800 | 700 | PCX1V390MCL6GS |
| | | 39 | 10×8 | 0.12 | 273 | 41 | 1700 | 750 | PCX1V390MCL1GS |
| | | 56 | 8×12 | 0.12 | 392 | 33 | 2000 | 780 | PCX1V560MCL1GS |
| | | 68 | 10×10 | 0.12 | 476 | 30 | 2200 | 740 | PCX1V680MCL1GS |
| | | 100 | 10×12.7 | 0.12 | 700 | 29 | 2600 | 990 | PCX1V101MCL1GS |
| 50 (1H) | 57.5 | 5.6 | 6.3×6 | 0.12 | 56 | 105 | 700 | 280 | PCX1H5R6MCL1GS |
| | | 10 | 8×7 | 0.12 | 100 | 75 | 1000 | 410 | PCX1H100MCL1GS |
| | | 22 | ▲ 8×10 | 0.12 | 220 | 37 | 1700 | 680 | PCX1H220MCL6GS |
| | | 22 | 10×8 | 0.12 | 220 | 56 | 1400 | 730 | PCX1H220MCL1GS |
| | | 27 | 8×12 | 0.12 | 270 | 35 | 2000 | 760 | PCX1H270MCL1GS |
| | | 33 | 10×10 | 0.12 | 330 | 31 | 2200 | 630 | PCX1H330MCL1GS |
| | | 47 | 10×12.7 | 0.12 | 470 | 30 | 2500 | 970 | PCX1H470MCL1GS |

(*3) Ambient temperature of a capacitor

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

No marked, 1 will be put at 12th digit of type numbering system.
▲: In this case, 6 will be put at 12th digit of type numbering system.

- Taping specifications are given in page 23.
- Recommended land size, soldering by reflow are given in page 18, 19.
- Please refer to page 3 for the minimum order quantity.

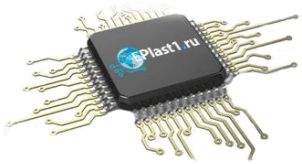
Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.




**Как с нами связаться**

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