

NICHICON Expands Ratings for PCW Series of Chip-Type Conductive Polymer Aluminum Solid Electrolytic Capacitors

NICHICON CORPORATION has expanded the rated capacitance of the PCW series of chip-type conductive polymer aluminum solid electrolytic capacitors with a guaranteed superimposed ripple current at high temperatures, to meet the increasing demand in the automotive and telecommunications fields. The PCW series is the industry's first conductive polymer aluminum solid electrolytic capacitor with a guaranteed superimposed ripple current. The expanded rated capacitance values will contribute to circuit board designs that require high-temperature compatibility.

NICHICON will exhibit this product at the Automotive Engineering Exposition 2024 to be held at PACIFICO Yokohama from May 22 to 24.

Overview and Development Background

Many low-voltage circuits using PMICs or CPUs/GPUs are being installed in automotive circuits, which have become increasingly more electrified. To meet increasing demand NICHICON launched in 2022 the PCW series. The PCW series is the industry's first chip-type conductive polymer aluminum solid electrolytic capacitors with a superimposed ripple current guaranteed at 125°C for 2,000 hours. This allows the PCW to satisfy the needs for high-temperature tolerance and high reliability.

NICHICON has now added $\phi 8 \times 7L$ and $\phi 8 \times 10L$ sizes to the existing product lineup, expanding the rated capacitance from 390 μ F to 1800 μ F. This expansion in sizes enables Nichicon to offer a wide range of products for various applications that require high capacitance and high ripple current while contributing to further performance enhancement and optimization of set devices.

Features

Conductive polymer aluminum solid electrolytic capacitors are products that use only conductive polymers as the electrolyte. They feature low ESR performance and high heat resistance as well as an extremely small decrease in capacitance over time due to the absence of an electrolytic solution.

The PCW series employs highly heat-resistant sealing rubber to maintain stability even at high temperatures while achieving low ESR and reduced self-heating by using a superior lead wire and other optimized materials.

Further, the series is the industry's first conductive type capacitors to guarantee superimposed ripple current and high ripple current, contributing to circuits that require high ripple current in low-voltage ranges.

NICHICON has now expanded the PCW series by adding the new sizes of $\phi 8 \times 7L$ and $\phi 8 \times 10L$ to the existing sizes of $\phi 5 \times 6L$ and $\phi 6.3 \times 6L$, expanding the rated capacitance from 390 μ F to 1800 μ F. The new high capacitance and high ripple currents will contribute to reducing the number of capacitors needed and reduce noise in circuit designs.

[Comparison of Capacitance and Rated Ripple Current (PCW series)]

Case size (mm)	Rated Voltage (V)	PCW Series				
		Capacitance (μ F)	$\tan\delta$	Leakage Current (μ A)	Initial ESR (m Ω)	Rated Ripple current (mArms)
ø5×6L	2.5	270	0.08	270	16	1800
	4	180	0.08	288	17	1720
	6.3	150	0.08	378	18	1580
ø6.3×6L	2.5	390	0.08	292	15	1890
	4	330	0.08	396	16	1800
	6.3	220	0.08	415	16	1800
ø8×7L	2.5	820	0.08	615	14	2100
	4	560	0.08	672	15	2150
	6.3	470	0.08	888	15	2200
ø8×10L	2.5	1800	0.08	1350	13	2200
	4	1200	0.08	1440	14	2300
	6.3	1000	0.08	1890	14	2500

※Capacitance : 120Hz at 20°C

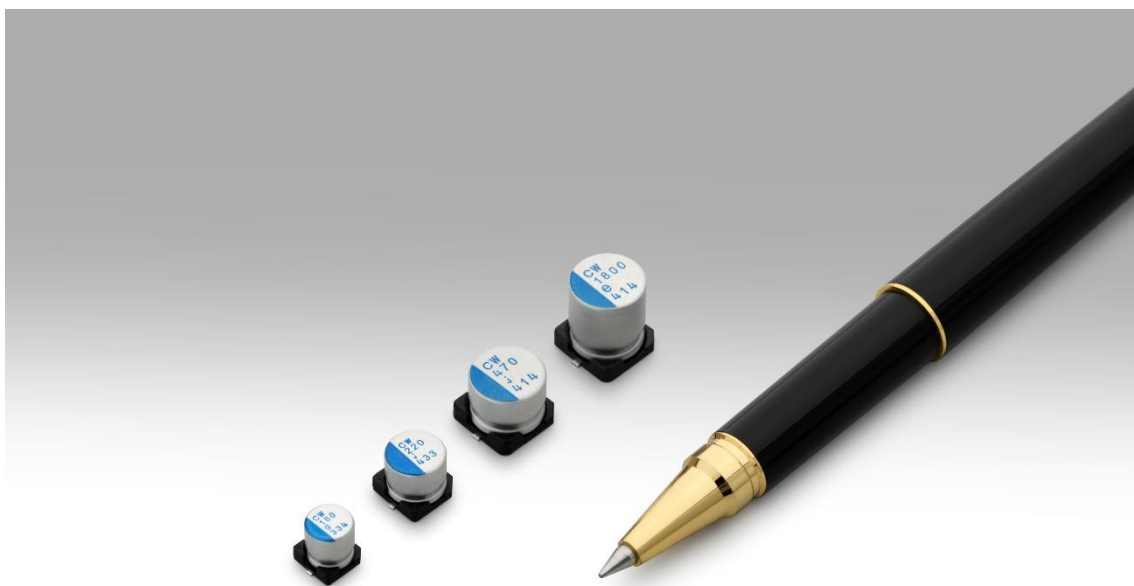
※Initial ESR : 100kHz at 20°C

※Rated ripple : 100kHz at 125°C

Main Specifications

- Series : PCW Series
- Rated voltage range : 2.5 to 6.3V
- Rated capacitance range : 150 to 1800 μ F
- Category temperature range : -55 to 125°C
- Product dimensions : ø5×6L to ø8×10L (ø5×6.3L to ø6.3×6L Sizes are in mass production)
- Life : 2,000 hours guaranteed at 125°C (Rated ripple current superimposed)
- Terminal shape : Chip type
- Mass production launch /
Production capacity : From May 2024 [Planned production volume: 1,000,000 / month]
- Production plant : NICHICON (OHNO) CORPORATION FUKUI FACTORY
4-24-15 Technology Center, Tsuchifugo, Ohno-shi, Fukui Pref.,
912-0805 Japan
(ISO 9001, IATF 16949, and ISO 14001 certified)

Product Appearance



PCW Series of Chip-Type Conductive Polymer Aluminum Solid Electrolytic Capacitors

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