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# NICHICON Develops the PCA Series of Chip-Type Conductive Polymer Aluminum Solid Electrolytic Capacitors, Which Offers Durability under an Industry-High Maximum Ripple Current at 125ºC

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NICHICON CORPORATION has developed the PCA Series of chip-type conductive polymer aluminum solid electrolytic capacitors for use in automotive and industrial equipment environments requiring the high reliability. The PCA Series has the same ESR and other characteristics as the current PCR Series at 125°C, and has improved the ripple current, achieving industry-leading ripple current capability at 125°C.

## Overview and Development Background

Previously, we have marketed our PCR Series of chip-type conductive polymer aluminum solid electrolytic capacitors in sectors demanding high reliability, such as automotive, industrial equipment, and telecommunications. In recent years, the demand for the high maximum ripple current durability has been growing along with the use of electronic components in automobiles. To satisfy this demand, we developed the PCA Series having a higher maximum ripple current than the PCR Series.

## Features

The PCA Series has improved the high heat resistance and high ripple current capabilities through optimized conductive polymer formation method, component compositions and material designs. As a result, the PCA Series has achieved higher ripple currents while maintaining the ESR and other characteristics of the PCR Series. Through these upgrades, our PCA Series withstands a higher maximum ripple current in the same size as the PCR Series while helping to downsize circuit boards through a reduced capacitor count.

Comparison with Current Products

| | PCA Series<br>(Developed product) | PCR Series<br>(Current product) |
|---|---|---|
| Life (guaranteed) | **4000 hours at 125℃ with rated ripple current applied** | 4000 hours at 125℃ with applied DC voltage |
| Rating | 25 V ― 330 μF | 25 V ― 330 μF |
| Case Size (mm) | φ10×10L | φ10×10L |
| ESR<br>(at 20℃/100 kHz) | 20 mΩ | 20 mΩ |
| Ripple Current<br>(at 125℃/100 kHz) | **4600 mArms** | 3100 mAms |

## Main Specifications

- Rated voltage range : 25 to 63 V
- Rated capacitance range : 47 to 470 μF
- Category temperature range : -55 to 125℃
- Product dimensions : φ8×10L to φ10×12.7L (mm) （4 sizes）
- Life : 4,000 hours guaranteed at 125℃
- Terminal shape : Chip type
- Sample : From October 2022
- Production plant : NICHICON (OHNO) CORPORATION,
  SITE II Factory
  4-24-15 Technology Center, Tsuchifugo, Ono,
  Fukui Prefecture
  (ISO 9001, IATF 16949, and ISO 14001 certified)

**PCA Series of Chip-Type Conductive Polymer Aluminum Solid Electrolytic Capacitors**

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