



# Press Release

Nippon Chemi-Con Corporation  
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## **Development of Snap-in Type Aluminum Electrolytic Capacitors LHJ Series Long life and high ripple current products for industrial inverters**

Nippon Chemi-Con has developed snap-in type aluminum electrolytic capacitors LHJ Series for industrial inverters that require long-term reliability and high ripple current capability. The LHJ Series is a long-life product of the KHJ Series, our high ripple current tolerant products (life extended to 5,000 hours at 105°C from 3,000 hours at 105°C). They are also high ripple current tolerant products of the conventional LXS Series which guarantees 5,000 hours at 105°C. We have achieved a maximum 60% higher ripple current capability compared to conventional products, and we propose this product as the industry's first high ripple current tolerant product that guarantees a life of 5,000 hours at 105°C.

The LHJ Series has achieved high reliability and high ripple tolerance by improving the anode foil and electrolyte. If the same ripple current is required, it is possible to offer a product that is smaller than conventional products or to propose a reduction in the number of capacitors.

The LHJ Series is available in a standard rated voltage range of 400 to 450 V, sizes  $\phi 30 \times 35$  L to  $\phi 35 \times 59$  L, and a capacitance of 220 to 810 $\mu$ F. By extending the lower limit of the category temperature range from the conventional -25°C to -40°C, these products can be used in equipment for cold regions.

Similar to the high ripple current tolerant products KHJ Series which guarantees 3,000 hours at 105°C, this product has achieved lower ESR by using aluminum electrode foil with low dielectric loss developed in-house. It has also achieved higher ripple current tolerance by adopting a special structure and a new electrolyte to improve reliability.

### [Samples and Mass Production]

Mass production of the LHJ Series is scheduled to begin in October 2019. They will be manufactured at Chemi-Con Fukushima Corp. (a wholly owned subsidiary of Nippon Chemi-Con). We will also begin production at Chemi-Con (Malaysia) Sdn. Bhd.

### [Main Specifications]

- Category temperature range: -40°C to +105°C
- Endurance: 5,000 hours at 105°C
- Rated voltage range: 400 to 450 V
- Capacitance range: 220 to 810 $\mu$ F
- Case size:  $\phi 30 \times 35$  to  $\phi 35 \times 59$  L mm
- Rated ripple current: maximum 60% increase compared to LXS Series

[Product Features]

Reduction in quantity (450 V 6.0 Arms)

	General-purpose long-life products LXS Series φ35x45L 450V 470μF Ir=1.99 Arms, 120 Hz	New high ripple current long-life products LHJ Series φ35x46L 450V 450μF Ir=3.09 Arms, 120 Hz
Required quantity	3	2
Mounting surface area of substrate [cm <sup>2</sup> ] *calculated as a square whose side lengths are D	21.0	14.0
Occupied volume [cm <sup>3</sup> ] *calculated as the volume of the capacitor	129.9	88.5
Total capacitance [μF]	1410	900
Total ripple current [Arms, 105°C, 120 Hz]	5.97	6.18

Downsizing (450 V 2.0 Arms)

	General-purpose long-life products LXS Series φ35x45L 450V 470μF Ir=1.99 Arms, 120 Hz	New high ripple current long-life products LHJ Series φ30x35L 450V 220μF Ir=1.98 Arms, 120 Hz
Mounting surface area of substrate [cm <sup>2</sup> ] *calculated as a square whose side lengths are D	12.3	9.0
Occupied volume [cm <sup>3</sup> ] *calculated as the volume of the capacitor	43.3	24.7

The number of capacitors can be reduced by replacing conventional products with the LHJ Series. This may reduce costs compared with products that use excessive capacitance to ensure ripple current capability. Furthermore, with the reduction of area and volume, the space for capacitors and the weight of cases will be reduced.

[Product Appearance]



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