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NICHICON Launches GYD Series of 150°C Conductive Polymer Hybrid Aluminum Electrolytic Capacitors

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To meet the increasing demand for extremely high-temperature resistant capacitors in the automotive and industrial machinery fields, NICHICON CORPORATION has launched the GYD series of conductive polymer hybrid aluminum electrolytic capacitors with a rated operating temperature of 150°C.

Overview and Development Background

NICHICON has previously released the GYA series (rated at 125°C for 4,000 hours) and the GYC series (rated at 135°C for 4,000 hours), and now offers a rated temperature range of up to 150°C with the release of the GYD series.

The GYD series offers high performance and long life in extremely high-temperature environments that our current lineup is unable to withstand.

Features

Conductive polymer hybrid aluminum electrolytic capacitors use both conductive polymers and electrolytic solutions for electrolytes. Combining the two types of electrolytes gives the GYD series characteristics of both conductive polymers (low ESR, high ripple current, high heat resistance) and electrolytic solutions (low leakage current thanks to oxide film restoration).

We have achieved a guaranteed temperature rating of 150°C in the GYD series by making improvements in the materials and manufacturing process of the conductive polymer, in addition to using a low-evaporation electrolyte that is compatible with conductive polymers. The series has the longest guaranteed life in the industry for capacitors sized $\phi 8 \times 10L$ and $\phi 10 \times 10L$ at 1,000 hours. The GYD series offers the highest ripple current for capacitors with a guaranteed rating of 150°C. The GYD series can contribute to miniaturization since it allows up to 15 times the ripple current compared to the UBC series (aluminum electrolytic capacitors).

Comparison with Current Products

	GYD series (Hybrid Aluminum Electrolytic Capacitors)	UBC series (Aluminum Electrolytic Capacitors)
Rating	35V, 150 μ F	35V, 100 μ F
Capacitance comparison	1.5x	Standard
Case size (mm)	ϕ 10 \times 10L	ϕ 10 \times 10L
Rated ripple current	1,800mArms (at 150°C/100kHz)	120mArms (at 150°C/100kHz)
Ripple current comparison	15x	Standard
Life (guaranteed)	1,000 hours at 150°C	1,000 hours at 150°C

Main Specifications

Rated voltage range	25 to 35 V DC
Rated capacitance range	100 to 270 μ F
Category temperature range	-55 to +150°C
Product dimensions	Φ 8 \times 10L to ϕ 10 \times 10L (mm)
Life	1,000 hours at 150°C
Terminal shape	Chip type *with vibration-resistant structure
Samples	Currently available
Mass production	From April 2020 [Planned production volume: 300,000/month]
Production plant	NICHICON (IWATE) CORPORATION, 8-17-1, Kubo, Iwate-cho Iwate-gun, Iwate Prefecture (ISO 9001, IATF 16949, and ISO 14001 certified)



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