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NICHICON Develops and Launches the GYF Series of High-Capacitance Conductive Polymer Hybrid Aluminum Electrolytic Capacitors

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NICHICON CORPORATION has developed and launched the GYF series of high capacitance conductive polymer hybrid aluminum electrolytic capacitors with high ripple current and low ESR performance, which are increasingly demanded in automotive and telecommunications applications.

NICHICON will exhibit the series at TECHNO-FRONTIER 2022's 37th Power System Japan Expo.

Overview and Development Background

Previously, NICHICON had launched the GYE series (guaranteed for 4,000 hours at 125°C). The GYF is one rank higher in capacity than the GYA series (guaranteed for 4,000 hours at 125°C) of conductive polymer hybrid aluminum electrolytic capacitors. The GYF series was developed for markets where high reliability is required, such as automotive, industrial machinery and telecommunications markets.

GYF series offers higher capacity in the same case size as the GYE series. The GYF series will contribute to advancements in circuit design by reducing the number of capacitors resulting in lighter and smaller units.

Features

Conductive polymer hybrid aluminum electrolytic capacitors use both conductive polymers and electrolytic solutions as electrolytes and thus retain both the low ESR performance and high heat resistance characteristic of conductive polymers and the oxide film repair performance of electrolytic solutions. The GYF series combines the features of both aluminum electrolytic capacitors and conductive polymer aluminum solid electrolytic capacitors.

In terms of capacitance, the GYF series outranks the GYA series by two levels thanks to its use of high-capacitance anode foil and thin separators.

The GYF series retains the heat resistance and long life (guaranteed for 4,000 hours at 125°C of the current GYA series in addition to moisture resistance (guaranteed 2,000 hours

at 85°C and 85 % RH). Its rated ripple current is 1.44 times that of the GYA series.

Main Specifications

Rated voltage range:	25 to 35V
Rated capacitance range:	68 to 560 μ F
Category temperature range:	-55 to +125°C
Product dimensions:	ϕ 6.3 \times 5.8L to ϕ 10 \times 10L (mm)
Life:	4000 hours guaranteed at 125°C
Terminal shape:	Chip type
Mass production:	From April 2022 [Planned production volume: 1 million / month]
Production plant:	NICHICON (IWATE) CORPORATION 8-17-1, Kubo, Iwate-cho Iwate-gun, Iwate Prefecture (ISO 9001, IATF 16949, and ISO 14001 certified)

Capacitance and Rated Ripple Current Comparison

Dimensions (mm)	Rated Voltage (V)	GYA Series (Existing series)		GYE Series (1 rank Higher Capacitance)		GYF Series (2 rank Higher Capacitance)	
		Capacitance (μ F)	Rated Ripple Current (mA _{rms})	Capacitance (μ F)	Rated Ripple Current (mA _{rms})	Capacitance (μ F)	Rated Ripple Current (mA _{rms})
ϕ 6.3 \times 5.8L	25	56	900	82	1100	100	1300
	35	47	900	56	1100	68	1200
ϕ 6.3 \times 7.7L	25	100	1400	150	1700	180	1800
	35	68	1400	100	1700	120	1700
ϕ 8 \times 10L	25	220	1600	270	2000	330	2000
	35	150	1600	180	2000	220	2000
ϕ 10 \times 10L	25	330	2000	470	2400	560	2800
	35	270	2000	330	2400	390	2800

*Capacitance: 120Hz at 20°C

*Rated ripple current: 100kHz at 125°C



GYF Series of High-Capacitance
Conductive Polymer Hybrid Aluminum Electrolytic Capacitors