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## **NICHICON Develops the GYE Series of High-Capacitance Conductive Polymer Hybrid Aluminum Electrolytic Capacitors**

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NICHICON CORPORATION developed the high-capacitance GYE series of conductive polymer hybrid aluminum electrolytic capacitors featuring superior performance at high temperatures, long life, high ripple current, and low equivalent series resistance (ESR), which have seen increasing demand from the automotive and industrial equipment fields.

The new series will be exhibited at CEATEC 2020 ONLINE from Tuesday, October 20, to Friday, October 23.

### **Overview and Development Background**

NICHICON has launched the GYA series (operation guaranteed for 4,000 hours at 125°C) and GYC series (4,000 hours at 135°C) of conductive polymer hybrid aluminum electrolytic capacitors for use in products primarily for the automotive and industrial equipment sectors where high reliability is required.

We developed the new GYE series with higher capacitance ratings than the GYA series. Offering greater capacitance with the same size capacitors, we expect the GYE series to contribute to miniaturization and weight-saving and the further optimization of circuit designs.

### **Features**

Conductive polymer hybrid aluminum electrolytic capacitors use both conductive polymers (low ESR, high heat resistance) and electrolytic solutions (oxide film restoration) for electrolytes. Combining the two types of electrolytes give characteristics of both aluminum electrolytic capacitors and conductive polymer aluminum solid electrolytic capacitors.

The GYE series achieves high capacitance through the use of a high-capacitance anode foil and optimization of the conductive polymer material and electrolyte. The series maintains the high reliability of the existing GYA series. It is guaranteed to perform at high temperatures (125°C) over a long life (4,000 hours) and is moisture resistant with a guaranteed 2,000 hours of operation at 85°C and 85% relative humidity. In addition, the rated ripple current is 1.2 times that of the original GYA series.

## Capacitance and Rated Ripple Current Comparison

Dimensions (mm)	Rated Voltage (V)	GYA Series (Existing series)		GYE Series (High Capacitance)	
		Capacitance ( $\mu$ F)	Rated Ripple Current (mArms)	Capacitance ( $\mu$ F)	Rated Ripple Current (mArms)
$\phi$ 6.3 $\times$ 5.8L	25	56	900	68	1,100
	35	47	900	56	1,100
$\phi$ 6.3 $\times$ 7.7L	25	100	1,400	150	1,700
	35	68	1,400	100	1,700
$\phi$ 8 $\times$ 10L	25	220	1,600	270	2,000
	35	150	1,600	180	2,000
$\phi$ 10 $\times$ 10L	25	330	2,000	470	2,400
	35	270	2,000	330	2,400

\*Capacitance: 120Hz at 20°C

\*Rated ripple current: 100kHz at 125°C

## Main Specifications

Rated voltage range:	25 to 35V DC
Rated capacitance range:	56 to 470 $\mu$ F
Category temperature range:	-55 to +125°C
Product dimensions:	$\phi$ 6.3 $\times$ 5.8L to $\phi$ 10 $\times$ 10L (mm) (four sizes)
Life:	4,000 hours guaranteed at 125°C
Terminal shape:	Chip type
Samples:	From January 2021
Mass production:	From April 2021 [Planned production volume: 500 thousand/month]
Production plant:	NICHICON (IWATE) CORPORATION 8-17-1, Kubo, Iwate-cho Iwate-gun, Iwate Prefecture (ISO 9001, IATF 16949, and ISO 14001 certified)



GYE series of high-capacitance conductive polymer hybrid aluminum electrolytic capacitors