
NICHICON Develops the GWC Series of Conductive Polymer Hybrid Aluminum Electrolytic Capacitors

NICHICON CORPORATION has developed the GWC series of conductive polymer hybrid aluminum electrolytic capacitors with high ripple current, low ESR, and high heat resistance, characteristics that are seeing increasing demand in the automotive and communications fields.

We will exhibit the series at Electronica China 2025, held at the Shanghai New International Expo Center from April 15 to 17.

Overview and Development Background

NICHICON CORPORATION previously launched the GYA series of conductive polymer hybrid aluminum electrolytic capacitors (rated for 4,000 hours at 125°C), and followed it with the GXC series, which offered higher heat resistance and higher ripple current (rated for 4,000 hours at either 125°C or 135°C). We have proposed these products for markets that demand high reliability, such as the automotive, industrial equipment, and communications markets.

The newly developed GWC series allows even higher ripple current than the GXC series. This enables a reduction in the number of capacitors used, contributing to lighter and more compact units and supporting further advancements in circuit design performance.

Features

Conductive polymer hybrid aluminum electrolytic capacitors use both a conductive polymer and liquid electrolyte. This combination delivers low ESR and high heat resistance characteristic of conductive polymers while also maintaining the oxide film self-healing capability provided by the electrolyte. In this way, these capacitors combine the advantages of aluminum electrolytic capacitors and conductive polymer aluminum solid electrolytic capacitors.

The GWC series uses high-conductivity leads to achieve up to approximately 1.1 times higher ripple current compared to the GXC series, while maintaining the same guaranteed lifespan (4,000 hours at 125°C or 135°C).

This makes it well-suited for circuits requiring high ripple current and contributes to further performance enhancement and size reduction in circuits where minimizing the number of capacitors is essential.

【Rated Ripple Current Comparison】

Dimensions (mm)	Rated Voltage (V)	Capacitance (μ F)	Rated Ripple Current (mA _{rms})			
			GXC Series (Existing Product)		GWC Series (New Product)	
			125°C	135°C	125°C	135°C
8×10	25	220	4,000	2,800	4,300	3,000
	35	150	4,000	2,800	4,300	3,000
	50	68	3,600	2,500	4,000	2,700
	63	47	3,300	2,300	3,700	2,300
10×10	25	330	4,500	3,300	5,000	3,500
	35	270	4,500	3,300	5,000	3,500
	50	120	4,300	3,000	4,700	3,000
	63	82	4,000	2,800	4,400	2,800
10×12.5	25	470	5,200	3,600	5,300	3,700
	35	330	5,000	3,500	5,300	3,600
	50	150	4,600	3,300	5,000	3,300
	63	100	4,600	3,300	5,000	3,300
10×16.5	25	560	-	-	6,100	4,300
	35	470	-	-	5,800	4,100
	50	220	-	-	5,500	3,800
	63	150	-	-	5,500	3,800

*Capacitance: 120Hz at 20°C

*Rated ripple current: 100kHz

Main Specifications

- Series : GWC Series
- Rated voltage range : 25V to 63V
- Rated capacitance range : 47 μ F to 560 μ F
- Category temperature range : -55°C to 135°C
- Product dimensions : \varnothing 8mm×10mmL to \varnothing 10mm×16.5mmL
- Life : 4,000 hours guaranteed at 135°C or
4,000 hours guaranteed at 125°C
(Rated ripple current superimposed)
- Terminal shape : Chip type
- Samples : From April 2025
- Mass production launch : From July 2025
- 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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