

October 13, 2021

NICHICON Expands Ratings for GYA, GYB, and GYC Series of Conductive Polymer Hybrid Aluminum Electrolytic Capacitors

NICHICON CORPORATION

Karasumadori Oike-agaru, Nakagyo-ku, Kyoto

Phone: 81-75-231-8461

Inquiries: Katsuhiko Mori, Operating Officer and
General Manager, Capacitor Business Headquarters

The GYA, GYB and GYC have seen increasing demand from the automotive, consumer goods, and industrial equipment fields.

To meet the increasing demand NICHICON CORPORATION has expanded the GYA, GYB, and GYC series to include capacitors sized $\phi 10 \times 12.5L$ and rated from 25 to 63V. The GYA, GYB, and GYC series of conductive polymer hybrid aluminum electrolytic capacitors feature long life, high ripple current, low equivalent series resistance (ESR), and high reliability.

The new products will be exhibited at CEATEC 2021 ONLINE from Tuesday, October 19, to Friday, October 22.

Overview and Development Background

NICHICON has launched the GYA series (operation guaranteed for 4,000 hours at 125°C), the GYB series (10,000 hours at 105°C), the GYC series (4,000 hours at 135°C) of conductive polymer hybrid aluminum electrolytic capacitors for use in products for the automotive, industrial equipment, telecommunications, and consumer goods sectors where high reliability is required.

NICHICON has now added capacitors sized $\phi 10 \times 12.5L$ to these series to meet the increasing demand for higher capacitance and ripple current. NICHICON has also expanded the ratings of the existing sizes to include capacitors rated from 25 to 63V. This will allow these series to be used in a wider range of applications. The additions to the series will contribute to further enhanced performance and optimization of circuit designs.

Features

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

Using capacitors sized $\phi 10 \times 12.5L$ allows for 1.35 times (in the case of the GYA series) greater ripple current than those sized $\phi 10 \times 10L$, while maintaining the same guaranteed life.

Main Specifications

- Specifications for capacitors sized $\phi 10 \times 12.5L$, which enable high ripple current at each voltage rating

Series	GYA Series			
Rating	25V 470 μ F	35V 330 μ F	50V 150 μ F	63V 100 μ F
ESR (at 20°C, 100kHz)	16m Ω	16m Ω	18m Ω	20m Ω
Rated ripple current (at 125°C, 100kHz)	2300mA _{rms}	2300mA _{rms}	2000mA _{rms}	1900mA _{rms}
Life	4000 hours at 125°C			

Series	GYB Series			
Rating	25V 470 μ F	35V 330 μ F	50V 150 μ F	63V 100 μ F
ESR (at 20°C, 100kHz)	16m Ω	16m Ω	18m Ω	20m Ω
Rated ripple current (at 105°C, 100kHz)	3500mA _{rms}	3500mA _{rms}	3200mA _{rms}	3000mA _{rms}
Life	10000 hours at 105°C			

Series	GYC Series			
Rating	25V 470 μ F	35V 330 μ F	50V 150 μ F	63V 100 μ F
ESR (at 20°C, 100kHz)	16m Ω	16m Ω	18m Ω	20m Ω
Rated ripple current (at 135°C, 100kHz)	2300mA _{rms}	2300mA _{rms}	2000mA _{rms}	1900mA _{rms}
Rated ripple current (at 125°C, 100kHz)	3500mA _{rms}	3500mA _{rms}	3200mA _{rms}	3000mA _{rms}
Life	4000 hours at 135°C or 4000 hours at 125°C			

Product dimensions and ratings are as follows

【GYA Series】

		V		16	25	35	50	63	80				
Cap.(μ F)	Code			1C	1E	1V	1H	1J	1K				
		10	100							6.3 × 5.8	700		
22	220						6.3 × 5.8	750	6.3 × 7.7	900	8 × 10	1100	
33	330					6.3 × 5.8	900	6.3 × 7.7	1100	8 × 10	1100	10 × 10	1300
47	470			6.3 × 5.8	900	6.3 × 5.8	900	8 × 10	1250	8 × 10	1100	10 × 10	1300
56	560			6.3 × 5.8	900					10 × 10	1400		
68	680			6.3 × 7.7	1400	6.3 × 7.7	1400	8 × 10	1250	10 × 10	1400		
82	820	6.3 × 5.8	1000							10 × 10	1400		
100	101			6.3 × 7.7	1400	8 × 10	1600	10 × 10	1600	10 × 12.5	1900		
120	121							10 × 10	1600				
150	151	6.3 × 7.7	1500	8 × 10	1600	8 × 10	1600	10 × 12.5	2000				
220	221			8 × 10	1600	10 × 10	2000						
270	271	8 × 10	1700	10 × 10	2000	10 × 10	2000						
330	331			10 × 10	2000	10 × 12.5	2300						
470	471	10 × 10	2100	10 × 12.5	2300							Case size (ϕ D × Lmm)	Ripple

Rated ripple current (mArms) at 125°C 100kHz

【GYB Series】

		V		16	25	35	50	63	80				
Cap.(μ F)	Code			1C	1E	1V	1H	1J	1K				
		10	100							6.3 × 5.8	1000		
22	220						6.3 × 5.8	1100	6.3 × 7.7	1500			
33	330					6.3 × 5.8	1300	6.3 × 7.7	1600	8 × 10	1600		
47	470			6.3 × 5.8	1300	6.3 × 5.8	1300	8 × 10	1800	8 × 10	1600		
56	560			6.3 × 5.8	1300					10 × 10	1800		
68	680			6.3 × 7.7	2000	6.3 × 7.7	2000	8 × 10	1800	10 × 10	1800		
82	820									10 × 10	1800		
100	101			6.3 × 7.7	2000	8 × 10	2300	10 × 10	2000	10 × 12.5	3000		
120	121							10 × 10	2000				
150	151			8 × 10	2300	8 × 10	2300	10 × 12.5	3200				
220	221			8 × 10	2300	10 × 10	2500						
270	271			10 × 10	2500	10 × 10	2500						
330	331			10 × 10	2500	10 × 12.5	3500						
470	471			10 × 12.5	3500							Case size (ϕ D × Lmm)	Ripple

Rated ripple current (mArms) at 105°C 100kHz

【GYC Series】

Cap.(μ F)	V	25			35			50			63			
		Code			1E			1V			1H			1J
10	100											6.3 × 5.8	1000	700
22	220							6.3 × 5.8	1100	750	6.3 × 7.7	1300	900	
33	330				6.3 × 5.8	1400	900	6.3 × 7.7	1600	1100	8 × 10	1900	1100	
47	470	6.3 × 5.8	1400	900	6.3 × 5.8	1400	900	8 × 10	2200	1250	8 × 10	1900	1100	
56	560	6.3 × 5.8	1400	900							10 × 10	2300	1400	
68	680	6.3 × 7.7	1900	1400	6.3 × 7.7	1900	1400	8 × 10	2200	1250	10 × 10	2300	1400	
82	820										10 × 10	2300	1400	
100	101	6.3 × 7.7	1900	1400	8 × 10	2900	1600	10 × 10	2600	1600	10 × 12.5	3000	1900	
120	121							10 × 10	2600	1600				
150	151	8 × 10	2900	1600	8 × 10	2900	1600	10 × 12.5	3200	2000				
220	221	8 × 10	2900	1600	10 × 10	3300	2000							
270	271	10 × 10	3300	2000	10 × 10	3300	2000							
330	331	10 × 10	3300	2000	10 × 12.5	3500	2300							
470	471	10 × 12.5	3500	2300							Case size (ϕ D × Lmm)	Ripple (125°C)	Ripple (135°C)	

Rated ripple current (mArms) at 125°C or 135°C 100kHz

Samples: From January 2021
 Mass production: From April 2022
 [Planned production volume: 1000 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)



GYA, GYB, and GYC Series of Conductive Polymer Hybrid Aluminum Electrolytic Capacitors