

# ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

## GQ

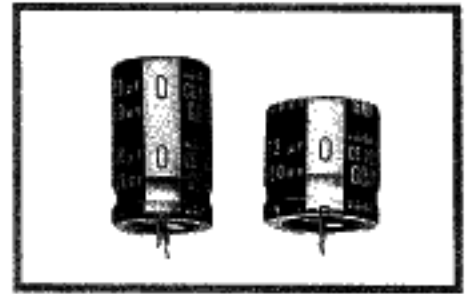
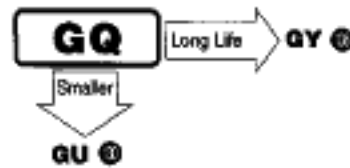
Snap-in Terminal Type, Wide Temperature Range  
Series



ROJ Approved  
Absolvent Feature  
(Through 180V and)

Approved by Reliability Center for Electronic Component, Japan-Certification No. RCJ-03-24C

- Standard snap-in terminal series.
- Extended capacitance ranges based on the numerical values in E12 series under JIS.

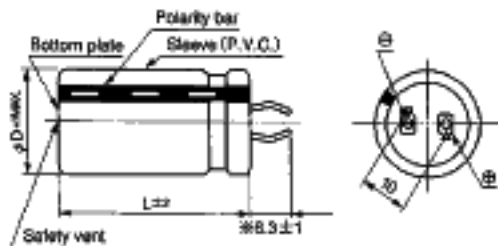


### Specifications

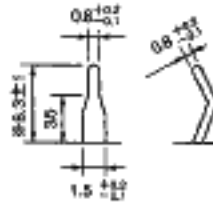
Item	Performance Characteristics		
Operating Temperature Range	-40~+105°C (16~250V), -25~+105°C (315~450V)		
Voltage Range	16~450V		
Capacitance Range	56~47000 μF		
Capacitance Tolerance	±20% at 120Hz, 20°C		
Leakage Current	I ≤ 3√CV (μA) (After 5 minutes' application of rated voltage) (C : Capacitance (μF), V : Voltage (V))		
tan δ	Measurement frequency : 120Hz, Temperature : 20°C		
	Rated voltage (V)	16 25 35 50 63 80 100 160 180 200 250 315 400 450	
	tan δ (MAX.)		
Stability at Low Temperature	Measurement frequency : 120Hz		
	Rated voltage (V)	16~100 160~250 315~450	
	Impedance ratio Z(-25°C)/Z(+20°C)	4 3 8	
	Z(-40°C)/Z(+20°C)	15 12 -	
Load Life	After an application of DC voltage (in the range of rated DC voltage even after overlapping the specified ripple current) for 2000 hours at 105°C, capacitors shall meet the characteristics requirements indicated at right.	Capacitance change	Within ±20% of initial value
		tan δ	200% or less of initial specified value
		Leakage current	Initial specified value or less
Shelf Life	After leaving capacitors under no load at 105°C for 1000 hours they meet the requirements listed at right.	Capacitance change	Within ±15% of initial value
		tan δ	150% or less of initial specified value
		Leakage current	Initial specified value or less
Marking	Printed with white color letter on dark brown sleeve		
Applicable Standards	JIS C-5141 and JIS C-5102.		

### Drawing

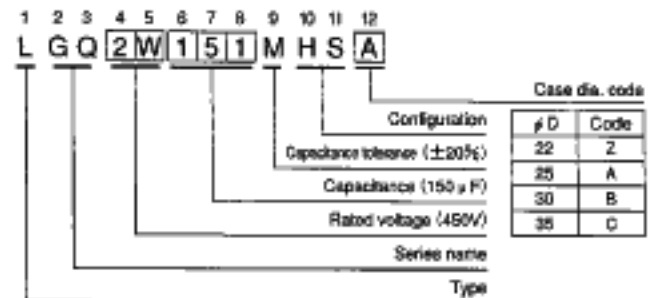
Type numbering system (Example : 450V 150 μF)



(PC board hole dimensions)



(Terminal dimensions)



\* Shorter terminal (4.0±0.5) is also available upon request.  
Please refer page 130 (GU series) for schematic of dimensions.

### Frequency coefficient of allowable ripple current

Freq. (Hz)	Cap.				
	16 ~ 100V	160 ~ 250V	315 ~ 450V	1 k	10k~
50	0.88	0.90	1.00	1.15	1.15
60	0.85	0.88	1.00	1.15	1.20
120	0.88	0.90	1.00	1.10	1.15

• Dimension table in next page.

GQ series

## ■ Dimensions

DXL (mm)

Cap. (μF)	V (Code)	Case	φD	16 (1C)				25 (1E)				35 (1V)				50 (1H)				
				22	25	30	35	22	25	30	35	22	25	30	35	22	25	30	35	
1800	182																22×25			
																	1.31			
2700	272																22×30	25×25		
																	1.70	1.70		
3300	332												22×25				22×35	25×30		
													1.43				1.98	2.00		
3900	392												22×30				22×40	25×35	30×25	
													1.65				2.25	2.28	2.22	
4700	472												22×25				22×45	25×40	30×30	
													1.55				2.56	2.61	2.58	
5600	562												22×30				22×50	25×40	30×35	
													1.76				2.89	2.81	2.95	
6800	682												22×30	25×25			25×50	30×40	35×30	
													1.80				3.37	3.39	3.31	
													1.91	1.91						
8200	822												22×30	25×30	30×25				30×45	35×35
													1.85						3.71	3.66
													2.14	2.16	2.25					
10000	103												22×30	25×25			25×45	30×35	30×50	35×40
													1.99	1.99			2.92	2.92	4.09	4.07
													2.40	2.44						
12000	123												22×35	25×30	30×25		25×50	30×40	35×30	35×45
													2.28	2.30	2.38		3.28	3.28	3.20	4.50
													2.69	2.74	2.70					
15000	153												22×40	25×35			30×45	35×35		
													2.64	2.68			3.74	3.69		
													3.15	3.13	3.22					
18000	183												22×45	25×40	30×30		35×40			
													2.98	3.04	3.00		4.16			
													3.54	3.54						
22000	223												25×45	30×35			35×50			
													3.40	3.39			4.92			
													4.24	3.96						
27000	273												25×50	30×40	35×30					
													3.81	3.83	3.74					
													4.75							
33000	333												30×45	35×35			35×50			
													4.30	4.24			5.39			
													5.39							
39000	393												30×50	35×40						
													4.74	4.72						
47000	473												35×45							
													5.27							

Cap. (μF)	V (Code)	Case	φD	63 (1J)				80 (1K)				100 (2A)								
				22	25	30	35	22	25	30	35	22	25	30	35					
560	561												22×25							
													1.07							
820	821												22×30	25×25						
													1.11				1.35	1.35		
1000	102												22×30	25×25			22×35	25×30		
													1.29	1.29			1.54	1.56		
1200	122												22×25				22×40	25×35	30×25	
													1.25				1.74	1.76	1.71	
1500	152												22×30	25×25			22×45	25×40	30×30	
													1.44	1.44			1.99	2.03	2.00	
1800	182												22×30	25×25			25×45	30×35		
													1.52	1.52			2.28	2.27		
2200	222												22×35	25×30			25×50	30×40	35×30	
													1.73	1.75			2.57	2.59	2.52	
													2.09	2.01	2.10					
2700	272												22×40	25×35	30×25				30×45	35×35
													1.97	1.99	1.93				2.94	2.90
													2.43	2.43						
3300	332												22×50	25×40	30×30			30×50	35×40	
													2.32	2.27	2.24			3.32	3.31	
													2.78	2.78	2.71					
3900	392												25×45	30×35			30×45	35×35	35×45	
													2.54	2.55			3.12	3.07	3.89	
4700	472												25×50	30×40	35×30		30×50	35×40	35×50	
													2.68	2.90	2.83		3.62	3.50	4.14	
5600	562												30×45	35×35			35×45			
													3.28	3.24			3.87			
6800	682												30×50	35×40			35×50			
													3.73	3.71			4.19			
8200	822												35×45							
													4.18							
10000	103												35×50							
													4.69							

Allowable Ripple (A rms) at 105°C 120Hz

### Dimensions

DXL (mm)

Cap. (μF)	V (Code)	φD	160 (2C)				180 (2Z)				200 (2D)				250 (2E)			
			22	25	30	35	22	25	30	35	22	25	30	35	22	25	30	35
150	151													22×25				
														0.65				
180	181													22×25				
														0.75				
220	221													22×30	25×25			
														0.85	0.85			
270	271	22×25				22×25				22×25				22×35	25×30	30×25		
		0.90				0.90				0.90				1.00	1.00	1.00		
330	331	22×25				22×30				22×30	25×25			22×40	25×30	30×25		
		1.00				1.05				1.05	1.05			1.10	1.10	1.10		
390	391	22×30				22×30	25×25			22×35	25×30			22×45	25×40	30×30		
		1.15				1.20	1.20			1.25	1.25			1.25	1.25	1.25		
470	471	22×35	25×25			22×35	25×30			22×40	25×30	30×25		22×50	25×40	30×35	35×25	
		1.30	1.30			1.30	1.30			1.35	1.35	1.35		1.30	1.30	1.30	1.30	
560	561	22×40	25×30			22×40	25×35	30×25		22×45	25×35	30×30			25×50	30×35	35×30	
		1.45	1.45			1.40	1.40	1.40		1.50	1.50	1.50			1.55	1.55	1.55	
680	681	22×45	25×35	30×25		22×45	25×40	30×30		22×50	25×45	30×30	35×25			30×45	35×35	
		1.65	1.65	1.65		1.65	1.65	1.65		1.70	1.70	1.70	1.70			1.80	1.80	
820	821	22×50	25×40	30×30	35×25	22×50	25×45	30×35	35×25		25×50	30×35	35×30					35×40
		1.80	1.80	1.80	1.80	1.85	1.85	1.85	1.85		1.90	1.90	1.90					1.85
1000	102		25×45	30×35	35×30		25×50	30×40	35×30			30×45	35×35					35×45
			2.00	2.00	2.00		2.05	2.05	2.05			2.15	2.15					2.30
1200	122		25×50	30×40	35×30			30×45	35×35			30×50	35×35					35×50
			2.30	2.30	2.30			2.30	2.30			2.30	2.30					2.65
1600	152			30×45	35×35			30×50	35×40				35×45					
				2.65	2.65			2.70	2.70				2.75					
1800	182			30×50	35×45				35×45				35×50					
				3.05	3.05				3.15				3.25					
2200	222				35×50				35×50									
					3.50				3.60									

Cap. (μF)	V (Code)	φD	315 (2F)				400 (2G)				450 (2W)						
			22	25	30	35	22	25	30	35	22	25	30	35			
56	560										22×25						
											0.41						
68	680					22×25				22×30	25×25						
						0.40				0.48	0.48						
82	820	22×25				22×30	25×25			22×35							
		0.46				0.50	0.50			0.56							
100	101	22×30				22×35	25×30			22×40	25×30	30×25					
		0.55				0.55	0.55			0.64	0.61	0.63					
120	121	22×30	25×25			22×40	25×30	30×25		22×45	25×35						
		0.60	0.60			0.60	0.60	0.60		0.72	0.71						
150	151	22×35	25×30	30×25		22×45	25×35	30×30		22×50	25×40	30×30	35×25				
		0.70	0.70	0.70		0.70	0.70	0.70		0.83	0.81	0.80	0.82				
180	181	22×40	25×30	30×25		22×50	25×40	30×30	35×25		25×45	30×35					
		0.83	0.78	0.82		0.85	0.85	0.85	0.85		0.92	0.91					
220	221	22×45	25×35	30×30			25×45	30×35	35×30		25×50	30×40	35×30				
		0.90	0.90	0.90			0.90	0.90	0.90		1.05	1.05	1.03				
270	271	22×50	25×40	30×35	35×25		25×50	30×40	35×30			30×45	35×35				
		1.00	1.00	1.00	1.00		1.00	1.00	1.00			1.21	1.19				
330	331		25×50	30×35	35×30			30×45	35×35			30×50	35×40				
			1.25	1.25	1.25			1.25	1.25			1.38	1.38				
390	391			30×40	35×35			30×50	35×40								35×45
				1.35	1.35			1.35	1.35								1.55
470	471			30×50	35×40				35×45								35×50
				1.45	1.45				1.45								1.74
560	561				35×45				35×50								
					1.65				1.65								
680	681				35×50												
					1.80												

Allowable ripple (A ms) at 105°C 120Hz