ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

LQ series — Snap-in Terminal Type, Standard

RCJ Approved

Anti-Solvent Feature (Through 100V only)

Approved by Reliability Center for Electronic Component, Japan-Certification No. RCJ-03-25D

- Rated capacitances available based on the numerical values in E-12 series.(Size : φ22 ~ φ35)

LQ → Smaller → LU

■Specifications

Item	Performance Characteristics
Operating Temperature Range	−40 ~ +85°C(16 ~ 250V), −25 ~ +85°C(400 ~ 450V)
Voltage Range	16 ~ 450V
Capacitance Range	56 ~ 56000μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	$I \leqq 3\sqrt{CV}$ (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	400	450
tan δ (MAX.)	0.50	0.40	0.35	0.30	0.25	0.20	0.20	0.15	0.15	0.15	0.15	0.20	0.20

Stability at Low Temperature — Measurement frequency : 120Hz

Rated voltage(V)		16 ~ 100	160 ~ 250	400 ~ 450
Impedance ratio ZT/Z20(MAX.)	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 over-lapping the specified ripple current) for 2000 hours at 85°C, capacitors shall meet the characteristics requirements indicated at right.

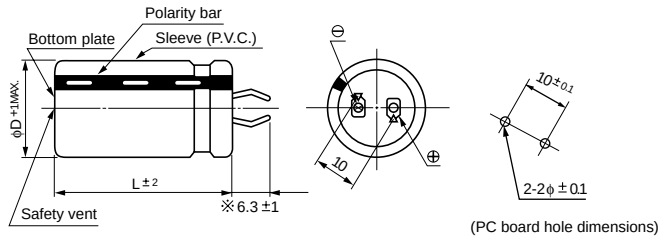
Capacitance change	Within ±20% of initial value
tan δ	200% or less of initial specified value
Leakage current	Initial specified value or less

Shelf Life — After leaving capacitors under no load at 85°C for 1000 hours, they meet the requirements listed at right.

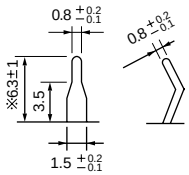
Capacitance change	Within ±15% of initial value
tan δ	150% or less of initial specified value
Leakage current	Initial specified value or less

Marking	Printed with white color letter on black sleeve.
Applicable Standards	JIS C 5141 and JIS C 5102.

■Drawing

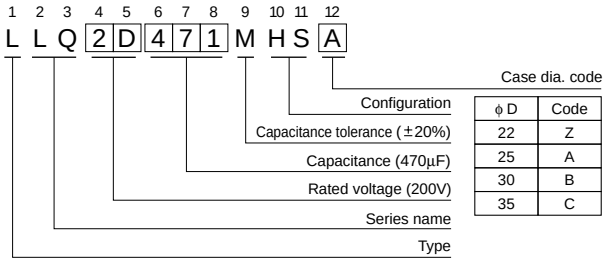


(PC board hole dimensions)



(Terminal dimensions)

Type numbering system(Example : 200V 470μF)



φD	Code
22	Z
25	A
30	B
35	C

※Shorter terminal (4.0 ± 0.5) is also available upon request.
Please refer to page 127 (LU series) for schematic of dimensions.

■ Frequency coefficient of allowable ripple current

Frequency(Hz)		50	60	120	1 k	10k ~
Coeff.	16 ~ 100V	0.88	0.90	1.00	1.15	1.15
	160 ~ 250V	0.85	0.88	1.00	1.15	1.20
	400 ~ 450V	0.88	0.90	1.00	1.10	1.15

Minimum order quantity : 50pcs.

■ Dimension table in next pages.

LQ series

Dimensions

DXL(mm)

Cap.(μF) \ V(Code) / Code / 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
3300 332													22X30	25X25		
													2.35	2.35		
3900 392									22X25				22X35	25X30		
									2.16				2.66	2.68		
4700 472									22X30	25X25			22X40	25X35	30X25	35X25
									2.42	2.42			3.02	3.07	2.98	3.30
5600 562					22X25				22X35				22X45	25X40	30X30	
					2.11				2.66				3.40	3.47	3.42	
6800 682					22X30	25X25			22X40	25X30	30X25		22X50	25X40	30X35	
					2.47	2.47			2.97	2.82	2.93		3.84	3.74	3.93	
8200 822	22X25				22X35				22X45	25X35				25X50	30X40	35X30
	2.55				2.86				3.29	3.17				4.44	4.47	4.36
10000 103	22X30				22X40	25X30	30X25		22X50	25X40	30X30				30X45	35X35
	2.89				3.31	3.15	3.27		3.75	3.65	3.60				5.08	5.01
12000 123	22X30	25X25			22X45	25X35	30X30			25X45	30X35	35X30			30X50	35X40
	3.01	3.01			3.77	3.63	3.80			4.15	4.14	4.27			5.72	5.69
15000 153	22X35	25X30	30X25		22X50	25X40					30X40	35X35				35X45
	3.45	3.48	3.61		4.21	4.10					4.77	4.95				6.56
18000 183	22X40	25X35				25X45	30X35	35X30			30X45	35X40				35X50
	3.84	3.91				4.53	4.52	4.66			5.30	5.52				7.14
22000 223	22X50	25X40	30X30				30X45	35X35				35X45				
	4.52	4.40	4.34				5.33	5.26				6.20				
27000 273		25X45	30X35				30X50	35X40				35X50				
		4.96	4.95				5.96	5.93				6.89				
33000 333			30X40	35X30				35X45								
			5.60	5.46				6.65								
39000 393			30X45	35X35				35X50								
			6.21	6.12				7.31								
47000 473			30X50	35X40												
			6.93	6.89												
56000 563				35X45												
				7.69												

Cap.(μF) \ V(Code) / Code / φD	63(1J)				80(1K)				100(2A)			
	22	25	30	35	22	25	30	35	22	25	30	35
1200 122					22X25				22X30	25X25		
					1.66				2.11	2.11		
1500 152					22X30				22X35	25X30	30X25	
					1.96				2.45	2.47	2.56	
1800 182	22X25				22X30	25X25			22X40	25X35		
	1.82				2.11	2.11			2.77	2.81		
2200 222	22X30	25X25			22X35	25X30	30X25		22X45	25X40	30X30	
	2.14	2.14			2.44	2.46	2.56		3.15	3.21	3.17	
2700 272	22X35	25X30			22X40	25X35				25X45	30X35	35X30
	2.49	2.52			2.82	2.86				3.66	3.65	3.77
3300 332	22X35	25X30	30X25		22X45	25X40	30X30			25X50	30X40	
	2.72	2.74	2.84		3.23	3.29	3.25			4.15	4.18	
3900 392	22X40	25X35			22X50	25X45	30X35				30X45	35X35
	3.09	3.13			3.62	3.71	3.70				4.67	4.61
4700 472	22X50	25X40	30X30	35X25		25X50	30X40	35X30			30X50	35X40
	3.69	3.59	3.54	3.25		4.20	4.23	4.12			5.26	5.23
5600 562		25X45	30X35				30X45	35X35				35X45
		4.01	4.00				4.70	4.64				5.88
6800 682		25X50	30X40	35X30			30X50	35X40				
		4.52	4.55	4.44			5.27	5.24				
8200 822			30X45	35X35				35X45				
			5.12	5.05				5.89				
10000 103			30X50	35X40				35X50				
			5.78	5.75				6.63				
12000 123				35X45							Case size	
				6.47							Allowable ripple	

Allowable Ripple (A rms) at 85°C 120Hz

LQ series

■Dimensions

DXL (mm)

Cap.(μF) \ V(Code) / 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
220 221													22X25			
													1.15			
270 271									22X25				22X30	25X25		
									1.25				1.25	1.25		
330 331					22X25				22X30				22X35	25X30		
					1.35				1.40				1.45	1.45		
390 391	22X25				22X30				22X30	25X25			22X40	25X30	30X25	
	1.55				1.55				1.60	1.60			1.70	1.70	1.70	
470 471	22X30	25X25			22X35	25X25			22X35	25X30			22X45	25X35	30X30	
	1.75	1.75			1.75	1.75			1.80	1.80			1.90	1.90	1.90	
560 561	22X35	25X30			22X40	25X30			22X40	25X35	30X25		22X50	25X40	30X30	35X25
	1.90	1.90			2.00	2.00			2.00	2.00	2.00		2.15	2.15	2.15	2.15
680 681	22X40	25X30	30X25		22X45	25X35	30X25		22X45	25X40	30X30			25X45	30X35	35X30
	2.15	2.15	2.15		2.25	2.25	2.25		2.30	2.25	2.30			2.35	2.35	2.35
820 821	22X45	25X35	30X30		22X50	25X40	30X30	35X25	22X50	25X45	30X35	35X30			30X40	35X35
	2.45	2.45	2.45		2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50			2.75	2.75
1000 102	22X50	25X40	30X30	35X25		25X45	30X35	35X30			30X40	35X30			30X45	35X40
	2.80	2.80	2.80	2.80		2.85	2.85	2.85			2.95	2.95			3.00	3.00
1200 122		25X45	30X35	35X30		25X50	30X40	35X30			30X45	35X35				35X45
		3.25	3.25	3.25		3.30	3.30	3.30			3.40	3.40				3.50
1500 152			30X40	35X35			30X45	35X35			30X50	35X40				35X50
			3.75	3.75			3.75	3.75			3.80	3.80				4.00
1800 182			30X50	35X40				35X45				35X45				
			4.00	4.00				4.05				4.15				
2200 222				35X45				35X50				35X50				
				4.50				4.60				4.70				
2700 272				35X50												
				5.15												

Cap.(μF) \ V(Code) / Code / φD	400(2G)				450(2W)			
	22	25	30	35	22	25	30	35
56 560					22X25			
					0.59			
68 680					22X30			
					0.63			
82 820	22X25				22X30	25X25		
	0.72				0.78	0.78		
100 101	22X30				22X35	25X30		
	0.77				0.92	0.92		
120 121	22X30	25X25			22X40	25X35	30X25	
	0.94	0.94			1.06	1.08	1.05	
150 151	22X35	25X30			22X50	25X40	30X30	
	1.13	0.92			1.28	1.25	1.23	
180 181	22X40	25X35	30X25			25X45	30X40	
	1.27	1.06	1.26			1.41	1.48	
220 221	22X45	25X40	30X30	35X25		25X50	30X40	35X30
	1.45	1.22	1.46	1.50		1.59	1.60	1.57
270 271		25X45	30X35	35X30			30X45	35X35
		1.69	1.68	1.46			1.83	1.80
330 331		25X50	30X40	35X30			30X50	35X40
		1.92	1.93	1.88			2.08	2.06
390 391			30X45	35X35				35X45
			2.16	2.13				2.31
470 471			30X50	35X40				35X50
			2.43	2.42				2.47
560 561				35X45				
				2.72				
680 681				35X50			Case size	
				3.08			Allowable ripple	

Allowable Ripple (A rms) at 85°C 120Hz