

## LQ

Snap-in Terminal Type, Standard series



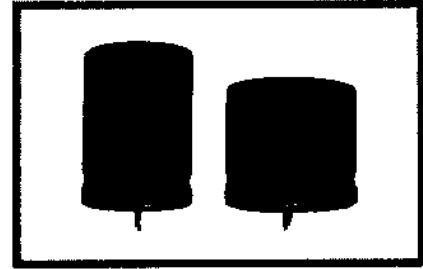
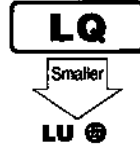
RoHS Approved



Anti-Solvent Features (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 :  $\phi 22 \sim \phi 35$ )

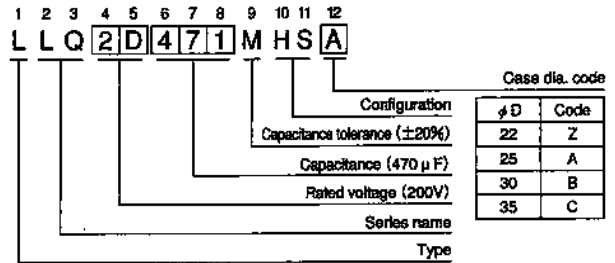
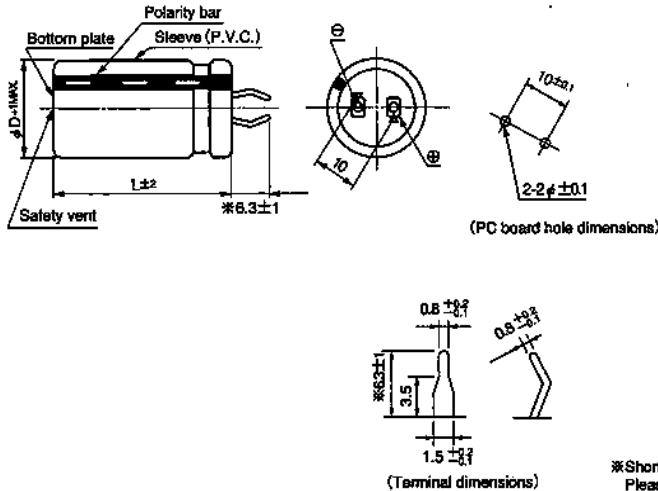


### Specifications

Item	Performance Characteristics																											
Operating Temperature Range	-40~+85°C (16~250V), -25~+85°C (400~450V)																											
Voltage Range	16~450V																											
Capacitance Range	56~56000 $\mu$ F																											
Capacitance Tolerance	$\pm 20\%$ at 120Hz, 20°C																											
Leakage Current	$I \leq 3/\sqrt{CV}$ ( $\mu$ A) (After 5 minutes' application of rated voltage) [C: Capacitance ( $\mu$ F), V: Voltage (V)]																											
tan $\delta$	Measurement frequency : 120Hz, Temperature : 20°C																											
	<table border="1"> <tr> <th>Rated voltage (V)</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>80</th> <th>100</th> <th>160</th> <th>180</th> <th>200</th> <th>250</th> <th>400</th> <th>450</th> </tr> <tr> <td>tan <math>\delta</math> (MAX.)</td> <td>0.50</td> <td>0.40</td> <td>0.35</td> <td>0.30</td> <td>0.25</td> <td>0.20</td> <td>0.20</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.20</td> <td>0.20</td> </tr> </table>	Rated voltage (V)	16	25	35	50	63	80	100	160	180	200	250	400	450	tan $\delta$ (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
Rated voltage (V)	16	25	35	50	63	80	100	160	180	200	250	400	450															
tan $\delta$ (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																											
	<table border="1"> <tr> <th colspan="2">Rated voltage (V)</th> <th>16~100</th> <th>160~250</th> <th>400~450</th> </tr> <tr> <td>Impedance ratio</td> <td>Z-25°C/Z+20°C</td> <td>4</td> <td>3</td> <td>8</td> </tr> <tr> <td>ZT/Z20 (MAX.)</td> <td>Z-40°C/Z+20°C</td> <td>15</td> <td>12</td> <td>—</td> </tr> </table>	Rated voltage (V)		16~100	160~250	400~450	Impedance ratio	Z-25°C/Z+20°C	4	3	8	ZT/Z20 (MAX.)	Z-40°C/Z+20°C	15	12	—												
Rated voltage (V)		16~100	160~250	400~450																								
Impedance ratio	Z-25°C/Z+20°C	4	3	8																								
ZT/Z20 (MAX.)	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.																											
	<table border="1"> <tr> <td>Capacitance change</td> <td>Within <math>\pm 20\%</math> of initial value</td> </tr> <tr> <td>tan <math>\delta</math></td> <td>200% or less of initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Initial specified value or less</td> </tr> </table>	Capacitance change	Within $\pm 20\%$ of initial value	tan $\delta$	200% or less of initial specified value	Leakage current	Initial specified value or less																					
Capacitance change	Within $\pm 20\%$ of initial value																											
tan $\delta$	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.																											
	<table border="1"> <tr> <td>Capacitance change</td> <td>Within <math>\pm 15\%</math> of initial value</td> </tr> <tr> <td>tan <math>\delta</math></td> <td>150% or less of initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Initial specified value or less</td> </tr> </table>	Capacitance change	Within $\pm 15\%$ of initial value	tan $\delta$	150% or less of initial specified value	Leakage current	Initial specified value or less																					
Capacitance change	Within $\pm 15\%$ of initial value																											
tan $\delta$	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

Type numbering system (Example : 200V 470  $\mu$ F)



\*Shorter terminal (4.0 $\pm$ 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~
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

# ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

**LQ** series

## ■ Dimensions

		DXL (mm)														
		16 (1G)			25 (1E)				35 (1V)				50 (1H)			
Cap. (μF)	V (Code) Code #D	22	25	35	22	25	30	35	22	25	30	35	22	25	30	35
3300	332												22×30	25×25		
													2.35	2.35		
3900	392								22×25				22×35	25×30		
									2.16				2.66	2.68		
4700	472								22×30	25×25			22×40	25×35	30×25	35×25
									2.42	2.42			3.02	3.07	2.98	3.30
5600	562				22×25				22×35				22×45	25×40	30×30	
					2.11				2.66				3.40	3.47	3.42	
6800	682				22×30	25×25			22×40	25×30	30×25		22×50	25×40	30×35	
					2.47	2.47			2.97	2.82	2.93		3.84	3.74	3.93	
8200	822	22×25			22×35				22×45	25×35				25×50	30×40	35×30
		2.55			2.86				3.29	3.17				4.44	4.47	4.36
10000	103	22×30			22×40	25×30	30×25		22×50	25×40	30×30				30×45	35×35
		2.89			3.31	3.15	3.27		3.75	3.65	3.60				5.08	5.01
12000	123	22×30	25×25		22×45	25×35	30×30			25×45	30×35	35×30			30×50	35×40
		3.01	3.01		3.77	3.63	3.80			4.15	4.14	4.27			5.72	5.69
15000	153	22×35	25×30	30×25	22×50	25×40							30×40	35×35		35×45
		3.45	3.48	3.61	4.21	4.10							4.77	4.95		6.56
18000	183	22×40	25×35			25×45	30×35	35×30					30×45	35×40		35×50
		3.84	3.91			4.53	4.52	4.66					5.30	5.52		7.14
22000	223	22×50	25×40	30×30			30×45	35×35							35×45	
		4.52	4.40	4.34			5.33	5.26							6.20	
27000	273		25×45	30×35			30×50	35×40					35×50			
			4.96	4.95			5.96	5.93					6.89			
33000	333			30×40	35×30			35×45								
				5.60	5.46			6.65								
39000	393			30×45	35×35			35×50								
				6.21	6.12			7.31								
47000	473			30×50	35×40											
				6.93	6.89											
56000	563				35×45											
					7.69											

		63 (1J)				80 (1K)				100 (2A)			
Cap. (μF)	V (Code) Code #D	22	25	30	35	22	25	30	35	22	25	30	35
1200	122					22×25				22×30	25×25		
						1.66				2.11	2.11		
1500	152					22×30				22×35	25×30	30×25	
						1.96				2.45	2.47	2.56	
1800	182	22×25				22×30	25×25			22×40	25×35		
		1.82				2.11	2.11			2.77	2.81		
2200	222	22×30	25×25			22×35	25×30	30×25		22×45	25×40	30×30	
		2.14	2.14			2.44	2.46	2.56		3.15	3.21	3.17	
2700	272	22×35	25×30			22×40	25×35				25×45	30×35	35×30
		2.49	2.52			2.82	2.86				3.66	3.65	3.77
3300	332	22×35	25×30	30×25		22×45	25×40	30×30			25×50	30×40	
		2.72	2.74	2.84		3.23	3.29	3.25			4.15	4.18	
3900	392	22×40	25×35			22×50	25×45	30×35				30×45	35×35
		3.09	3.13			3.62	3.71	3.70				4.67	4.61
4700	472	22×50	25×40	30×30	35×25		25×50	30×40	35×30			30×50	35×40
		3.69	3.59	3.54	3.25		4.20	4.23	4.12			5.26	5.23
5600	562		25×45	30×35				30×45	35×35				35×45
			4.01	4.00				4.70	4.64				5.88
6800	682		25×50	30×40	35×30			30×50	35×40				
			4.52	4.55	4.44			5.27	5.24				
8200	822			30×45	35×35				35×45				
				5.12	5.05				5.89				
10000	103			30×50	35×40				35×50				
				5.78	5.75				6.63				
12000	123				35×45								
					6.47								

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

Case size  
Allowable ripple

# ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

**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
220	221													22×25				
														1.15				
270	271									22×25				22×30	25×25			
										1.25				1.25	1.25			
330	331							22×25		22×30				22×35	25×30			
								1.35		1.40				1.45	1.45			
390	391		22×25					22×30		22×30	25×25			22×40	25×30	30×25		
			1.55					1.55		1.60	1.60			1.70	1.70	1.70		
470	471		22×30	25×25				22×35	25×25					22×45	25×35	30×30		
			1.75	1.75				1.75	1.75					1.90	1.90	1.90		
560	561		22×35	25×30				22×40	25×30					22×50	25×40	30×30	35×25	
			1.90	1.90				2.00	2.00					2.15	2.15	2.15	2.15	
680	681		22×40	25×30	30×25			22×45	25×35	30×25				22×45	25×40	30×30		
			2.15	2.15	2.15			2.25	2.25	2.25				2.30	2.25	2.30		
820	821		22×45	25×35	30×30			22×50	25×40	30×30	35×25			22×50	25×45	30×35	35×30	
			2.45	2.45	2.45			2.50	2.50	2.50	2.50			2.50	2.50	2.50	2.50	
1000	102		22×50	25×40	30×30	35×25		25×45	30×35	35×30				30×40	35×30			
			2.80	2.80	2.80	2.80		2.85	2.85	2.85				2.95	2.95			
1200	122			25×45	30×35	35×30		25×50	30×40	35×30				30×45	35×35			35×45
				3.25	3.25	3.25		3.30	3.30	3.30				3.40	3.40			3.50
1500	152				30×40	35×35			30×45	35×35				30×50	35×40			35×50
					3.75	3.75			3.75	3.75				3.80	3.80			4.00
1800	182				30×50	35×40				35×45				35×45				
					4.00	4.00				4.05				4.15				
2200	222					35×45				35×50				35×50				
						4.50				4.60				4.70				
2700	272					35×50												
						5.15												

Cap. (μF)	V (Code)	Code	φD	400 (2G)				450 (2W)										
				22	25	30	35	22	25	30	35							
56	560							22×25										
								0.59										
68	680							22×30										
								0.63										
82	820		22×25					22×30	25×25									
			0.72					0.78	0.78									
100	101		22×30					22×35	25×30									
			0.77					0.92	0.92									
120	121		22×30	25×25				22×40	25×35	30×25								
			0.94	0.94				1.06	1.08	1.05								
150	151		22×35	25×30				22×50	25×40	30×30								
			1.13	0.92				1.28	1.25	1.23								
180	181		22×40	25×35	30×25			25×45	30×40									
			1.27	1.06	1.26			1.41	1.48									
220	221		22×45	25×40	30×30	35×25		25×50	30×40	35×30								
			1.45	1.22	1.46	1.50		1.59	1.60	1.57								
270	271			25×45	30×35	35×30			30×45	35×35								
				1.69	1.68	1.46			1.83	1.80								
330	331			25×50	30×40	35×30			30×50	35×40								
				1.92	1.93	1.88			2.06	2.06								
390	391				30×45	35×35												35×45
					2.16	2.13												2.31
470	471				30×50	35×40												35×50
					2.43	2.42												2.47
560	561					35×45												
						2.72												
680	681					35×50												
						3.08												

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