

# Aluminum Electrolytic Capacitors



## LZ Series

### LOW IMPEDANCE

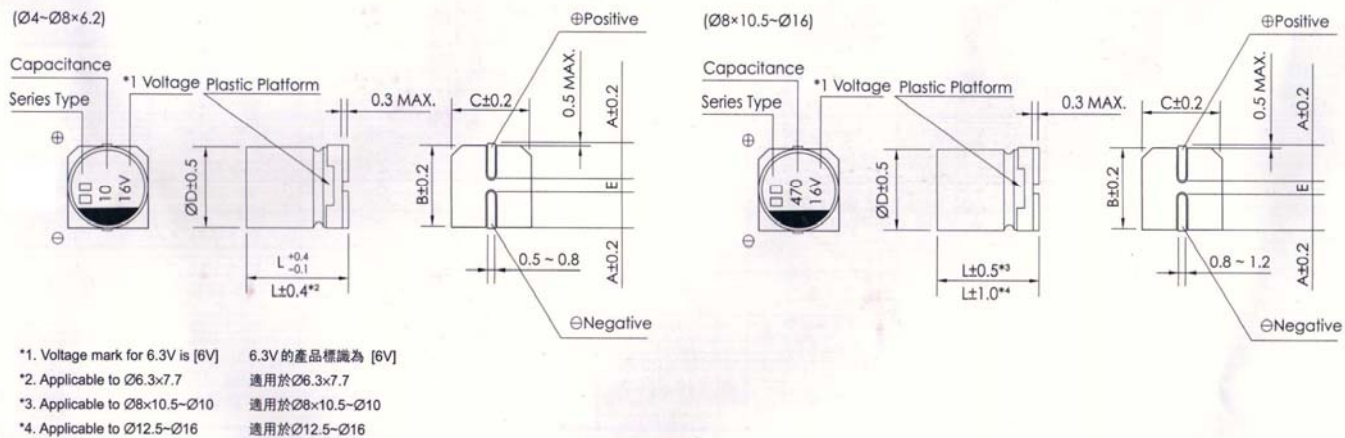
- Low impedance with temperature -55~+105°C
- Load life of 1000~2000 hours
- Comply with the RoHS directive



### SPECIFICATIONS

Item	Characteristics								
Operating Temperature Range	-55 ~ +105°C								
Voltage Range	6.3 ~ 50 V								
Capacitance Range	1 ~ 4700 $\mu$ F								
Capacitance Tolerance	- 20% ~ + 20% at 20°C, 120Hz								
Leakage Current	Leakage current( $\Phi$ 4~ $\Phi$ 10) $\leq$ 0.01CV or 3 $\mu$ A, whichever is greater (after 2 minutes application of rated voltage) Leakage current( $\Phi$ 12.5~ $\Phi$ 16) $\leq$ 0.03CV or 4 $\mu$ A, whichever is greater (after 1 minute application of rated voltage)								
Dissipation Factor(tan $\delta$ )	Measurement frequency:120Hz , Temperature:20°C								
	Rated Voltage (V)		6.3	10	16	25	35	50	
	tan $\delta$ (max.)	$\Phi$ 4~ $\Phi$ 10	0.22	0.19	0.16	0.14	0.12	0.12	
$\Phi$ 12.5~ $\Phi$ 16		0.26	0.22	0.18	0.16	0.14	0.12		
Stability at Low Temperature	Measurement frequency:120Hz								
	Rated Voltage (V)		6.3	10	16	25	35	50	
	Impedance Ratio ZT/Z20(max.)	$\Phi$ 4~ $\Phi$ 10	Z(-25°C) / Z(+20°C)	2	2	2	2	2	2
			Z(-55°C) / Z(+20°C)	5	4	4	3	3	3
		$\Phi$ 12.5~ $\Phi$ 16	Z(-25°C) / Z(+20°C)	3	3	2	2	2	2
Z(-55°C) / Z(+20°C)			10	8	6	4	3	3	
Load Life	After 2000 hrs.(1000 hrs.for $\Phi$ 4~ $\Phi$ 6.3 $\times$ 5.4) application of the rated voltage at 105°C, they meet the characteristics listed below.								
	Capacitance Change	Within $\pm$ 20% of initial value							
	Dissipation Factor	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 specified value for load life characteristics listed ab								
Resistance to Soldering Heat	After reflow soldering and restored at room temperature, they meet the characteristics listed below.								
	Capacitance Change	Within $\pm$ 10% of initial value							
	Dissipation Factor	initial specified value or less							
	Leakage Current	initial specified value or less							
Marking	Black print on the case top.								

### DRAWING (Unit: mm) 外形圖



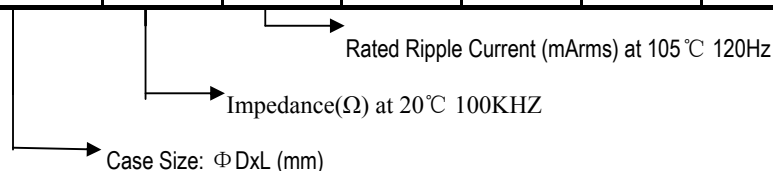
## LZ Series

### ●DIMENSIONS(Unit:mm)

(ΦDxL)	4x5.4	5x5.4	6.3x5.4	6.3x7.7	8x6.2	8x10.5	10x10.5	10x13.5	12.5x13.5	12.5x16	16x16.5
A	1.8	2.1	2.4	2.4	3.3	2.9	3.2	3.2	4.7	4.7	5.5
B	4.3	5.3	6.6	6.6	8.3	8.3	10.3	10.3	13.0	13.0	17.0
C	4.3	5.3	6.6	6.6	8.3	8.3	10.3	10.3	13.0	13.0	17.0
E±0.2	1.0	1.3	2.2	2.2	3.1	3.1	4.4	4.4	4.4	4.4	6.7
L	5.4	5.4	5.4	7.7	6.2	10.5	10.5	13.5	13.5	16.0	16.5

### ■DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT &IMPEDANCE

WV(Vdc) μF		6.3			10			16		
		10	100						4x5.4	3.0
15	150						5x5.4 (4x5.4)	1.8 (3.0)	95 (60)	
22	220	4x5.4	3.0	60	5x5.4 (4x5.4)	1.8 (3.0)	95 (60)	5x5.4 (4x5.4)	1.8 (3.0)	95 (60)
33	330	5x5.4 (4x5.4)	1.8 (3.0)	95 (60)	5x5.4 (4x5.4)	1.8 (3.0)	95 (60)	6.3x5.4 (5x5.4)	1.0 (1.8)	140 (95)
47	470	5x5.4 (4x5.4)	1.8 (3.0)	95 (60)	6.3x5.4 (5x5.4)	1.0 (1.8)	140 (90)	6.3x5.4 (5x5.4)	1.0 (1.8)	140 (95)
68	680	6.3x5.4 (5x5.4)	1.0 (1.8)	140 (95)	6.3x5.4	1.0	140	6.3x7.7 (6.3x5.4)	0.6 (1.0)	230 (140)
100	101	6.3x5.4 (5x5.4)	1.0 (1.8)	140 (95)	6.3x7.7 (6.3x5.4)	0.6 (1.0)	230 (140)	6.3x7.7 (6.3x5.4)	0.6 (1.0)	230 (140)
150	151	6.3x7.7 (6.3x5.4)	0.6 (1.0)	230 (140)	6.3x7.7 (6.3x5.4)	0.6 (1.0)	230 (140)	6.3x7.7	0.6	230
220	221	6.3x7.7 (6.3x5.4)	0.6 (1.0)	230 (140)	6.3x7.7	0.6	230	8x10.5 (6.3x7.7)	0.30 (0.6)	450 (230)
330	331	6.3x7.7	0.6	230	8x10.5	0.30	450	10x10.5 (8x10.5)	0.15 (0.30)	670 (450)
470	471	8x10.5	0.30	450	8x10.5	0.30	450	10x10.5 (8x10.5)	0.15 (0.30)	670 (450)
680	681	8x10.5	0.30	450	10x10.5	0.15	670	10x10.5	0.15	670
1000	102	10x10.5 (8x10.5)	0.15 (0.30)	670 (450)	10x10.5	0.15	670	10x10.5	0.15	670
1500	152	10x10.5 (10x10.5)	0.13 (0.15)	750 (670)	12.5x13.5 (10x13.5)	0.11 (0.13)	820 (750)	12.5x13.5	0.11	820
2200	222	12.5x13.5 (10x13.5)	0.11 (0.13)	820 (750)	12.5x16	0.09	950	16x16.5 (12.5x16)	0.08 (0.09)	1260 (950)
3300	332	12.5x16 (12.5x13.5)	0.09 (0.11)	950 (820)	16x16.5	0.08	1260	16x16.5	0.08	1260
4700	472	16x16.5	0.08	1260	16x16.5	0.08	1260			



## LZ Series

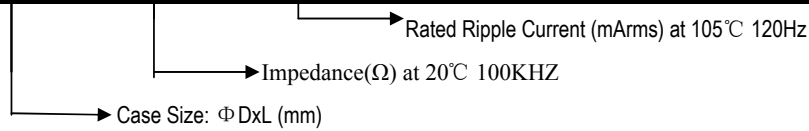
$\frac{WV(Vdc)}{\mu F}$		25			35			50		
		Case Size	Impedance(Ω)	Rated Ripple Current (mArms)	Case Size	Impedance(Ω)	Rated Ripple Current (mArms)	Case Size	Impedance(Ω)	Rated Ripple Current (mArms)
1	0 10				4x5.4	3.0	60	4x5.4	5.0	30
1.5	1R5				4x5.4	3.0	60	4x5.4	5.0	30
2.2	2R2				4x5.4	3.0	60	4x5.4	5.0	30
3.3	3R3				4x5.4	3.0	60	4x5.4	3.0	30
4.7	4R7	4x5.4	3.0	60	4x5.4	3.0	60	5x5.4	2.0	50
6.8	6R8	4x5.4	3.0	60	5x5.4	1.8	95	6.3x5.4	2.0	70
10	100	5x5.4 (4x5.4)	1.8 (3.0)	95 (60)	5x5.4 (4x5.4)	1.8 (3.0)	95 (60)	6.3x5.4	2.0	70
15	150	6.3x5.4	1.8	95	5x5.4	1.8	95	6.3x5.4	1.0 (2.0)	70
22	220	6.3x5.4 (5x5.4)	1.0 (1.8)	140 (95)	6.3x5.4 (5x5.4)	1.0 (1.8)	140 (90)	6.3x7.7 (6.3x5.4)	1.0	120 (70)
33	330	6.3x5.4 (5x5.4)	1.0 (1.8)	140 (95)	6.3x5.4	1.0	140	6.3x7.7	1.0	120
47	470	6.3x7.7 (6.3x5.4)	0.6 (1.0)	230 (140)	6.3x7.7 (6.3x5.4)	0.6 (1.0)	230 (140)	6.3x7.7	1.0	120
68	680	6.3x7.7	0.6	230	6.3x7.7	0.60	230	8x10.5	0.60	300
100	101	6.3x7.7	0.6	230	8x10.5	0.30	450	8x10.5	0.60	300
150	151	8x10.5 (6.3x7.7)	0.30 (0.6)	450 (230)	8x10.5	0.30	450	10x10.5	0.30	500

→ Rated Ripple Current (mArms) at 105 °C 120Hz  
 → Impedance(Ω) at 20°C 100KHZ  
 → Case Size: ΦDxL (mm)

# LZ Series

## ■ DIMENSIONS MAXIMUM PERMISSIBLE RIPPLE CURRENT

VV(Vdc) μF		6.3			10			16		
		Case Size	Impedance(Ω)	Rated Ripple Current (mA)	Case Size	Impedance(Ω)	Rated Ripple Current (mA)	Case Size	Impedance(Ω)	Rated Ripple Current (mA)
220	221	8×10.5	0.30	450	10×10.5 (8×10.5)	0.15 (0.30)	670 (450)	10×10.5	0.30	500
330	331	10×10.5 (8×10.5)	0.15 (0.30)	670 (450)	10×10.5	0.15	670	16×16.5 (12.5×13.5) (10×13.5)	0.12 (0.20) (0.25)	1060 (650) (580)
470	471	10×10.5	0.15	670	10×10.5	0.15	670	16×16.5 (12.5×16)	0.12 (0.15)	1060 (700)
680	681	10×13.5	0.13	750	12.5×13.5 (10×13.5)	0.11 (0.13)	820 (750)	16×16.5	0.12	1060
1000	102	16×16.5 (12.5×13.5)	0.08 (0.11)	1260 (820)	16×16.5 (12.5×16)	0.08 (0.09)	1260 (950)			
1500	152	12.5×16	0.09	950	16×16.5	0.08	1260			
2200	222	16×16.5	0.08	1260						



## □ FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT

Frequency		50HZ	120HZ	300HZ	1KHZ	10KHZ-	
Coefficient	Φ4-Φ10	1~68μF	0.35	0.50	0.64	0.83	1.00
		100~2200μF	0.40	0.55	0.70	0.85	1.00
	12.5-Φ16	~680μF	0.45	0.65	0.80	0.90	1.00
		1000~4700μF	0.65	0.85	0.95	1.00	1.00