ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

UL

Chip Type, Long Life Assurance series

For SMD | Long Life | Anti-Solvent Feature

- Chip type with load life of 5000 hours at +105°C.
- Designed for surface mounting on high density PC board.
- Compliant to the RoHS directive (2002/95/EC).

CB ← Long Life | UL | Long Life → UA

■Specifications

Item	Performance Characteristics
Category Temperature Range	−40 to +105°C
Rated Voltage Range	6.3 to 50V
Rated Capacitance Range	0.1 to 1000μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.01 CV or 3 (μA), Max
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	6.3	10	16	25	35	50
tan δ (MAX.)	0.32	0.24	0.20	0.16	0.13	0.12

Stability at Low Temperature — Measurement frequency : 120Hz

Rated voltage (V)		6.3	10	16	25	35	50
Impedance ratio ZT / Z20 (MAX.)	Z−25°C / Z+20°C	4	3	2	2	2	2
	Z−40°C / Z+20°C	10	7	5	3	3	3

Endurance

The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 5000 hours at 105°C.

Capacitance change	Within ±30% of the initial capacitance value
tan δ	300% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life

After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.

Resistance to soldering heat

The capacitors are kept on a hot plate for 30 seconds, which is maintained at 250°C. The capacitors shall meet the characteristic requirements listed at right when they are removed from the plate and restored to 20°C.

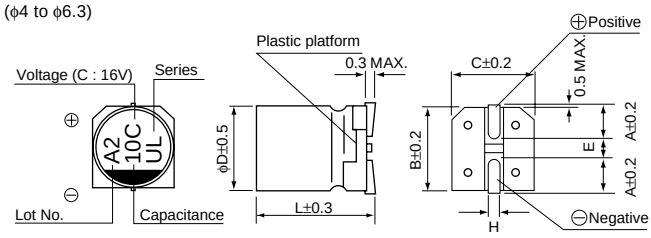
Capacitance change	Within ±10% of the initial capacitance value
tan δ	Less than or equal to the initial specified value
Leakage current	Less than or equal to the initial specified value

Marking

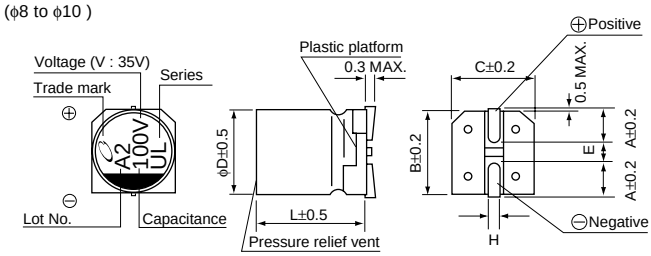
Black print on the case top.

■Chip Type

(φ4 to φ6.3)



(φ8 to φ10)



Voltage

V	6.3	10	16	25	35	50
Code	j	A	C	E	V	H

Type numbering system (Example : 16V 100μF)

1	2	3	4	5	6	7	8	9	10	11	12	13	14
U	U	L	1	C	1	0	1	M	C	L	1	G	S

- 12 13 14 : Package code
- 10 11 : Configuration
- 9 : Capacitance tolerance (±20%)
- 6 7 8 : Rated capacitance (100 μF)
- 4 5 : Rated voltage (16V)
- 3 : Series name
- 1 2 : Type

φD	Code
4 to 6.3	CL
8 · 10	NL

(mm)

φD × L	4 × 5.8	5 × 5.8	6.3 × 5.8	6.3 × 7.7	8 × 10	10 × 10
A	1.8	2.1	2.4	2.4	2.9	3.2
B	4.3	5.3	6.6	6.6	8.3	10.3
C	4.3	5.3	6.6	6.6	8.3	10.3
E	1.0	1.3	2.2	2.2	3.1	4.5
L	5.8	5.8	5.8	7.7	10	10
H	0.5 to 0.8	0.5 to 0.8	0.5 to 0.8	0.5 to 0.8	0.8 to 1.1	0.8 to 1.1

● Dimension table in next page.

UL series

■Dimensions

Cap. (μF) \ V	6.3		10		16		25		35		50	
Code	0J		1A		1C		1E		1V		1H	
0.1	0R1										4×5.8	1.0
0.22	R22										4×5.8	2.6
0.33	R33										4×5.8	3.2
0.47	R47										4×5.8	3.8
1	010										4×5.8	6.2
2.2	2R2										4×5.8	11
3.3	3R3										4×5.8	14
4.7	4R7								4×5.8	15	5×5.8	19
10	100					4×5.8	18	5×5.8	25	5×5.8	25	6.3×5.8	30
22	220			5×5.8	30	5×5.8	30	6.3×5.8	42	6.3×5.8	42	6.3×7.7	49
33	330	5×5.8	35	5×5.8	35	6.3×5.8	48	6.3×5.8	48	6.3×7.7	57	8×10	77
47	470	5×5.8	36	6.3×5.8	50	6.3×5.8	50	6.3×7.7	63	8×10	92	8×10	92
100	101	6.3×5.8	60	6.3×7.7	81	6.3×7.7	81	8×10	116	10×10	151	10×10	151
220	221	6.3×7.7	101	8×10	141	10×10	216	10×10	216	10×10	216		
330	331	8×10	160	10×10	238	10×10	238	10×10	238				
470	471	10×10	254	10×10	254	10×10	254						
1000	102	10×10	313									Case size φD×L (mm)	Rated ripple

Rated ripple current (mArms) at 105°C 120Hz

●Frequency coefficient of rated ripple current

Frequency	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
Coefficient	0.70	1.00	1.17	1.36	1.50

- Taping specifications are given in page 23.
- Recommended land size, soldering by reflow are given in page 18, 19.
- Please refer to page 3 for the minimum order quantity.