ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

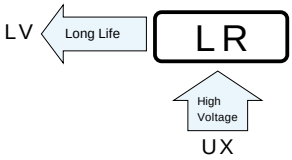
NEW

LR series

Chip Type, High Voltage.

For SMD

- Chip Type, high Voltage.
- Applicable to automatic mounting machine using carrier tape.
- Adapted to the RoHS directive (2002/95/EC).



■Specifications

Item	Performance Characteristics
Category Temperature Range	–40 to +105°C
Rated Voltage Range	160 to 500V
Rated Capacitance Range	2.7 to 39μF
Capacitance Tolerance	±20% at 120Hz, 20°C
Leakage Current	After 1 minute's application of rated voltage, leakage current is not more than 0.04CV +100(μA).
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C

Rated voltage (V)	160	200	250	400	450	500
tan δ (MAX.)	0.20	0.20	0.25	0.25	0.30	0.30

Stability at Low Temperature	Measurement frequency: 120Hz						
Rated voltage (V)		160	200	250	400	450	500
Impedance ratio ZT / Z20 (MAX.)	Z–40°C / Z+20°C	6	6	10	10	15	15

Endurance

The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 3000 hours at 105°C.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the intial 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.

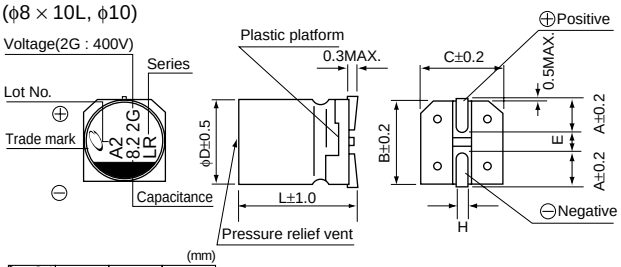
Capacitance change	Within ±10% of the initial capacitance value
tan δ	Less than or equal to the initial specified value
Leakage current	Less than or equal to the initial specified value

Marking

Black print on the case top.

■Chip Type

(φ8 × 10L, φ10)



(mm)

φD×L	8×10	10×10	10×13.5
A	2.9	3.2	3.2
B	8.3	10.3	10.3
C	8.3	10.3	10.3
E	3.1	4.5	4.5
L	10	10	13.5
H	0.8 to 1.1	0.8 to 1.1	0.8 to 1.1

Type numbering system (Example : 400V 8.2μF)

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

- 14: Taping code
- 11–13: Configuration
- 9–10: Capacitance tolerance (±20%)
- 6–8: Rated capacitance (8.2μF)
- 4–5: Rated voltage (400V)
- 3: Series name
- 1–2: Type

■Dimensions

Cap.(μF) \ V / Code	160 2C		200 2D		250 2E		400 2G		450 2W		500 2H	
2.7	2R7										8×10	20
3.9	3R9								8×10	25	10×10	35
4.7	4R7						8×10	35				
5.6	5R6										10×13.5	40
6.8	6R8								10×10	40		
8.2	8R2						10×10	50				
10	100				8×10	35			10×13.5	45		
12	120		8×10	50			10×13.5	55				
15	150	8×10	50		10×10	50						
22	220			10×10	65	10×13.5	55					
27	270	10×10	65									
33	330			10×13.5	70						Case size φD×L (mm)	Rated ripple
39	390	10×13.5	70									

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	0.80	1.00	1.25	1.40	1.60

- 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.