

# ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

**CZ** series Chip Type, High Reliability.  
Low temperature ESR specification.



Upgrade

- Chip type, high temperature range, for +125°C use.
- Added ESR specification after the test at -40°C.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2002/95/EC).

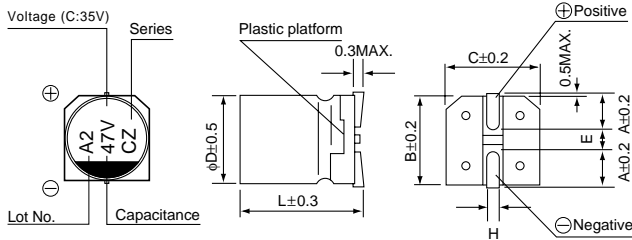


## Specifications

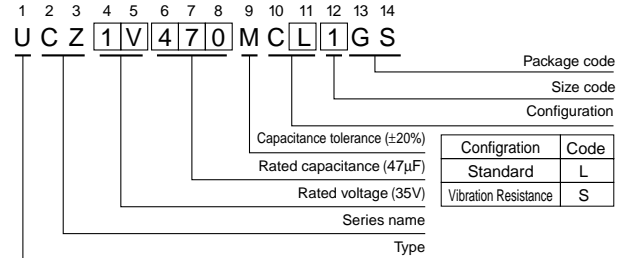
Item	Performance Characteristics									
Category Temperature Range	-40 to +125°C									
Rated Voltage Range	10 to 100V									
Rated Capacitance Range	10 to 470 μF									
Capacitance Tolerance	±20% at 120Hz, 20°C									
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3(μA), whichever is greater.									
Tangent of loss angle (tan δ)	Measurement frequency : 120Hz at 20°C									
	Rated voltage (V)	10	16	25	35	50	63	80	100	
Stability at Low Temperature	Measurement frequency : 120Hz									
	Rated voltage (V)	10	16	25	35	50	63	80	100	
Endurance	Impedance ratio ZT / Z20 (MAX.)	Z-40°C / Z+20°C	12	8	6	4	4	3	3	3
	Capacitance Change	Within ±30% of the initial capacitance value								
Shelf Life	tan δ	300% or less than the initial specified value								
	Leakage current	Less than or equal to the initial specified value								
Resistance to soldering heat	After storing the capacitors under no load at 125°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.									
	Capacitance Change	Within ±10% of the initial capacitance value								
Marking	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

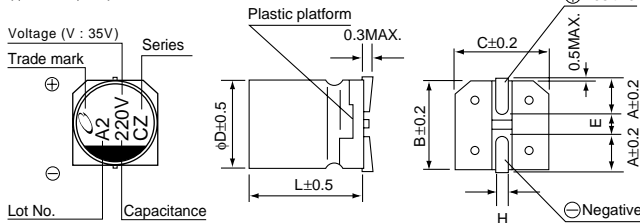
(φ 6.3) 【Standard】 ※ please contact us for vibration resistance.



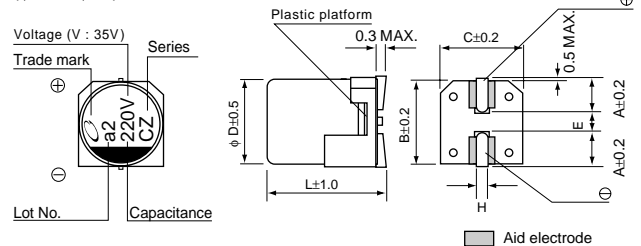
## Type numbering system (Example : 35V 47μF)



## (φ 8 to φ10) 【Standard】



## (φ 8 to φ10) 【Vibration Resistance】



Standard	(mm)				Vibration Resistance (mm)			
	φD×L	6.3×5.8	6.3×7.7	8×10	10×10	φD×L	8×10	10×10
A		2.4	2.4	2.9	3.2	A	2.9	3.2
B		6.6	6.6	8.3	10.3	B	8.3	10.3
C		6.6	6.6	8.3	10.3	C	8.3	10.3
E		2.2	2.2	3.1	4.5	E	3.1	4.5
L		5.8	7.7	10	10	L	10	10
H		0.5 to 0.8	0.5 to 0.8	0.8 to 1.1	0.8 to 1.1	H	1.1 to 1.5	1.1 to 1.5

Rated Voltage	Code								
	V	10	16	25	35	50	63	80	100
Code	A	C	E	V	H	J	K	2A	

## ■Dimensions

V		10	16	25	35	50
Cap. (μF)	Code	1A	1C	1E	1V	1H
10	100				6.3 × 5.8   1.60   24   —   69	6.3 × 5.8   2.80   42   —   51
22	220				6.3 × 5.8   1.60   24   —   69	6.3 × 7.7   0.50   5   40   197
33	330			6.3 × 5.8   1.60   24   —   69	6.3 × 7.7   0.45   5   40   197	● 6.3 × 7.7   0.50   5   40   197 8 × 10   0.25   3.5   6   270
47	470		6.3 × 5.8   1.60   24   —   69	Recommend 35V →	● 6.3 × 7.7   0.45   5   40   197 8 × 10   0.20   3   4.5   270	● 6.3 × 7.7   0.50   5   40   197 8 × 10   0.25   3.5   6   270
68	680				8 × 10   0.20   3   4.5   270	
100	101	Recommend 16V →	● 6.3 × 7.7   0.45   5   40   197 8 × 10   0.20   3   4.5   270	● 6.3 × 7.7   0.45   5   40   197 8 × 10   0.20   3   4.5   270	8 × 10   0.20   3   4.5   270	10 × 10   0.20   2.5   4.5   500
220	221	8 × 10   0.20   3   4.5   270	10 × 10   0.15   2   3.5   500	● 8 × 10   0.20   3   4.5   270 10 × 10   0.15   2   3.5   500	10 × 10   0.15   2   3.5   500	
330	331	● 8 × 10   0.20   3   4.5   270 10 × 10   0.15   2   3.5   500	10 × 10   0.15   2   3.5   500	10 × 10   0.15   2   3.5   500		Case size φD × L (mm) Initial 20°C Initial -40°C after endurance test 2000 hours -40°C Rated ripple ESR
470	471	10 × 10   0.15   2   3.5   500	10 × 10   0.15   2   3.5   500			

V		63	80	100
Cap. (μF)	Code	1J	1K	2A
10	100	6.3 × 7.7   2.00   100   —   60	8 × 10   0.75   50   —   70	8 × 10   0.75   50   —   70
22	220	8 × 10   0.70   35   —   100	● 8 × 10   0.75   50   —   70 10 × 10   0.55   35   —   115	● 8 × 10   0.75   50   —   70 10 × 10   0.55   35   —   115
33	330	● 8 × 10   0.70   35   —   100 10 × 10   0.50   25   —   170	● 8 × 10   0.75   50   —   70 10 × 10   0.55   35   —   115	10 × 10   0.55   35   —   115
47	470	● 8 × 10   0.70   35   —   160 10 × 10   0.50   25   —   170	10 × 10   0.55   35   —   115	Case size φD × L (mm) Initial 20°C Initial -40°C after endurance test 2000 hours -40°C Rated ripple ESR

Max. ESR (Ω) at 20°C / -40°C 100kHz, Rated ripple Current (mArms) at 125°C 100kHz  
 ● : In this case, ● will be put at 12th digit of type numbering system.

### ● Frequency coefficient of rated ripple current

Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
Coefficient	0.35	0.50	0.64	0.83	1.00

- 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.