

ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

CZ

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



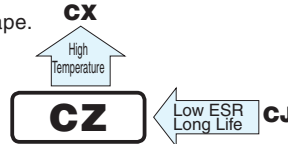
For SMD

Long Life

Anti-Solvent
Feature

Expanded

- 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 (2011/65/EU).

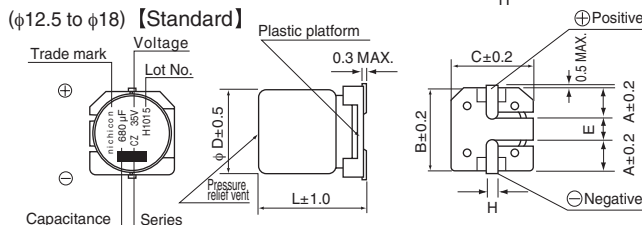
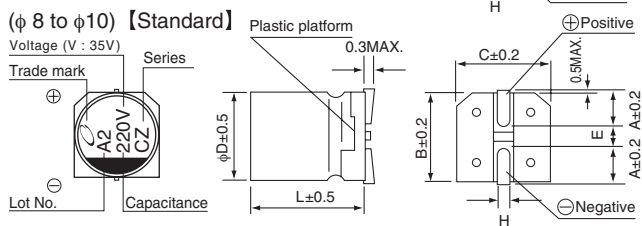
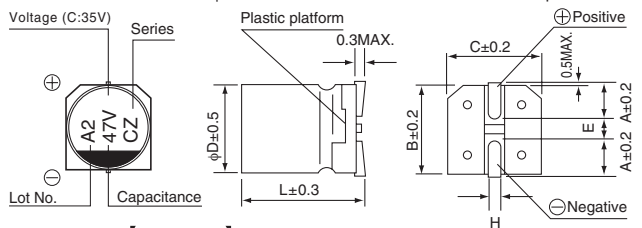


Specifications

Item	Performance Characteristics										
Category Temperature Range	-40 to +125°C										
Rated Voltage Range	10 to 100V										
Rated Capacitance Range	10 to 3300μF										
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 3μA, 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		
	tan δ (MAX.)	0.30	0.23	0.18	0.16	0.16	0.12	0.12	0.10		
	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.										
Stability at Low Temperature	Rated voltage (V)		10	16	25	35	50	63	80	100	Measurement frequency : 120Hz
	Impedance ratio ZT / Z20 (MAX.)	Z-40°C / Z+20°C	12	8	6	4	4	3	3	3	
	After continuous application of rated voltage at 125°C and then restoring down to 20°C, the readings of measurements shall meet below.										
Endurance	Case size		φ6.3 × 5.8L	φ6.3 × 7.7L	φ8 to φ12.5	φ16,18 × 16.5L	φ16,18 × 21.5L				
	Endurance time		1000hrs.	2000hrs.	3000hrs.	3500hrs.	4000hrs.				
	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 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.										
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.										

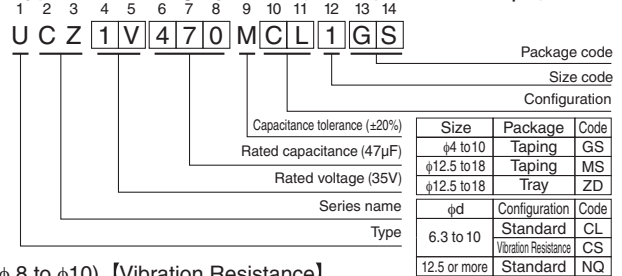
Chip Type

(φ 6.3) 【Standard】 ※ φ6.3 × 5.8L : The vibration structure-resistant product can't support.
φ6.3 × 7.7L : The vibration structure-resistant product is available.

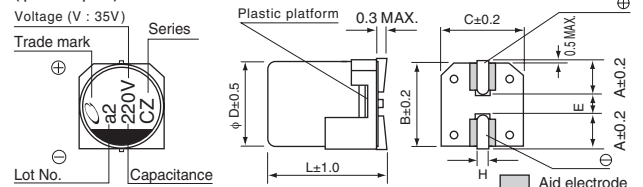


※φ12.5 to φ18 :
The vibration structure-resistant
product is also available upon
request, please ask for details.

Type numbering system (Example : 35V 47μF)



(φ 8 to φ10) 【Vibration Resistance】



Standard	(mm)										Vibration Resistance (mm)	
	6.3X5.8	6.3X7.7	8X10	10X10	12.5X13.5	16X16.5	16X21.5	18X16.5	18X21.5		8X10	10X10
A	2.4	2.4	2.9	3.2	4.8	5.4	5.4	6.4	6.4	A	2.9	3.2
B	6.6	6.6	8.3	10.3	13.6	17.1	17.1	19.1	19.1	B	8.3	10.3
C	6.6	6.6	8.3	10.3	13.6	17.1	17.1	19.1	19.1	C	8.3	10.3
E	2.2	2.2	3.1	4.5	4	6.3	6.3	6.3	6.3	E	3.1	4.5
L	5.8	7.7	10	10	13.5	16.5	21.5	16.5	21.5	L	10	10
H	0.5 to 0.8	0.5 to 0.8	0.8 to 1.1	0.8 to 1.1	1.0 to 1.4	1.0 to 1.4	1.0 to 1.4	1.0 to 1.4	1.0 to 1.4	H	1.1 to 1.5	1.1 to 1.5

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

■ Dimensions

Cap. (μF)	V	10					16					25					35					50									
	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 8×10	0.50	5	40	197				
47	470												Recommend 35V ➡					6.3×7.7	0.45	5	40	197	●6.3×7.7 8×10	0.50	5	40	197				
68	680																8×10	0.20	3	4.5	270		8×10	0.25	3.5	6	270				
100	101	Recommend 16V ➡					●6.3×7.7 8×10	0.45	5	40	197	●6.3×7.7 8×10	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	8×10	0.20	3	4.5	270	●8×10 10×10	0.20	3	4.5	270	10×10	0.15	2	3.5	500										
330	331	●8×10 10×10	0.20	3	4.5	270	10×10	0.15	2	3.5	500	10×10	0.15	2	3.5	500															
390	391																														
470	471	10×10	0.15	2	3.5	500	10×10	0.15	2	3.5	500						12.5×13.5	0.060	0.40	3.0	1700	16×16.5	0.080	0.34	2.6	2000					
560	561																12.5×13.5	0.060	0.40	3.0	1700	16×16.5	0.080	0.34	2.6	2000					
680	681																12.5×13.5	0.060	0.40	3.0	1700	18×16.5	0.078	0.32	2.6	2100					
820	821																12.5×13.5	0.060	0.40	3.0	1700	16×16.5	0.047	0.28	1.4	2400	18×16.5	0.078	0.32	2.6	2100
1000	102																12.5×13.5	0.060	0.40	3.0	1700	16×16.5	0.047	0.28	1.4	2400	16×21.5	0.040	0.22	1.5	2800
1200	122																16×16.5	0.047	0.28	1.4	1700	18×16.5	0.045	0.28	1.4	2600	18×21.5	0.038	0.20	1.5	2900
1400	142																														
1600	162																16×16.5	0.047	0.28	1.4	2400	16×21.5	0.034	0.20	0.6	3000					
2200	222																18×16.5	0.045	0.23	1.3	2600	18×21.5	0.032	0.16	0.5	3250					
2700	272																16×21.5	0.034	0.20	0.6	3000										
3300	332																18×21.5	0.032	0.16	0.5	3250										

V Cap. (μF)	Code	63					80					100				
		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 10 × 10	0.75 0.55	50 35	— —	70 115	● 8 × 10 10 × 10	0.75 0.55	50 35	— —	70 115
33	330	● 8 × 10 10 × 10	0.70 0.50	35 25	— —	100 170	● 8 × 10 10 × 10	0.75 0.55	50 35	— —	70 115	10 × 10	0.55	35	—	115
47	470	● 8 × 10 10 × 10	0.70 0.50	35 25	— —	100 170	10 × 10	0.55	35	—	115					
82	820											12.5×13.5	0.28	1.9	22	700
150	151	12.5 × 13.5	0.20	1.3	14	1000	12.5 × 13.5	0.28	1.9	14	700	16×16.5	0.19	1.4	4.8	1000
180	181	12.5 × 13.5	0.20	1.3	14	1000						18×16.5	0.17	1.1	3.9	1100
220	221	12.5 × 13.5	0.20	1.3	14	1000						16×21.5	0.12	0.8	2.6	1600
270	271						16 × 16.5	0.19	1.4	4.8	1000					
300	301											18×21.5	0.11	0.7	2.4	1700
330	331						18 × 16.5	0.17	1.1	3.9	1100					
390	391	16 × 16.5	0.13	0.9	4.8	1900	16 × 21.5	0.12	0.8	2.6	1600					
470	471	18 × 16.5	0.11	0.82	3.9	2000										
520	521						18 × 21.5	0.11	0.7	2.4	1700	Case size φD × L (mm)	Initial 20°C	Initial -40°C	after endurance test 40°C	Rate of ripple
560	561	16 × 21.5	0.07	0.46	2.0	2500										
750	751	18 × 21.5	0.068	0.44	1.8	2600					ESR					

※ Guaranteed time of ESR after endurance test

Size	Guaranteed time
φ6.3 × 5.8L	—
φ6.3 × 7.7L, φ8 × 10L	10 to 50V 2000hrs.
φ10 × 10L	63 to 100V —
φ16, 18 × 16.5L	2000hrs.
φ16, 18 × 21.5L	3000hrs.

Max. ESR (Ω) at 20°C / -40°C 100kHz, Rated ripple Current (mA rms) at 125°C 100kHz
 ● : In this case, [G] 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.