ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

Upgrade

CZ series

Chip Type, High Reliability.
Low temperature ESR specification.

For SMD | Long Life | Anti-Solvent Feature

- 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).

CZ ← Low ESR / Long Life — CJ

■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
tan δ (MAX.)	0.30	0.23	0.18	0.16	0.16	0.12	0.12	0.10

Stability at Low Temperature — Measurement frequency : 120Hz

Rated voltage (V)		10	16	25	35	50	63	80	100
Impedance ratio ZT / Z20 (MAX.)	Z–40°C / Z+20°C	12	8	6	4	4	3	3	3

Endurance — After 3000 hours (1000hours for φ6.3 × 5.8L, 2000hours for φD=6.3 × 7.7L) application of rated voltage at 125°C, capacitors meet the characteristics requirements listed below.

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.

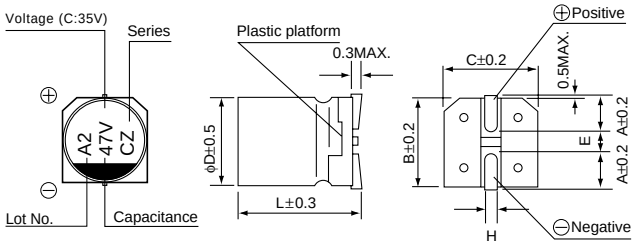
Resistance to soldering heat — The capacitors are kept on a hot plate for 30 seconds, which is maintained at 250°C. The capacitors shall meet the characteristic requirements listed at right when they are removed from the plate and restored to 20°C.

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

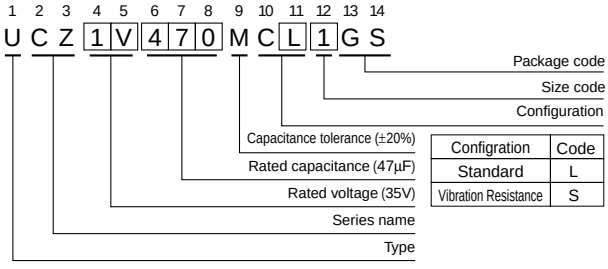
Marking — Black print on the case top.

■Chip Type

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

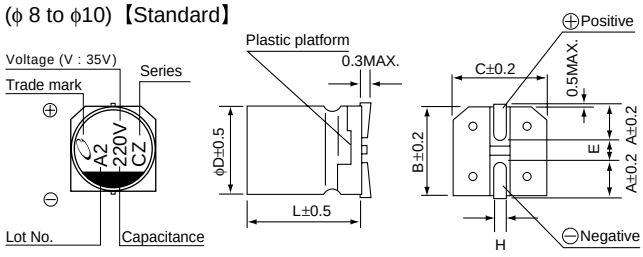


Type numbering system (Example : 35V 47µF)

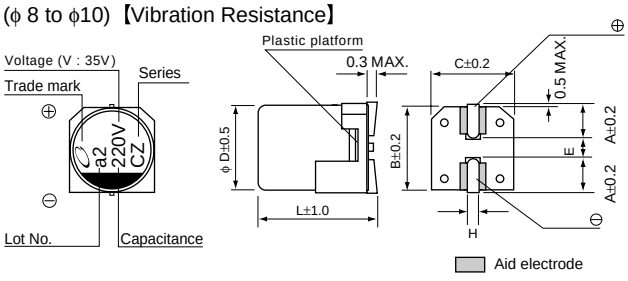


Configration	Code
Standard	L
Vibration Resistance	S

(φ 8 to φ10)【Standard】



(φ 8 to φ10)【Vibration Resistance】



Standard (mm)

φD×L	6.3×5.8	6.3×7.7	8×10	10×10
A	2.4	2.4	2.9	3.2
B	6.6	6.6	8.3	10.3
C	6.6	6.6	8.3	10.3
E	2.2	2.2	3.1	4.5
L	5.8	7.7	10	10
H	0.5 to 0.8	0.5 to 0.8	0.8 to 1.1	0.8 to 1.1

Vibration Resistance (mm)

φD×L	8×10	10×10
A	2.9	3.2
B	8.3	10.3
C	8.3	10.3
E	3.1	4.5
L	10	10
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

CZ series

■Dimensions

Cap. (μF) \ V	Code	10	16	25	35	50
		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			

Cap. (μF) \ V	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 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 2000hours -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, 6 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.

Mouser Electronics

Authorized Distributor

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Nichicon:

UCZ2A220MCS6GS UCZ1A471MCS1GS UCZ1E221MCS6GS UCZ1E101MCS6GS UCZ1A221MCS1GS UCZ1H470MCS1GS UCZ1J470MCS6GS UCZ1H330MCS6GS UCZ1V220MCL1GS UCZ1K220MCL1GS UCZ1V100MCL1GS UCZ2A100MCS1GS UCZ1K470MCS1GS UCZ1J470MCS1GS UCZ2A220MCS1GS UCZ1V101MCS1GS UCZ1C470MCS1GS UCZ1J330MCS6GS UCZ1H220MCS1GS UCZ1H330MCS1GS UCZ1C331MCS1GS UCZ1H101MCS1GS UCZ1H330MCL1GS UCZ1C471MCS1GS UCZ1K330MCS6GS UCZ1J470MCL1GS UCZ1J330MCL6GS UCZ2A220MCL1GS UCZ1V680MCS1GS UCZ1K100MCS1GS UCZ1K220MCS1GS UCZ1J100MCL1GS UCZ2A330MCS1GS UCZ1V221MCS1GS UCZ1E101MCS1GS UCZ1A331MCS6GS UCZ1E330MCS1GS UCZ1H470MCL6GS UCZ1C101MCS6GS UCZ1E221MCS1GS UCZ1E330MCL1GS UCZ1C101MCS1GS UCZ1J220MCL1GS UCZ1H100MCL1GS UCZ1H470MCS6GS UCZ1K330MCL1GS UCZ1V220MCS1GS UCZ1V330MCS1GS UCZ1K220MCL6GS UCZ1K330MCS1GS UCZ1V470MCS6GS UCZ1V330MCL1GS UCZ1C221MCS1GS UCZ1H101MCL1GS UCZ1E331MCS1GS UCZ1K220MCS6GS UCZ1J100MCS1GS UCZ1J330MCL1GS UCZ1J220MCS1GS UCZ1H220MCL1GS UCZ1V470MCS1GS UCZ1K330MCL6GS UCZ1J330MCS1GS UCZ2A100MCL1GS UCZ1H100MCS1GS UCZ1C470MCL1GS UCZ1H330MCL6GS UCZ1A331MCS1GS UCZ1E221MCL6GS UCZ1K100MCL1GS UCZ1K470MCL1GS UCZ1J470MCL6GS UCZ1H470MCL1GS UCZ2A330MCL1GS UCZ2A220MCL6GS UCZ1V100MCS1GS UCZ1E101MCL6GS