ALUMINUM ELECTROLYTIC CAPACITORS

UCZ

Chip Type, High Reliability.
Low temperature ESR specification.

For SMD | Long Life

- 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,(EU)2015/863).
- AEC-Q200 Qualified. Please contact us for details.

UCX (High Temperature) / UCH (Low ESR) / UCZ / UCJ (Low ESR Long Life)

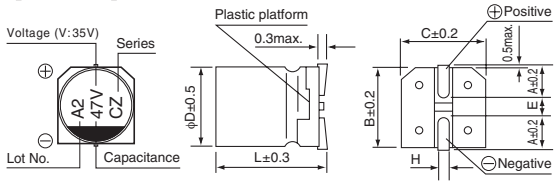
■Specifications

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 at 20°C, leakage current is not more than 0.01CV (μA).
Tangent of loss angle (tan δ)	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 Measurement frequency : 120Hz at 20°C For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. (φ12.5 to φ18)
Stability at Low Temperature	Rated voltage (V): 10 / 16 / 25 / 35 / 50 / 63 / 80 / 100 Impedance ratio (max.) Z(−40°C) / Z(+20°C): 12 / 8 / 6 / 4 / 4 / 3 / 3 / 3 Measurement frequency : 120Hz
Endurance	After continuous application of rated voltage at 125°C and then restoring down to 20°C, the readings of measurements shall meet below. 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.

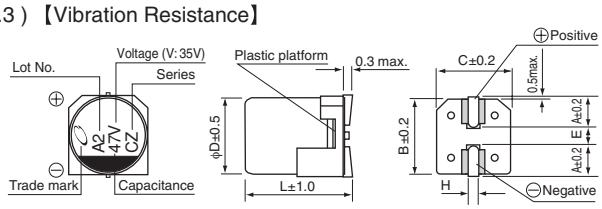
※ I : Leakage Current (μA), C : Rated Capacitance (μF), V : Rated Voltage (V)

■Chip Type

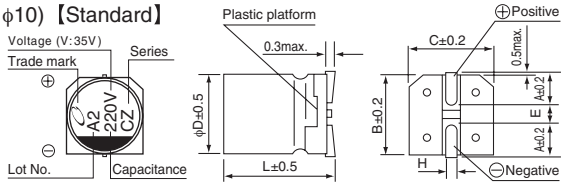
(φ 6.3)【Standard】※ φ6.3 × 5.8L : The vibration structure-resistant product can't support.



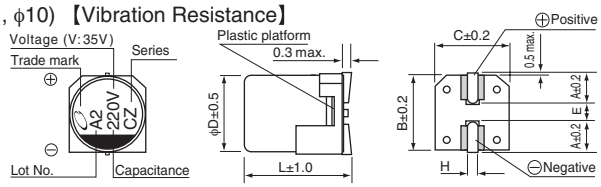
(φ 6.3)【Vibration Resistance】



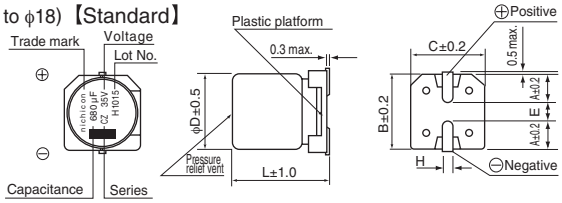
(φ 8 , φ10)【Standard】



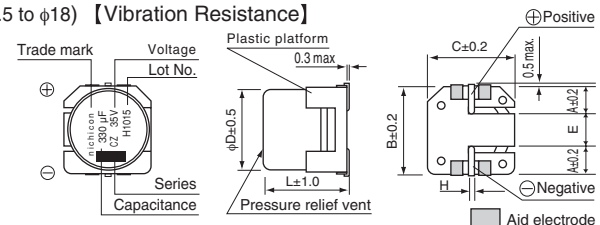
(φ 8 , φ10)【Vibration Resistance】



(φ12.5 to φ18)【Standard】



(φ12.5 to φ18)【Vibration Resistance】



Standard (mm)

φDXL	6.3X5.8	6.3X7.7	8X10	10X10	12.5X13.5	16X16.5, 21.5	18X16.5, 21.5
A	2.4	2.4	2.9	3.2	5.15	5.65	6.65
B	6.6	6.6	8.3	10.3	13.6	17.1	19.1
C	6.6	6.6	8.3	10.3	13.6	17.1	19.1
E	2.2	2.2	3.1	4.5	(3.3)	(5.8)	(5.8)
L	5.8	7.7	10	10	13.5	16.5, 21.5	16.5, 21.5
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

Vibration Resistance (mm)

φDXL	6.3X7.7	8X10	10X10	φ12.5	φ16	φ18
A	2.4	2.9	3.2	4.8	5.4	6.4
B	6.6	8.3	10.3	13.6	17.1	19.1
C	6.6	8.3	10.3	13.6	17.1	19.1
E	2.2	3.1	4.5	(4.0)	(6.3)	(6.3)
L	7.7	10	10	13.5	16.5, 21.5	16.5, 21.5
H	0.5 to 0.8	1.1 to 1.5	1.1 to 1.5	1.0 to 1.4	1.0 to 1.4	1.0 to 1.4

Voltage

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

● 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

Type numbering system (Example : 35V 47μF)

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

- Taping code
- Size code
- Configuration
- Capacitance tolerance (±20%): M
- Rated capacitance (47μF): 470
- Rated voltage (35V): 1V
- Series name: UCZ
- Type: UC

Size	Code
φ4 to 10	GS
φ12.5 to 18	MS

※ Configuration

Configuration	Code
Standard	CL (φ10 or less) NJ (φ12.5 or more)
Vibration Resistance	CS (φ10 or less) NS (φ12.5 or more)

● Dimension table in next page.

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NICHICON CORPORATION

Jun. 2024

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■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μF)	Case Size φD×L (mm)	tan δ	Leakage Current (μA) (at 20℃ after 2 minutes)	ESR (Ω) max. (20℃/−40℃/100kHz) Initial 20℃	Initial −40℃	after endurance test −40℃ ※	Rated Ripple (mArms) (125℃/100kHz)	Part Number
10 (1A)	220	8×10	0.30	22	0.20	3.00	4.5	270	UCZ1A221M□□1GS
	330	8×10	0.30	33	0.20	3.00	4.5	270	UCZ1A331M□□6GS
	330	10×10	0.30	33	0.15	2.00	3.5	500	UCZ1A331M□□1GS
	470	10×10	0.30	47	0.15	2.00	3.5	500	UCZ1A471M□□1GS
16 (1C)	47	6.3×5.8	0.23	7.52	1.60	24.00	—	69	UCZ1C470MCL1GS
	100	6.3×7.7	0.23	16	0.45	5.00	40	197	UCZ1C101M□□6GS
	100	8×10	0.23	16	0.20	3.00	4.5	270	UCZ1C101M□□1GS
	220	8×10	0.23	35.2	0.20	3.00	4.5	270	UCZ1C221M□□1GS
	330	10×10	0.23	52.8	0.15	2.00	3.5	500	UCZ1C331M□□1GS
	470	10×10	0.23	75.2	0.15	2.00	3.5	500	UCZ1C471M□□1GS
25 (1E)	33	6.3×5.8	0.18	8.25	1.60	24.00	—	69	UCZ1E330MCL1GS
	100	6.3×7.7	0.18	25	0.45	5.00	40	197	UCZ1E101M□□6GS
	100	8×10	0.18	25	0.20	3.00	4.5	270	UCZ1E101M□□1GS
	220	8×10	0.18	55	0.20	3.00	4.5	270	UCZ1E221M□□6GS
	220	10×10	0.18	55	0.15	2.00	3.5	500	UCZ1E221M□□1GS
	330	10×10	0.18	82.5	0.15	2.00	3.5	500	UCZ1E331M□□1GS
	820	12.5×13.5	0.18	205	0.060	0.40	3	1700	UCZ1E821M□□1MS
	1000	12.5×13.5	0.18	250	0.060	0.40	3	1700	UCZ1E102M□□1MS
	1200	16×16.5	0.18	300	0.047	0.28	1.4	1700	UCZ1E122M□□1MS
	1600	16×16.5	0.18	400	0.047	0.28	1.4	2400	UCZ1E162M□□1MS
	2200	18×16.5	0.20	550	0.045	0.23	1.3	2600	UCZ1E222M□□1MS
	2700	16×21.5	0.20	675	0.034	0.20	0.6	3000	UCZ1E272M□□1MS
	3300	18×21.5	0.22	825	0.032	0.16	0.5	3250	UCZ1E332M□□1MS
35 (1V)	10	6.3×5.8	0.16	3.5	1.60	24.00	—	69	UCZ1V100MCL1GS
	22	6.3×5.8	0.16	7.7	1.60	24.00	—	69	UCZ1V220MCL1GS
	33	6.3×7.7	0.16	11.55	0.45	5.00	40	197	UCZ1V330M□□1GS
	47	6.3×7.7	0.16	16.45	0.45	5.00	40	197	UCZ1V470M□□6GS
	47	8×10	0.16	16.45	0.20	3.00	4.5	270	UCZ1V470M□□1GS
	68	8×10	0.16	23.8	0.20	3.00	4.5	270	UCZ1V680M□□1GS
	100	8×10	0.16	35	0.20	3.00	4.5	270	UCZ1V101M□□1GS
	220	10×10	0.16	77	0.15	2.00	3.5	500	UCZ1V221M□□1GS
	470	12.5×13.5	0.16	164.5	0.060	0.40	3.0	1700	UCZ1V471M□□1MS
	560	12.5×13.5	0.16	196	0.060	0.40	3.0	1700	UCZ1V561M□□1MS
	680	12.5×13.5	0.16	238	0.060	0.40	3.0	1700	UCZ1V681M□□1MS
	820	16×16.5	0.16	287	0.047	0.28	1.4	2400	UCZ1V821M□□1MS
	1000	16×16.5	0.16	350	0.047	0.28	1.4	2400	UCZ1V102M□□1MS
	1200	18×16.5	0.16	420	0.045	0.28	1.4	2600	UCZ1V122M□□1MS
	1400	18×16.5	0.16	490	0.045	0.28	1.4	2600	UCZ1V142M□□1MS
	1600	16×21.5	0.16	560	0.034	0.20	0.6	3000	UCZ1V162M□□1MS
	2200	18×21.5	0.18	770	0.032	0.16	0.5	3250	UCZ1V222M□□1MS
50 (1H)	10	6.3×5.8	0.16	5	2.80	42.00	—	51	UCZ1H100MCL1GS
	22	6.3×7.7	0.16	11	0.50	5.00	40	197	UCZ1H220M□□1GS
	33	6.3×7.7	0.16	16.5	0.50	5.00	40	197	UCZ1H330M□□6GS
	33	8×10	0.16	16.5	0.25	3.50	6	270	UCZ1H330M□□1GS
	47	6.3×7.7	0.16	23.5	0.50	5.00	40	197	UCZ1H470M□□6GS
	47	8×10	0.16	23.5	0.25	3.50	6	270	UCZ1H470M□□1GS
	100	10×10	0.16	50	0.20	2.50	4.5	500	UCZ1H101M□□1GS
	390	12.5×13.5	0.16	195	0.10	0.44	4.0	1300	UCZ1H391M□□1MS
	470	16×16.5	0.16	235	0.080	0.34	2.6	2000	UCZ1H471M□□1MS
	560	16×16.5	0.16	280	0.080	0.34	2.6	2000	UCZ1H561M□□1MS
	680	18×16.5	0.16	340	0.078	0.32	2.6	2100	UCZ1H681M□□1MS
	820	18×16.5	0.16	410	0.078	0.32	2.6	2100	UCZ1H821M□□1MS
	1000	16×21.5	0.16	500	0.040	0.22	1.5	2800	UCZ1H102M□□1MS
	1200	18×21.5	0.16	600	0.038	0.20	1.5	2900	UCZ1H122M□□1MS

□□ : Enter the appropriate configuration code.

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■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μF)	Case Size φD×L (mm)	tan δ	Leakage Current (μA) (at 20℃ after 2 minutes)	ESR (Ω) max. (20℃/−40℃/100kHz) Initial 20℃	ESR (Ω) max. (20℃/−40℃/100kHz) Initial −40℃	ESR (Ω) max. (20℃/−40℃/100kHz) after endurance test −40℃ ※	Rated Ripple (mArms) (125℃/100kHz)	Part Number
63 (1J)	10	6.3×7.7	0.12	6.3	2.00	100.00	—	60	UCZ1J100M□□1GS
	22	8×10	0.12	13.86	0.70	35.00	—	100	UCZ1J220M□□1GS
	33	8×10	0.12	20.79	0.70	35.00	—	100	UCZ1J330M□□6GS
	33	10×10	0.12	20.79	0.50	25.00	—	170	UCZ1J330M□□1GS
	47	8×10	0.12	29.61	0.70	35.00	—	100	UCZ1J470M□□6GS
	47	10×10	0.12	29.61	0.50	25.00	—	170	UCZ1J470M□□1GS
	150	12.5×13.5	0.12	94.5	0.20	1.30	14	1000	UCZ1J151M□□1MS
	180	12.5×13.5	0.12	113.4	0.20	1.30	14	1000	UCZ1J181M□□1MS
	220	12.5×13.5	0.12	138.6	0.20	1.30	14	1000	UCZ1J221M□□1MS
	390	16×16.5	0.12	245.7	0.13	0.90	4.8	1900	UCZ1J391M□□1MS
	470	18×16.5	0.12	296.1	0.11	0.82	3.9	2000	UCZ1J471M□□1MS
	560	16×21.5	0.12	352.8	0.070	0.46	2.0	2500	UCZ1J561M□□1MS
	750	18×21.5	0.12	472.5	0.068	0.44	1.8	2600	UCZ1J751M□□1MS
80 (1K)	10	8×10	0.12	8	0.75	50.00	—	70	UCZ1K100M□□1GS
	22	8×10	0.12	17.6	0.75	50.00	—	70	UCZ1K220M□□6GS
	22	10×10	0.12	17.6	0.55	35.00	—	115	UCZ1K220M□□1GS
	33	8×10	0.12	26.4	0.75	50.00	—	70	UCZ1K330M□□6GS
	33	10×10	0.12	26.4	0.55	35.00	—	115	UCZ1K330M□□1GS
	47	10×10	0.12	37.6	0.55	35.00	—	115	UCZ1K470M□□1GS
	150	12.5×13.5	0.12	120	0.28	1.90	14	700	UCZ1K151M□□1MS
	270	16×16.5	0.12	216	0.19	1.40	4.8	1000	UCZ1K271M□□1MS
	330	18×16.5	0.12	264	0.17	1.10	3.9	1100	UCZ1K331M□□1MS
	390	16×21.5	0.12	312	0.12	0.80	2.6	1600	UCZ1K391M□□1MS
	520	18×21.5	0.12	416	0.11	0.70	2.4	1700	UCZ1K521M□□1MS
100 (2A)	10	8×10	0.10	10	0.75	50.00	—	70	UCZ2A100M□□1GS
	22	8×10	0.10	22	0.75	50.00	—	70	UCZ2A220M□□6GS
	22	10×10	0.10	22	0.55	35.00	—	115	UCZ2A220M□□1GS
	33	10×10	0.10	33	0.55	35.00	—	115	UCZ2A330M□□1GS
	82	12.5×13.5	0.10	82	0.28	1.90	22	700	UCZ2A820M□□1MS
	150	16×16.5	0.10	150	0.19	1.40	4.8	1000	UCZ2A151M□□1MS
	180	18×16.5	0.10	180	0.17	1.10	3.9	1100	UCZ2A181M□□1MS
	220	16×21.5	0.10	220	0.12	0.80	2.6	1600	UCZ2A221M□□1MS
	300	18×21.5	0.10	300	0.11	0.70	2.4	1700	UCZ2A301M□□1MS

□□ : Enter the appropriate configuration code.

※ Guaranteed time of ESR after endurance test

Size	Guaranteed time	
φ6.3 × 5.8L	–	
φ6.3 × 7.7L, φ8 × 10L φ10 × 10L	10 to 50V	2000hrs.
	63 to 100V	–
φ12.5	2000hrs.	
φ16,18 × 16.5L	2000hrs.	
φ16,18 × 21.5L	3000hrs.	

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