

ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

CX Chip Type, High Reliability
Low temperature ESR specification
series



- Chip type, high temperature range, for +135°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).

CX

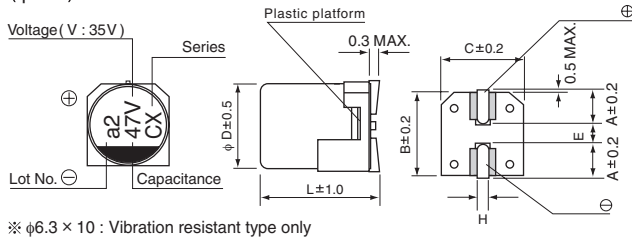


Specifications

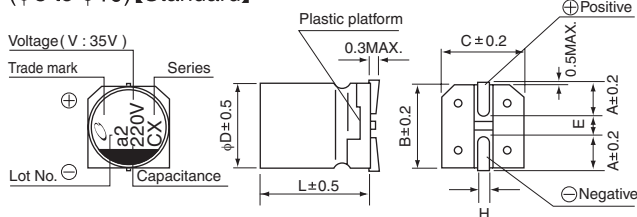
Item	Performance Characteristics							
Category Temperature Range	-40 to +135°C							
Rated Voltage Range	10 to 50V							
Rated Capacitance Range	47 to 3300μF							
Capacitance Tolerance	±20% at 120Hz, 20°C							
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3(μA), whichever is greater.							
Tangent of loss angle (tan δ)	Rated voltage (V)	10	16	25	35	50	Measurement frequency : 120Hz at 20°C	
	tan δ (MAX.)	0.30	0.23	0.18	0.16	0.16		
Stability at Low Temperature	Rated voltage (V)		10	16	25	35	50	Measurement frequency : 120Hz
	Impedance ratio ZT / Z20 (MAX.)	Z-40°C / Z+20°C	12	8	6	4	4	
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 135°C.					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 135°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 shall be kept on the 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.							

Radial Lead Type

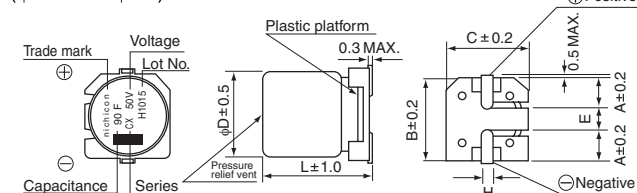
(φ6.3)【Vibration Resistance】



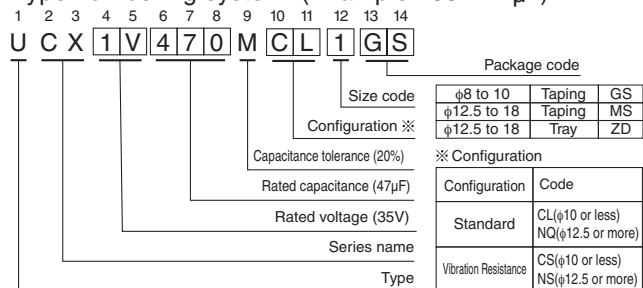
(φ8 to φ10)【Standard】



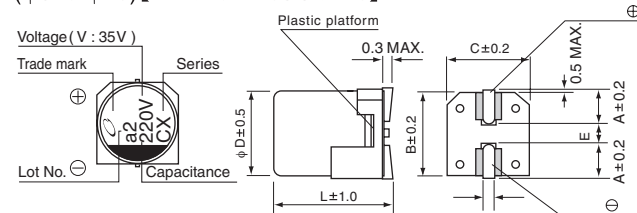
(φ12.5 to φ18)【Standard】



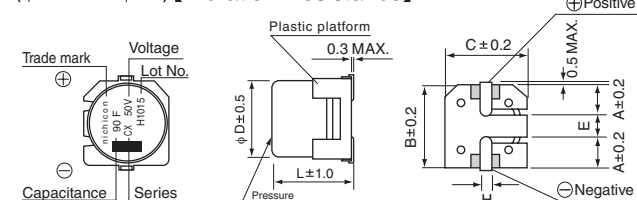
Type numbering system (Example : 35V 47μF)



(φ8 to φ10)【Vibration Resistance】



(φ12.5 to φ18)【Vibration Resistance】



Standard

φD×L	8×10	10×10	12.5×13.5	16×16.5, 21.5	18×16.5, 21.5
A	2.9	3.2	4.8	5.4	6.4
B	8.3	10.3	13.6	17.1	19.1
C	8.3	10.3	13.6	17.1	19.1
E	3.1	4.5	4	6.3	6.3
L	10	10	13.5	16.5, 21.5	16.5, 21.5
H	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

φD×L	6.3×10	8×10	10×10	12.5×13.5	16×16.5, 21.5	18×16.5, 21.5
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	6.3	6.3
L	10	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

●Dimension table in next page.

Rated Voltage

V	10	16	25	35	50
Code	A	C	E	V	H

CAT.8100D



■ Dimensions

Cap.(μF)	V	Code	10	16	25	35	50
			1A	1C	1E	1V	1H
47	470					●6.3 X 10 0.25 4 15 197 8 X 10 0.20 3 12 270	8 X 10 0.25 3.5 15 270
68	680					8 X 10 0.20 3 12 270	
100	101			●6.3 X 10 0.25 4 15 197 8 X 10 0.20 3 12 270	8 X 10 0.20 3 12 270	●6.3 X 10 0.25 4 15 197 8 X 10 0.20 3 12 270	10 X 10 0.2 2.5 12 500
220	221	8 X 10 0.20 3 12 270	8 X 10 0.20 3 12 270		10 X 10 0.15 2 10 500	10 X 10 0.15 2 10 500	
330	331	●8 X 10 0.20 3 12 270 10 X 10 0.15 2 10 500	10 X 10 0.15 2 10 500		10 X 10 0.15 2 10 500		
390	391						12.5 X 13.5 0.09 1.3 6.5 750
470	471	10 X 10 0.15 2 10 500	10 X 10 0.15 2 10 500			12.5 X 13.5 0.07 1.0 5.0 750	16 X 16.5 0.07 0.70 3.5 1000
560	561					12.5 X 13.5 0.07 1.0 5.0 750	16 X 16.5 0.07 0.70 3.5 1000
680	681					12.5 X 13.5 0.07 1.0 5.0 750	18 X 16.5 0.07 0.70 3.5 1200
820	821				12.5 X 13.5 0.07 1.0 5.0 750	16 X 16.5 0.05 0.50 2.5 1200	18 X 16.5 0.07 0.70 3.5 1200
1000	102				12.5 X 13.5 0.07 1.0 5.0 750	16 X 16.5 0.05 0.50 2.5 1200	16 X 21.5 0.05 0.40 2.0 1600
1200	122				16 X 16.5 0.05 0.50 2.5 1200	18 X 16.5 0.05 0.50 2.5 1400	18 X 21.5 0.04 0.32 1.6 1900
1500	152				16 X 16.5 0.05 0.50 2.5 1200	●16 X 21.5 0.04 0.32 1.6 1900 18 X 16.5 0.05 0.50 2.5 1400	
1800	182				16 X 16.5 0.05 0.50 2.5 1200	18 X 21.5 0.035 0.28 1.4 2200	
2200	222				18 X 16.5 0.05 0.50 2.5 1400	18 X 21.5 0.035 0.28 1.4 2200	
2700	272				16 X 21.5 0.04 0.32 1.6 1900		
3300	332				18 X 21.5 0.035 0.28 1.4 2200		

MAX. ESR (Ω) at 20°C / -40°C 100kHz, Rated ripple current(mArms) at 135°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.