

# ALUMINUM ELECTROLYTIC CAPACITORS

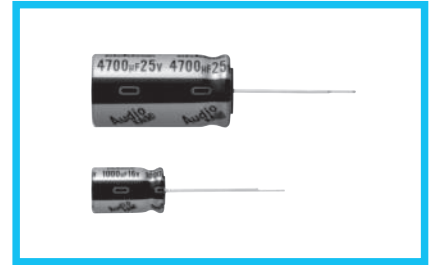
# UKA

For High Grade Audio Equipment,  
Wide Temperature Range.



**UKA**

High Grade  
**UKT**

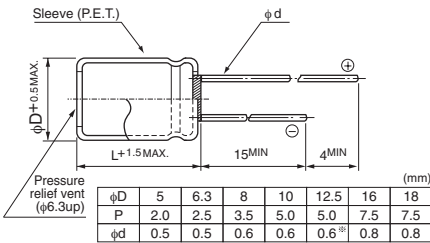


- 105°C high quality capacitors for audio equipment.
- Selected materials to create superior acoustic sound.
- Compliant to the RoHS directive (2011/65/EU, (EU)2015/863).
- AEC-Q200 compliant. Please contact us for details.

## Specifications

Item	Performance Characteristics																					
Category Temperature Range	- 55 to +105°C																					
Rated Voltage Range	6.3 to 50V																					
Rated Capacitance Range	22 to 22000 μF																					
Capacitance Tolerance	±20% at 120Hz, 20°C																					
Leakage Current	After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA), whichever is greater. After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater.																					
Tangent of loss angle (tan δ)	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>tan δ (MAX.)</td> <td>0.30</td> <td>0.26</td> <td>0.22</td> <td>0.18</td> <td>0.16</td> <td>0.14</td> </tr> </table> <p>Measurement frequency : 120Hz at 20°C For capacitors with more than 1000μF, add 0.02 for every increase of 1000μF.</p>	Rated voltage (V)	6.3	10	16	25	35	50	tan δ (MAX.)	0.30	0.26	0.22	0.18	0.16	0.14							
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Stability at Low Temperature	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>Impedance ratio (MAX.)</td> <td>Z-25°C / Z+20°C</td> <td>5</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> </tr> <tr> <td></td> <td>Z-40°C / Z+20°C</td> <td>10</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> </tr> </table> <p>Measurement frequency : 120Hz</p>	Rated voltage (V)	6.3	10	16	25	35	50	Impedance ratio (MAX.)	Z-25°C / Z+20°C	5	4	3	2	2		Z-40°C / Z+20°C	10	8	6	4	3
Rated voltage (V)	6.3	10	16	25	35	50																
Impedance ratio (MAX.)	Z-25°C / Z+20°C	5	4	3	2	2																
	Z-40°C / Z+20°C	10	8	6	4	3																
Endurance	<p>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 105°C.</p> <table border="1"> <tr> <td>Capacitance Change</td> <td>Within 20% of the initial capacitance value</td> </tr> <tr> <td>tan δ</td> <td>200% or less than the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Less than or equal to the initial specified value</td> </tr> </table>	Capacitance Change	Within 20% of the initial capacitance value	tan δ	200% or less than the initial specified value	Leakage current	Less than or equal to the initial specified value															
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Shelf Life	After storing the capacitors under no load at 105°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.																					
Marking	Printed with black color letter on pearl blue sleeve.																					

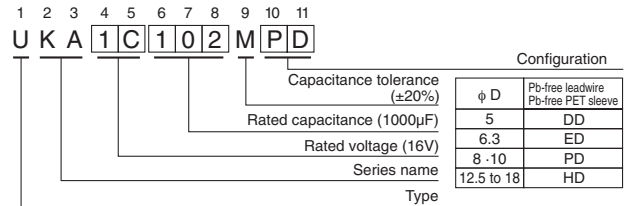
## Radial Lead Type



※ In case L>25 for φ12.5 (D) case sizes, lead diameter φ0.8 (d) will be applied.

- Please refer to the Guidelines for Aluminum Electrolytic Capacitors for end seal configuration information.

## Type numbering system (Example : 16V 1000μF)



## Frequency coefficient of rated ripple current

Cap.(μF)	Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
22 to 47		0.75	1.00	1.35	1.57	2.00
100 to 470		0.80	1.00	1.23	1.34	1.50
1000 to 22000		0.85	1.00	1.10	1.13	1.15

● Dimension table in next page.

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## ■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance ( $\mu\text{F}$ )	Case Size $\phi\text{D}\times\text{L}$ (mm)	tan $\delta$	Leakage Current ( $\mu\text{A}$ )		Rated Ripple (mArms) (105°C/120Hz)	Part Number
				at 20°C after 1 minute	at 20°C after 2 minutes		
6.3 (0J)	22	5×11	0.30	4.158	3	45	UKA0J220MDD
	33	5×11	0.30	6.237	3	55	UKA0J330MDD
	47	5×11	0.30	8.883	3	65	UKA0J470MDD
	100	5×11	0.30	18.9	6.3	95	UKA0J101MDD
	220	6.3×11	0.30	41.58	13.86	160	UKA0J221MED
	330	6.3×11	0.30	62.37	20.79	195	UKA0J331MED
	470	8×11.5	0.30	88.83	29.61	270	UKA0J471MPD
	1000	10×12.5	0.30	189	63	420	UKA0J102MPD
	2200	10×20	0.32	415.8	138.6	710	UKA0J222MPD
	3300	12.5×20	0.34	623.7	207.9	910	UKA0J332MHD
	4700	12.5×25	0.36	888.3	296.1	1120	UKA0J472MHD
	6800	12.5×35.5	0.40	1285.2	428.4	1360	UKA0J682MHD
	10000	12.5×40	0.48	1890	630	1650	UKA0J103MHD
	15000	16×35.5	0.58	2835	945	2010	UKA0J153MHD
22000	18×40	0.72	4158	1386	2350	UKA0J223MHD	
10 (1A)	22	5×11	0.26	6.6	3	45	UKA1A220MDD
	33	5×11	0.26	9.9	3.3	58	UKA1A330MDD
	47	5×11	0.26	14.1	4.7	68	UKA1A470MDD
	100	5×11	0.26	30	10	105	UKA1A101MDD
	220	6.3×11	0.26	66	22	175	UKA1A221MED
	330	8×11.5	0.26	99	33	240	UKA1A331MPD
	470	8×11.5	0.26	141	47	280	UKA1A471MPD
	1000	10×16	0.26	300	100	500	UKA1A102MPD
	2200	12.5×20	0.28	660	220	810	UKA1A222MHD
	3300	12.5×25	0.30	990	330	1050	UKA1A332MHD
	4700	12.5×35.5	0.32	1410	470	1300	UKA1A472MHD
	6800	12.5×40	0.36	2040	680	1570	UKA1A682MHD
	10000	16×35.5	0.44	3000	1000	1890	UKA1A103MHD
15000	18×40	0.54	4500	1500	2400	UKA1A153MHD	
16 (1C)	22	5×11	0.22	10.56	3.52	54	UKA1C220MDD
	33	5×11	0.22	15.84	5.28	65	UKA1C330MDD
	47	5×11	0.22	22.56	7.52	79	UKA1C470MDD
	100	5×11	0.22	48	16	115	UKA1C101MDD
	220	6.3×11	0.22	105.6	35.2	190	UKA1C221MED
	330	8×11.5	0.22	158.4	52.8	265	UKA1C331MPD
	470	8×11.5	0.22	225.6	75.2	315	UKA1C471MPD
	1000	10×16	0.22	480	160	560	UKA1C102MPD
	2200	12.5×20	0.24	1056	352	920	UKA1C222MHD
	3300	12.5×31.5	0.26	1584	528	1270	UKA1C332MHD
	4700	12.5×35.5	0.28	2256	752	1480	UKA1C472MHD
	6800	16×31.5	0.32	3264	1088	1780	UKA1C682MHD
	10000	18×35.5	0.40	4800	1600	2060	UKA1C103MHD

For cut leads, formed leads or taped parts, please add the appropriate code after the size code (12th digit).  
If there is no size code in the part number, please add size code "1" and then add the appropriate code.

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## ■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance ( $\mu$ F)	Case Size $\phi$ D×L (mm)	tan $\delta$	Leakage Current ( $\mu$ A)		Rated Ripple (mArms) (105°C/120Hz)	Part Number
				at 20°C after 1 minute	at 20°C after 2 minutes		
25 (1E)	22	5×11	0.18	16.5	5.5	58	UKA1E220MDD
	33	5×11	0.18	24.75	8.25	68	UKA1E330MDD
	47	5×11	0.18	35.25	11.75	83	UKA1E470MDD
	100	6.3×11	0.18	75	25	140	UKA1E101MED
	220	8×11.5	0.18	165	55	240	UKA1E221MPD
	330	8×11.5	0.18	247.5	82.5	290	UKA1E331MPD
	470	10×12.5	0.18	352.5	117.5	380	UKA1E471MPD
	1000	10×20	0.18	750	250	680	UKA1E102MPD
	2200	12.5×31.5	0.20	1650	550	1200	UKA1E222MHD
	3300	12.5×35.5	0.22	2475	825	1400	UKA1E332MHD
	4700	16×31.5	0.24	3525	1175	1710	UKA1E472MHD
6800	18×35.5	0.28	5100	1700	2040	UKA1E682MHD	
35 (1V)	22	5×11	0.16	23.1	7.7	61	UKA1V220MDD
	33	5×11	0.16	34.65	11.55	75	UKA1V330MDD
	47	5×11	0.16	49.35	16.45	93	UKA1V470MDD
	100	6.3×11	0.16	105	35	150	UKA1V101MED
	220	8×11.5	0.16	231	77	260	UKA1V221MPD
	330	10×12.5	0.16	346.5	115.5	350	UKA1V331MPD
	470	10×16	0.16	493.5	164.5	460	UKA1V471MPD
	1000	12.5×25	0.16	1050	350	860	UKA1V102MHD
	2200	12.5×40	0.18	2310	770	1260	UKA1V222MHD
	3300	16×35.5	0.20	3465	1155	1610	UKA1V332MHD
	4700	18×35.5	0.22	4935	1645	1910	UKA1V472MHD
50 (1H)	22	5×11	0.14	33	11	68	UKA1H220MDD
	33	5×11	0.14	49.5	16.5	90	UKA1H330MDD
	47	6.3×11	0.14	70.5	23.5	115	UKA1H470MED
	100	8×11.5	0.14	150	50	190	UKA1H101MPD
	220	10×12.5	0.14	330	110	300	UKA1H221MPD
	330	10×16	0.14	495	165	410	UKA1H331MPD
	470	12.5×20	0.14	705	235	530	UKA1H471MHD
	1000	12.5×31.5	0.14	1500	500	1040	UKA1H102MHD
	2200	16×35.5	0.16	3300	1100	1470	UKA1H222MHD
	3300	18×35.5	0.18	4950	1650	1770	UKA1H332MHD

For cut leads, formed leads or taped parts, please add the appropriate code after the size code (12th digit).  
If there is no size code in the part number, please add size code "1" and then add the appropriate code.

- For formed lead or taped product specifications and minimum order quantity, please refer to the Guidelines for Aluminum Electrolytic Capacitors.