ALUMINUM ELECTROLYTIC CAPACITORS

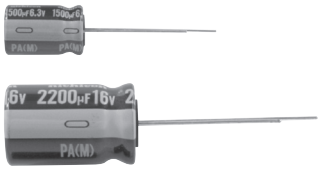
nichicon

UPA

Miniature Sized, Low Impedance, High Reliability For Switching Power Supplies

Smaller Low Impedance Long Life

- Lower impedance than UPW.
- Smaller case size and high ripple current.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).



UPA ← Low Impedance → UPW

■Specifications

Item	Performance Characteristics						
Category Temperature Range	−55 to +105˚C						
Rated Voltage Range	6.3 to 35V						
Rated Capacitance Range	180 to 10000μF						
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.						
Tangent of loss angle (tan δ)	Rated voltage (V)	6.3	10	16	25	35	120Hz 20˚C
	tan δ (max.)	0.22	0.19	0.16	0.14	0.12	
	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.						
Stability at Low Temperature	Rated voltage (V)	6.3	10	16	25	35	120Hz
	Impedance ratio (max.) Z(−55˚C) / Z(+20˚C)	3	3	3	3	3	
Endurance	The specifications listed below shall be met when the capacitors are restored to 20˚C after D.C. bias plus rated ripple current is applied at 105˚C for the condition listed at right.The peak voltage shall not exceed the rated voltage.						

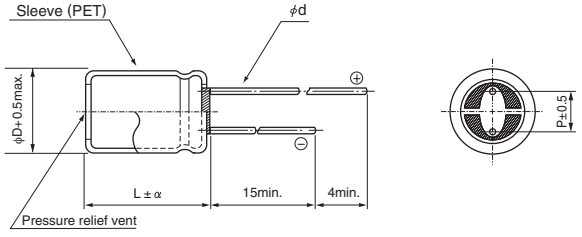
Rated Voltage \ φD(mm)	φ8	φ10	≧φ12.5
6.3～35V	3000hrs.	4000hrs.	5000hrs.

Capacitance change	Within ± 20% of the initial capacitance value (6.3V, 10V : ±30%)
tan δ	200% or less than the initial specified value (6.3V, 10V : 300%)
Leakage current	Less than or equal to the initial specified value

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 white color letter on dark brown sleeve.

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

■Radial Lead Type



α	
	(L < 20) 1.5
	(L ≥ 20) 2.0

(mm)

φD	8	10	12.5	16	18
P	3.5	5.0	5.0	7.5	7.5
φd	0.6	0.6	*0.6	0.8	0.8

※ : In case L > 25 for the φ12.5 dia. unit, lead dia. φ d = 0.8mm.

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

Type numbering system (Example : 10V 470μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	P	A	1	A	4	7	1	M	P	D	

Size code
Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (470μF)
Rated voltage (10V)
Series name
Type

※ Configuration

φD	Pb-free leadwire Pb-free PET sleeve
8 · 10	PD
12.5 to 18	HD

● Frequency coefficient of rated ripple current

Cap. (μF) \ Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
180 to 330	0.55	0.65	0.75	0.85	1.00
390 to 1000	0.70	0.75	0.80	0.90	1.00
1200 to 10000	0.80	0.85	0.90	0.95	1.00

● Dimension table in next page.

UPA

■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μF)	Case Size φD×L(mm)	tan δ	Leakage Current (μA) (at 20℃ after 1 minute)	Impedance(Ω) max. 20℃/100kHz	Impedance(Ω) max. −10℃/100kHz	Rated Ripple (mArms) (105℃/100kHz)	Part Number
6.3 (0J)	560	8×11.5	0.22	105.84	0.090	0.18	630	UPA0J561MPD
	680	8×11.5	0.22	128.52	0.090	0.18	630	UPA0J681MPD
	1000	8×15	0.22	189	0.062	0.124	860	UPA0J102MPD
	1000	10×12.5	0.22	189	0.063	0.126	900	UPA0J102MPD6
	1200	10×12.5	0.22	226.8	0.063	0.126	900	UPA0J122MPD
	1200	10×16	0.22	226.8	0.049	0.098	1240	UPA0J122MPD3
	1500	8×20	0.22	283.5	0.044	0.088	1220	UPA0J152MPD
	1500	10×16	0.22	283.5	0.049	0.098	1240	UPA0J152MPD6
	1500	10×20	0.22	283.5	0.035	0.070	1490	UPA0J152MPD3
	2200	10×20	0.24	415.8	0.035	0.070	1490	UPA0J222MPD
	2200	10×25	0.24	415.8	0.033	0.066	1680	UPA0J222MPD3
	2700	10×25	0.24	510.3	0.033	0.066	1680	UPA0J272MPD
	3300	12.5×20	0.26	623.7	0.029	0.058	1890	UPA0J332MHD
	3900	12.5×25	0.26	737.1	0.022	0.044	2280	UPA0J392MHD
	4700	12.5×25	0.28	888.3	0.022	0.044	2280	UPA0J472MHD
	5600	12.5×30.5	0.30	1058.4	0.018	0.036	2720	UPA0J562MHD
	5600	16×20	0.30	1058.4	0.026	0.052	2330	UPA0J562MHD6
	6800	12.5×35.5	0.32	1285.2	0.016	0.032	2940	UPA0J682MHD
	8200	16×25	0.36	1549.8	0.019	0.038	2760	UPA0J822MHD
	8200	18×20	0.36	1549.8	0.025	0.050	2640	UPA0J822MHD6
	10000	16×30.5	0.40	1890	0.017	0.034	2810	UPA0J103MHD
	10000	18×25	0.40	1890	0.018	0.036	2850	UPA0J103MHD6
10 (1A)	470	8×11.5	0.19	141	0.090	0.18	630	UPA1A471MPD
	560	8×11.5	0.19	168	0.090	0.18	630	UPA1A561MPD
	820	8×15	0.19	246	0.062	0.124	860	UPA1A821MPD
	820	10×12.5	0.19	246	0.063	0.126	900	UPA1A821MPD6
	1000	8×20	0.19	300	0.044	0.088	1220	UPA1A102MPD
	1000	10×12.5	0.19	300	0.063	0.126	900	UPA1A102MPD6
	1000	10×16	0.19	300	0.049	0.098	1240	UPA1A102MPD3
	1200	8×20	0.19	360	0.044	0.088	1220	UPA1A122MPD
	1200	10×16	0.19	360	0.049	0.098	1240	UPA1A122MPD6
	1500	10×20	0.19	450	0.035	0.070	1490	UPA1A152MPD
	1800	10×20	0.19	540	0.035	0.070	1490	UPA1A182MPD
	1800	10×25	0.19	540	0.033	0.066	1680	UPA1A182MPD6
	2200	10×25	0.21	660	0.033	0.066	1680	UPA1A222MPD
	2200	12.5×20	0.21	660	0.029	0.058	1890	UPA1A222MHD3
	2700	12.5×20	0.21	810	0.029	0.058	1890	UPA1A272MHD
	3300	12.5×25	0.23	990	0.022	0.044	2280	UPA1A332MHD
	3900	12.5×25	0.23	1170	0.022	0.044	2280	UPA1A392MHD
	4700	12.5×30.5	0.25	1410	0.018	0.036	2720	UPA1A472MHD
	4700	16×20	0.25	1410	0.026	0.052	2330	UPA1A472MHD6
	5600	12.5×35.5	0.27	1680	0.016	0.032	2940	UPA1A562MHD
	6800	16×25	0.29	2040	0.019	0.038	2760	UPA1A682MHD
	8200	16×30.5	0.33	2460	0.017	0.034	2810	UPA1A822MHD
	8200	18×25	0.33	2460	0.018	0.036	2850	UPA1A822MHD6

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.

UPA

■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μF)	Case Size φD×L(mm)	tan δ	Leakage Current (μA) (at 20℃ after 1 minute)	Impedance(Ω) max.		Rated Ripple (mArms) (105℃/100kHz)	Part Number
					20℃/ 100kHz	−10℃/ 100kHz		
16 (1C)	330	8×11.5	0.16	158.4	0.090	0.18	630	UPA1C331MPD
	390	8×11.5	0.16	187.2	0.090	0.18	630	UPA1C391MPD
	470	10×12.5	0.16	225.6	0.063	0.126	900	UPA1C471MPD
	680	8×15	0.16	326.4	0.062	0.124	860	UPA1C681MPD
	680	10×12.5	0.16	326.4	0.063	0.126	900	UPA1C681MPD6
	820	8×20	0.16	393.6	0.044	0.088	1220	UPA1C821MPD
	820	10×16	0.16	393.6	0.049	0.098	1240	UPA1C821MPD6
	1000	10×16	0.16	480	0.049	0.098	1240	UPA1C102MPD
	1000	10×20	0.16	480	0.035	0.070	1490	UPA1C102MPD3
	1200	10×20	0.16	576	0.035	0.070	1490	UPA1C122MPD
	1500	10×25	0.16	720	0.033	0.066	1680	UPA1C152MPD
	2200	12.5×20	0.18	1056	0.029	0.058	1890	UPA1C222MHD
	2200	12.5×25	0.18	1056	0.022	0.044	2280	UPA1C222MHD3
	2700	12.5×25	0.18	1296	0.022	0.044	2280	UPA1C272MHD
	3300	12.5×30.5	0.20	1584	0.018	0.036	2720	UPA1C332MHD
	3300	16×20	0.20	1584	0.026	0.052	2330	UPA1C332MHD6
	3900	12.5×35.5	0.20	1872	0.016	0.032	2940	UPA1C392MHD
	4700	16×25	0.22	2256	0.019	0.038	2760	UPA1C472MHD
	4700	18×20	0.22	2256	0.025	0.050	2640	UPA1C472MHD6
	5600	16×30.5	0.24	2688	0.017	0.035	2810	UPA1C562MHD
	5600	18×25	0.24	2688	0.018	0.036	2850	UPA1C562MHD6
	6800	18×25	0.26	3264	0.018	0.036	2850	UPA1C682MHD
25 (1E)	270	8×11.5	0.14	202.5	0.090	0.18	630	UPA1E271MPD
	330	8×11.5	0.14	247.5	0.090	0.18	630	UPA1E331MPD
	390	8×15	0.14	292.5	0.062	0.124	860	UPA1E391MPD
	470	8×15	0.14	352.5	0.062	0.124	860	UPA1E471MPD
	470	10×12.5	0.14	352.5	0.063	0.126	900	UPA1E471MPD6
	560	8×20	0.14	420	0.044	0.088	1220	UPA1E561MPD
	560	10×16	0.14	420	0.049	0.098	1240	UPA1E561MPD6
	680	10×16	0.14	510	0.049	0.098	1240	UPA1E681MPD
	820	10×20	0.14	615	0.035	0.070	1490	UPA1E821MPD
	1000	10×25	0.14	750	0.033	0.066	1680	UPA1E102MPD
	1000	12.5×20	0.14	750	0.029	0.058	1890	UPA1E102MHD3
	1200	12.5×20	0.14	900	0.029	0.058	1890	UPA1E122MHD
	1800	12.5×25	0.14	1350	0.022	0.044	2280	UPA1E182MHD
	2200	12.5×30.5	0.16	1650	0.018	0.036	2720	UPA1E222MHD
	2200	16×20	0.16	1650	0.026	0.052	2330	UPA1E222MHD6
	2700	12.5×35.5	0.16	2025	0.016	0.032	2940	UPA1E272MHD
	3300	16×25	0.18	2475	0.019	0.038	2760	UPA1E332MHD
	3300	18×20	0.18	2475	0.025	0.050	2640	UPA1E332MHD6
	4700	18×25	0.20	3525	0.018	0.036	2850	UPA1E472MHD

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.

UPA

■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μF)	Case Size φD×L (mm)	tan δ	Leakage Current (μA) (at 20℃ after 1 minute)	Impedance (Ω) max.		Rated Ripple (mArms) (105℃/100kHz)	Part Number
					20℃/ 100kHz	−10℃/ 100kHz		
35 (1V)	180	8×11.5	0.12	189	0.090	0.18	630	UPA1V181MPD
	270	8×15	0.12	283.5	0.062	0.124	860	UPA1V271MPD
	270	10×12.5	0.12	283.5	0.063	0.126	900	UPA1V271MPD6
	390	8×20	0.12	409.5	0.044	0.088	1220	UPA1V391MPD
	390	10×16	0.12	409.5	0.049	0.098	1240	UPA1V391MPD6
	560	10×20	0.12	588	0.035	0.070	1490	UPA1V561MPD
	680	10×25	0.12	714	0.033	0.066	1680	UPA1V681MPD
	820	12.5×20	0.12	861	0.029	0.058	1890	UPA1V821MHD
	1000	12.5×20	0.12	1050	0.029	0.058	1890	UPA1V102MHD
	1200	12.5×25	0.12	1260	0.022	0.044	2280	UPA1V122MHD
	1500	12.5×30.5	0.12	1575	0.018	0.036	2720	UPA1V152MHD
	1500	16×20	0.12	1575	0.026	0.052	2330	UPA1V152MHD6
	1800	12.5×35.5	0.12	1890	0.016	0.032	2940	UPA1V182MHD
	1800	16×20	0.12	1890	0.026	0.052	2330	UPA1V182MHD6
	2200	16×25	0.14	2310	0.019	0.038	2760	UPA1V222MHD
	2200	18×20	0.14	2310	0.025	0.050	2640	UPA1V222MHD6
	2700	16×30.5	0.14	2835	0.017	0.035	2810	UPA1V272MHD
	2700	18×25	0.14	2835	0.018	0.036	2850	UPA1V272MHD6
	3300	18×30.5	0.16	3465	0.016	0.032	2910	UPA1V332MHD

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.