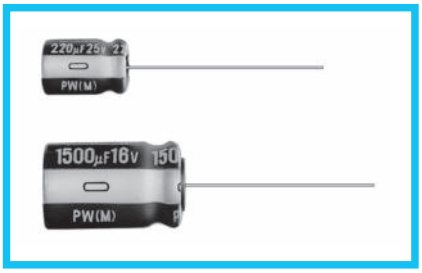
ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

UPW

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

Smaller | Low Impedance | Long Life | Anti-Solvent Feature (Through 100V only)



- Smaller case size and lower impedance than UPM.
- Low impedance and high reliability withstanding 2000 hours to 8000 hours.
- Capacitance ranges available based on the numerical values in E12 series under JIS.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).
- AEC-Q200 compliant. Please contact us for details.

UPM → Smaller
UPA → Low Impedance → UPW

■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +105˚C (6.3 to 100V), −40 to + 105˚C (160 to 400V), −25 to +105˚C (450V)
Rated Voltage Range	6.3 to 450V
Rated Capacitance Range	0.47 to 15000µF
Capacitance Tolerance	±20% at 120Hz, 20˚C

Leakage Current

Rated voltage (V)	6.3 to 100	160 to 450
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 1 minute's application of rated voltage at 20°C, CV ≦ 1000 : I = 0.1CV+40 (µA) or less. CV > 1000 : I = 0.04CV+100 (µA) or less.

Tangent of loss angle (tan δ)

For capacitance of more than 1000µF, add 0.02 for every increase of 1000µF. Measurement frequency : 120Hz at 20˚C

Rated voltage (V)	6.3	10	16	25	35	50	63	100	160 to 250	315 · 350	400 · 450
tan δ (MAX.)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.15	0.20	0.25

Stability at Low Temperature

120Hz

Rated voltage (V)		6.3 · 10	16 · 25	35 · 50	63 · 100	160 · 200	250	315 · 350	400	450
Impedance ratio (MAX.)	Z−25˚C / Z+20˚C	—	—	—	—	3	3	4	6	15
	Z−40˚C / Z+20˚C	—	—	—	—	4	6	8	10	—
	Z−55˚C / Z+20˚C	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)	φ5,φ6.3	φ8	φ10	φ12.5	≧φ16
6.3～450V	2000hrs.	3000hrs.	5000hrs.	7000hrs.	8000hrs.

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

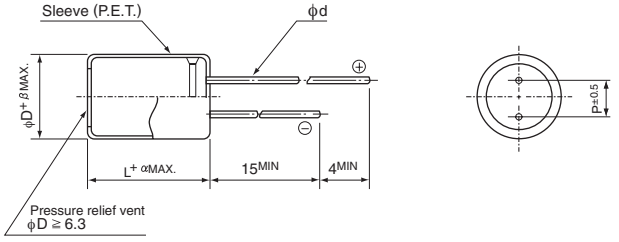
Shelf Life

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.

■Radial Lead Type



α	
	(L < 20) 1.5
	(L ≧ 20) 2.0

(mm)

φD	5	6.3	8	10	12.5	16	18	20	22	25
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0	12.5
φd	0.5	0.5	0.6	0.6	0.6 ※0.8	0.8	0.8	1.0	1.0	1.0
β	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0

※: Applied to L>25 products

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

Type numbering system (Example : 10V 680µF)

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

Size code
Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (680µF)
Rated voltage (10V)
Series name
Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5	DD
6.3	ED
8 · 10	PD
12.5 to 18	HD
20 to 25	RD

● Frequency coefficient of rated ripple current

V	Cap. (µF) \ Frequency	50Hz	120Hz	300Hz	1kHz	10kHz or more
6.3 to 100	2.2 to 56	0.20	0.30	0.50	0.80	1.00
	68 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 15000	0.80	0.85	0.90	0.95	1.00
160 to 450	0.47 to 220	0.80	1.00	1.25	1.40	1.60
	330 to 470	0.90	1.00	1.10	1.13	1.15

●Dimension table in next page.

UPW

■ 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)		Part Number
					20℃/ 100kHz	−10℃/ 100kHz	105℃/ 100kHz	105℃/ 120Hz	
6.3 (0J)	22	5×11	0.22	4.158	0.60	1.20	180	—	UPW0J220MDD
	33	5×11	0.22	6.237	0.60	1.20	180	—	UPW0J330MDD
	47	5×11	0.22	8.883	0.60	1.20	180	—	UPW0J470MDD
	100	5×11	0.22	18.9	0.60	1.20	180	—	UPW0J101MDD
	150	6.3×11	0.22	28.35	0.25	0.50	290	—	UPW0J151MED
	220	6.3×11	0.22	41.58	0.25	0.50	290	—	UPW0J221MED
	330	6.3×11	0.22	62.37	0.25	0.50	290	—	UPW0J331MED
	330	6.3×15	0.22	62.37	0.23	0.46	430	—	UPW0J331MED6
	470	8×11.5	0.22	88.83	0.117	0.234	555	—	UPW0J471MPD
	560	8×11.5	0.22	105.84	0.117	0.234	555	—	UPW0J561MPD
	680	10×12.5	0.22	128.52	0.090	0.18	755	—	UPW0J681MPD
	820	8×15	0.22	154.98	0.085	0.17	730	—	UPW0J821MPD
	820	10×12.5	0.22	154.98	0.090	0.18	755	—	UPW0J821MPD6
	1000	10×12.5	0.22	189	0.090	0.18	755	—	UPW0J102MPD
	1200	8×20	0.22	226.8	0.065	0.13	995	—	UPW0J122MPD
	1200	10×16	0.22	226.8	0.068	0.136	1050	—	UPW0J122MPD6
	1500	10×20	0.22	283.5	0.052	0.104	1220	—	UPW0J152MPD
	2200	12.5×20	0.24	415.8	0.038	0.076	1655	—	UPW0J222MHD
	2200	10×25	0.24	415.8	0.045	0.090	1440	—	UPW0J222MPD6
	2700	10×31.5	0.24	510.3	0.035	0.070	1815	—	UPW0J272MPD
	3300	12.5×20	0.26	623.7	0.038	0.076	1655	—	UPW0J332MHD
	3900	12.5×25	0.26	737.1	0.030	0.060	1945	—	UPW0J392MHD
	4700	16×25	0.28	888.3	0.022	0.044	2555	—	UPW0J472MHD
	4700	12.5×31.5	0.28	888.3	0.025	0.050	2310	—	UPW0J472MHD6
	5600	12.5×35.5	0.30	1058.4	0.022	0.044	2510	—	UPW0J562MHD
	5600	16×20	0.30	1058.4	0.029	0.058	2210	—	UPW0J562MHD6
	6800	16×25	0.32	1285.2	0.022	0.044	2560	—	UPW0J682MHD
	6800	18×20	0.32	1285.2	0.028	0.056	2490	—	UPW0J682MHD6
	8200	16×31.5	0.36	1549.8	0.018	0.036	3010	—	UPW0J822MHD
	10000	16×31.5	0.40	1890	0.016	0.032	3150	—	UPW0J103MHD
	10000	18×25	0.40	1890	0.020	0.040	2740	—	UPW0J103MHD6
	12000	18×31.5	0.44	2268	0.016	0.032	3635	—	UPW0J123MHD
	15000	18×35.5	0.50	2835	0.015	0.030	3680	—	UPW0J153MHD
10 (1A)	22	5×11	0.19	6.6	0.60	1.20	180	—	UPW1A220MDD
	33	5×11	0.19	9.9	0.60	1.20	180	—	UPW1A330MDD
	47	5×11	0.19	14.1	0.60	1.20	180	—	UPW1A470MDD
	82	5×11	0.19	24.6	0.60	1.20	180	—	UPW1A820MDD
	100	5×11	0.19	30	0.60	1.20	180	—	UPW1A101MDD
	150	6.3×11	0.19	45	0.25	0.50	290	—	UPW1A151MED
	180	6.3×11	0.19	54	0.25	0.50	290	—	UPW1A181MED
	220	6.3×11	0.19	66	0.25	0.50	290	—	UPW1A221MED
	220	6.3×15	0.19	66	0.23	0.46	430	—	UPW1A221MED6
	330	8×11.5	0.19	99	0.117	0.234	555	—	UPW1A331MPD
	470	8×11.5	0.19	141	0.117	0.234	555	—	UPW1A471MPD
	680	10×12.5	0.19	204	0.090	0.18	760	—	UPW1A681MPD
	680	8×15	0.19	204	0.085	0.17	730	—	UPW1A681MPD6
	1000	10×16	0.19	300	0.068	0.136	1050	—	UPW1A102MPD
	1000	8×20	0.19	300	0.065	0.13	995	—	UPW1A102MPD6
	1200	10×20	0.19	360	0.052	0.104	1220	—	UPW1A122MPD
	1500	10×20	0.19	450	0.052	0.104	1220	—	UPW1A152MPD
	1500	10×25	0.19	450	0.045	0.090	1440	—	UPW1A152MPD6
	2200	12.5×20	0.21	660	0.038	0.076	1655	—	UPW1A222MHD

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.

UPW

■ 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)		Part Number
					20℃/ 100kHz	−10℃/ 100kHz	105℃/ 100kHz	105℃/ 120Hz	
10 (1A)	2200	10×31.5	0.21	660	0.035	0.070	1815	—	UPW1A222MPD6
	2700	12.5×25	0.21	810	0.030	0.060	1945	—	UPW1A272MHD
	3300	12.5×25	0.23	990	0.030	0.060	1950	—	UPW1A332MHD
	3300	12.5×31.5	0.23	990	0.025	0.050	2310	—	UPW1A332MHD6
	3900	12.5×35.5	0.23	1170	0.022	0.044	2510	—	UPW1A392MHD
	3900	16×20	0.23	1170	0.029	0.058	2210	—	UPW1A392MHD6
	4700	16×25	0.25	1410	0.022	0.044	2555	—	UPW1A472MHD
	5600	16×25	0.27	1680	0.022	0.044	2560	—	UPW1A562MHD
	5600	18×20	0.27	1680	0.028	0.056	2490	—	UPW1A562MHD6
	6800	16×31.5	0.29	2040	0.018	0.036	3010	—	UPW1A682MHD
	6800	18×25	0.29	2040	0.020	0.040	2740	—	UPW1A682MHD6
	8200	16×35.5	0.33	2460	0.016	0.032	3150	—	UPW1A822MHD
	8200	18×31.5	0.33	2460	0.016	0.032	3635	—	UPW1A822MHD6
	10000	18×35.5	0.37	3000	0.015	0.030	3680	—	UPW1A103MHD
	15000	18×40	0.47	4500	0.014	0.028	3800	—	UPW1A153MHD
16 (1C)	10	5×11	0.16	4.8	0.60	1.20	180	—	UPW1C100MDD
	22	5×11	0.16	10.56	0.60	1.20	180	—	UPW1C220MDD
	33	5×11	0.16	15.84	0.60	1.20	180	—	UPW1C330MDD
	47	5×11	0.16	22.56	0.60	1.20	180	—	UPW1C470MDD
	56	5×11	0.16	26.88	0.60	1.20	180	—	UPW1C560MDD
	100	6.3×11	0.16	48	0.25	0.50	290	—	UPW1C101MED
	120	6.3×11	0.16	57.6	0.25	0.50	290	—	UPW1C121MED
	150	6.3×11	0.16	72	0.25	0.50	290	—	UPW1C151MED
	180	6.3×15	0.16	86.4	0.23	0.46	430	—	UPW1C181MED
	220	8×11.5	0.16	105.6	0.117	0.234	555	—	UPW1C221MPD
	330	8×11.5	0.16	158.4	0.117	0.234	555	—	UPW1C331MPD
	470	10×12.5	0.16	225.6	0.090	0.18	760	—	UPW1C471MPD
	470	8×15	0.16	225.6	0.085	0.17	730	—	UPW1C471MPD6
	680	10×16	0.16	326.4	0.068	0.136	1050	—	UPW1C681MPD
	680	8×20	0.16	326.4	0.065	0.13	995	—	UPW1C681MPD6
	820	10×20	0.16	393.6	0.052	0.104	1220	—	UPW1C821MPD
	1000	10×20	0.16	480	0.052	0.104	1220	—	UPW1C102MPD
	1200	10×25	0.16	576	0.045	0.090	1440	—	UPW1C122MPD
	1500	12.5×20	0.16	720	0.038	0.076	1655	—	UPW1C152MHD
	1500	10×31.5	0.16	720	0.035	0.070	1815	—	UPW1C152MPD6
	2200	12.5×25	0.18	1056	0.030	0.060	1945	—	UPW1C222MHD
	2700	12.5×31.5	0.18	1296	0.025	0.050	2310	—	UPW1C272MHD
	2700	16×20	0.18	1296	0.029	0.058	2210	—	UPW1C272MHD6
	3300	16×25	0.20	1584	0.022	0.044	2555	—	UPW1C332MHD
	3300	12.5×35.5	0.20	1584	0.022	0.044	2510	—	UPW1C332MHD6
	3900	16×25	0.20	1872	0.022	0.044	2560	—	UPW1C392MHD
	3900	18×20	0.20	1872	0.028	0.056	2490	—	UPW1C392MHD6
	4700	16×31.5	0.22	2256	0.018	0.036	3010	—	UPW1C472MHD
	4700	18×25	0.22	2256	0.020	0.040	2740	—	UPW1C472MHD6
	5600	16×35.5	0.24	2688	0.016	0.032	3150	—	UPW1C562MHD
	5600	18×31.5	0.24	2688	0.016	0.032	3635	—	UPW1C562MHD6
	6800	18×35.5	0.26	3264	0.015	0.030	3680	—	UPW1C682MHD
	8200	18×35.5	0.30	3936	0.015	0.030	3680	—	UPW1C822MHD
	10000	18×40	0.34	4800	0.014	0.028	3800	—	UPW1C103MHD
25 (1E)	4.7	5×11	0.14	4	0.60	1.20	180	—	UPW1E4R7MDD
	10	5×11	0.14	7.5	0.60	1.20	180	—	UPW1E100MDD
	22	5×11	0.14	16.5	0.60	1.20	180	—	UPW1E220MDD

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.

UPW

■ 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)		Part Number
					20℃/ 100kHz	−10℃/ 100kHz	105℃/ 100kHz	105℃/ 120Hz	
25 (1E)	33	5×11	0.14	24.75	0.60	1.20	180	—	UPW1E330MDD
	39	5×11	0.14	29.25	0.60	1.20	180	—	UPW1E390MDD
	47	5×11	0.14	35.25	0.60	1.20	180	—	UPW1E470MDD
	82	6.3×11	0.14	61.5	0.25	0.50	290	—	UPW1E820MED
	100	6.3×11	0.14	75	0.25	0.50	290	—	UPW1E101MED
	120	6.3×15	0.14	90	0.23	0.46	430	—	UPW1E121MED
	150	8×11.5	0.14	112.5	0.117	0.234	555	—	UPW1E151MPD
	220	8×11.5	0.14	165	0.117	0.234	555	—	UPW1E221MPD
	330	10×12.5	0.14	247.5	0.090	0.18	760	—	UPW1E331MPD
	330	8×15	0.14	247.5	0.085	0.17	730	—	UPW1E331MPD6
	470	10×16	0.14	352.5	0.068	0.136	1050	—	UPW1E471MPD
	470	8×20	0.14	352.5	0.065	0.13	995	—	UPW1E471MPD6
	560	10×20	0.14	420	0.052	0.104	1220	—	UPW1E561MPD
	680	10×20	0.14	510	0.052	0.104	1220	—	UPW1E681MPD
	820	10×25	0.14	615	0.045	0.090	1440	—	UPW1E821MPD
	1000	12.5×20	0.14	750	0.038	0.076	1660	—	UPW1E102MHD
	1000	10×31.5	0.14	750	0.035	0.070	1815	—	UPW1E102MPD6
	1500	16×25	0.14	1125	0.022	0.044	2555	—	UPW1E152MHD
	1500	12.5×25	0.14	1125	0.030	0.060	1950	—	UPW1E152MHD6
	1800	12.5×31.5	0.14	1350	0.025	0.050	2310	—	UPW1E182MHD
	1800	16×20	0.14	1350	0.029	0.058	2210	—	UPW1E182MHD6
	2200	16×25	0.16	1650	0.022	0.044	2555	—	UPW1E222MHD
	2200	18×20	0.16	1650	0.028	0.056	2490	—	UPW1E222MHD6
	2200	12.5×35.5	0.16	1650	0.022	0.044	2510	—	UPW1E222MHD3
	2700	16×25	0.16	2025	0.022	0.044	2555	—	UPW1E272MHD
	3300	16×31.5	0.18	2475	0.018	0.036	3010	—	UPW1E332MHD
	3300	18×25	0.18	2475	0.020	0.040	2740	—	UPW1E332MHD6
	3900	16×35.5	0.18	2925	0.016	0.032	3150	—	UPW1E392MHD
	3900	18×31.5	0.18	2925	0.016	0.032	3635	—	UPW1E392MHD6
	4700	18×35.5	0.20	3525	0.015	0.030	3680	—	UPW1E472MHD
	6800	18×40	0.24	5100	0.014	0.028	3800	—	UPW1E682MHD
35 (1V)	4.7	5×11	0.12	4.935	0.60	1.20	180	—	UPW1V4R7MDD
	10	5×11	0.12	10.5	0.60	1.20	180	—	UPW1V100MDD
	22	5×11	0.12	23.1	0.60	1.20	180	—	UPW1V220MDD
	27	5×11	0.12	28.35	0.60	1.20	180	—	UPW1V270MDD
	33	5×11	0.12	34.65	0.60	1.20	180	—	UPW1V330MDD
	47	6.3×11	0.12	49.35	0.25	0.50	290	—	UPW1V470MED
	56	6.3×11	0.12	58.8	0.25	0.50	290	—	UPW1V560MED
	82	6.3×15	0.12	86.1	0.23	0.46	430	—	UPW1V820MED
	100	8×11.5	0.12	105	0.117	0.234	555	—	UPW1V101MPD
	150	8×11.5	0.12	157.5	0.117	0.234	555	—	UPW1V151MPD
	220	10×12.5	0.12	231	0.090	0.18	760	—	UPW1V221MPD
	220	8×15	0.12	231	0.085	0.17	730	—	UPW1V221MPD6
	330	10×16	0.12	346.5	0.068	0.136	1050	—	UPW1V331MPD
	330	8×20	0.12	346.5	0.065	0.13	995	—	UPW1V331MPD6
	390	10×20	0.12	409.5	0.052	0.104	1220	—	UPW1V391MPD
	470	10×20	0.12	493.5	0.052	0.104	1220	—	UPW1V471MPD
	560	10×25	0.12	588	0.045	0.090	1440	—	UPW1V561MPD
	680	12.5×20	0.12	714	0.038	0.076	1660	—	UPW1V681MHD
	680	10×31.5	0.12	714	0.035	0.070	1815	—	UPW1V681MPD6
	1000	12.5×25	0.12	1050	0.030	0.060	1950	—	UPW1V102MHD
	1200	12.5×31.5	0.12	1260	0.025	0.050	2310	—	UPW1V122MHD
	1200	16×20	0.12	1260	0.029	0.058	2210	—	UPW1V122MHD6

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.

UPW

■ 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)		Part Number
					20℃/ 100kHz	−10℃/ 100kHz	105℃/ 100kHz	105℃/ 120Hz	
35 (1V)	1500	16×25	0.12	1575	0.022	0.044	2555	—	UPW1V152MHD
	1500	12.5×35.5	0.12	1575	0.022	0.044	2510	—	UPW1V152MHD6
	1800	16×25	0.12	1890	0.022	0.044	2555	—	UPW1V182MHD
	1800	18×20	0.12	1890	0.028	0.056	2490	—	UPW1V182MHD6
	2200	16×31.5	0.14	2310	0.018	0.036	3010	—	UPW1V222MHD
	2200	18×25	0.14	2310	0.020	0.040	2740	—	UPW1V222MHD6
	2700	16×35.5	0.14	2835	0.016	0.032	3150	—	UPW1V272MHD
	2700	18×31.5	0.14	2835	0.016	0.032	3635	—	UPW1V272MHD6
	3300	18×35.5	0.16	3465	0.015	0.030	3680	—	UPW1V332MHD
	4700	18×40	0.18	4935	0.014	0.028	3800	—	UPW1V472MHD
50 (1H)	2.2	5×11	0.10	4	3.00	6.00	55	—	UPW1H2R2MDD
	3.3	5×11	0.10	4.95	2.60	5.20	65	—	UPW1H3R3MDD
	4.7	5×11	0.10	7.05	2.30	4.60	90	—	UPW1H4R7MDD
	10	5×11	0.10	15	1.40	2.80	120	—	UPW1H100MDD
	18	5×11	0.10	27	1.30	2.60	155	—	UPW1H180MDD
	22	5×11	0.10	33	1.20	2.40	170	—	UPW1H220MDD
	33	6.3×11	0.10	49.5	0.43	0.86	300	—	UPW1H330MED
	47	6.3×11	0.10	70.5	0.43	0.86	300	—	UPW1H470MED
	56	6.3×15	0.10	84	0.40	0.80	360	—	UPW1H560MED
	82	8×11.5	0.10	123	0.234	0.468	485	—	UPW1H820MPD
	100	8×11.5	0.10	150	0.234	0.468	485	—	UPW1H101MPD
	120	8×15	0.10	180	0.155	0.31	635	—	UPW1H121MPD
	120	10×12.5	0.10	180	0.162	0.324	620	—	UPW1H121MPD6
	150	10×12.5	0.10	225	0.162	0.324	615	—	UPW1H151MPD
	180	8×20	0.10	270	0.12	0.24	860	—	UPW1H181MPD
	180	10×16	0.10	270	0.119	0.238	850	—	UPW1H181MPD6
	220	10×16	0.10	330	0.119	0.238	850	—	UPW1H221MPD
	220	10×20	0.10	330	0.090	0.18	1030	—	UPW1H221MPD6
	270	10×25	0.10	405	0.082	0.164	1200	—	UPW1H271MPD
	330	10×20	0.10	495	0.090	0.18	1030	—	UPW1H331MPD
	330	10×31.5	0.10	495	0.060	0.12	1610	—	UPW1H331MPD6
	390	12.5×20	0.10	585	0.063	0.126	1480	—	UPW1H391MHD
	470	12.5×20	0.10	705	0.060	0.12	1500	—	UPW1H471MHD
	560	12.5×25	0.10	840	0.050	0.10	1832	—	UPW1H561MHD
	680	12.5×25	0.10	1020	0.050	0.10	1840	—	UPW1H681MHD
	680	16×20	0.10	1020	0.048	0.096	1840	—	UPW1H681MHD6
	820	12.5×35.5	0.10	1230	0.034	0.068	2290	—	UPW1H821MHD
	820	18×20	0.10	1230	0.042	0.084	2420	—	UPW1H821MHD6
	1000	16×25	0.10	1500	0.034	0.068	2235	—	UPW1H102MHD
	1200	16×31.5	0.10	1800	0.028	0.056	2700	—	UPW1H122MHD
	1200	18×25	0.10	1800	0.029	0.058	2610	—	UPW1H122MHD6
	1500	16×31.5	0.10	2250	0.028	0.056	2700	—	UPW1H152MHD
	1500	16×35.5	0.10	2250	0.025	0.050	2790	—	UPW1H152MHD6
	1800	18×31.5	0.10	2700	0.025	0.050	3000	—	UPW1H182MHD
	2200	18×35.5	0.12	3300	0.023	0.046	3100	—	UPW1H222MHD
63 (1J)	4.7	5×11	0.09	8.883	4.70	9.40	68	—	UPW1J4R7MDD
	6.8	5×11	0.09	12.852	2.50	5.00	95	—	UPW1J6R8MDD
	10	5×11	0.09	18.9	2.10	4.20	110	—	UPW1J100MDD
	12	5×11	0.09	22.68	2.00	4.00	145	—	UPW1J120MDD
	15	6.3×11	0.09	28.35	1.20	2.40	160	—	UPW1J150MED
	22	6.3×11	0.09	41.58	0.71	1.42	250	—	UPW1J220MED
	33	6.3×11	0.09	62.37	0.71	1.42	250	—	UPW1J330MED
	39	6.3×15	0.09	73.71	0.70	1.40	330	—	UPW1J390MED

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.

UPW

■ 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)		Part Number
					20℃/ 100kHz	−10℃/ 100kHz	105℃/ 100kHz	105℃/ 120Hz	
63 (1J)	47	8×11.5	0.09	88.83	0.342	0.684	405	—	UPW1J470MPD
	68	8×11.5	0.09	128.52	0.342	0.684	405	—	UPW1J680MPD
	100	10×12.5	0.09	189	0.256	0.512	540	—	UPW1J101MPD
	100	8×15	0.09	189	0.23	0.46	535	—	UPW1J101MPD6
	120	10×16	0.09	226.8	0.194	0.388	600	—	UPW1J121MPD
	150	10×16	0.09	283.5	0.194	0.388	660	—	UPW1J151MPD
	180	10×20	0.09	340.2	0.147	0.294	890	—	UPW1J181MPD
	180	12.5×15	0.09	340.2	0.15	0.30	1020	—	UPW1J181MHD6
	220	10×20	0.09	415.8	0.147	0.294	885	—	UPW1J221MPD
	220	10×25	0.09	415.8	0.13	0.26	1050	—	UPW1J221MPD6
	270	16×15	0.09	510.3	0.090	0.18	1410	—	UPW1J271MHD
	330	12.5×20	0.09	623.7	0.085	0.17	1290	—	UPW1J331MHD
	390	12.5×25	0.09	737.1	0.070	0.14	1720	—	UPW1J391MHD
	390	18×15	0.09	737.1	0.086	0.172	1690	—	UPW1J391MHD6
	470	12.5×25	0.09	888.3	0.070	0.14	1720	—	UPW1J471MHD
	470	12.5×31.5	0.09	888.3	0.055	0.11	2090	—	UPW1J471MHD6
	470	16×20	0.09	888.3	0.059	0.118	1770	—	UPW1J471MHD3
	680	16×25	0.09	1285.2	0.050	0.10	2160	—	UPW1J681MHD
	680	12.5×35.5	0.09	1285.2	0.047	0.094	2270	—	UPW1J681MHD6
	680	18×20	0.09	1285.2	0.055	0.11	2290	—	UPW1J681MHD3
	820	16×31.5	0.09	1549.8	0.043	0.086	2670	—	UPW1J821MHD
	820	18×25	0.09	1549.8	0.043	0.086	2590	—	UPW1J821MHD6
	1000	16×31.5	0.09	1890	0.043	0.086	2770	—	UPW1J102MHD
	1000	16×35.5	0.09	1890	0.036	0.072	2770	—	UPW1J102MHD6
	1200	18×31.5	0.09	2268	0.032	0.064	2950	—	UPW1J122MHD
	1500	18×35.5	0.09	2835	0.030	0.060	3100	—	UPW1J152MHD
	2200	18×40	0.11	4158	0.028	0.056	3200	—	UPW1J222MHD
100 (2A)	2.2	5×11	0.08	6.6	9.80	19.60	44	—	UPW2A2R2MDD
	3.3	5×11	0.08	9.9	6.60	13.20	58	—	UPW2A3R3MDD
	4.7	5×11	0.08	14.1	4.60	9.20	74	—	UPW2A4R7MDD
	6.8	5×11	0.08	20.4	3.50	7.00	95	—	UPW2A6R8MDD
	10	6.3×11	0.08	30	1.80	3.60	130	—	UPW2A100MED
	15	8×11.5	0.08	45	0.83	1.66	180	—	UPW2A150MPD
	18	6.3×15	0.08	54	0.80	1.60	200	—	UPW2A180MED
	22	8×11.5	0.08	66	0.68	1.36	230	—	UPW2A220MPD
	33	10×12.5	0.08	99	0.46	0.92	320	—	UPW2A330MPD
	33	8×15	0.08	99	0.45	0.90	360	—	UPW2A330MPD6
	47	10×16	0.08	141	0.37	0.74	420	—	UPW2A470MPD
	47	8×20	0.08	141	0.37	0.74	420	—	UPW2A470MPD6
	68	10×20	0.08	204	0.30	0.60	490	—	UPW2A680MPD
	82	10×25	0.08	246	0.25	0.50	540	—	UPW2A820MPD
	100	12.5×20	0.08	300	0.18	0.36	580	—	UPW2A101MHD
	150	12.5×25	0.08	450	0.13	0.26	710	—	UPW2A151MHD
	180	12.5×31.5	0.08	540	0.12	0.24	790	—	UPW2A181MHD
	180	16×20	0.08	540	0.13	0.26	750	—	UPW2A181MHD6
	220	16×25	0.08	660	0.10	0.20	890	—	UPW2A221MHD
	220	18×20	0.08	660	0.11	0.22	850	—	UPW2A221MHD6
	330	16×25	0.08	990	0.090	0.18	1080	—	UPW2A331MHD
	390	18×25	0.08	1170	0.083	0.166	1260	—	UPW2A391MHD
	470	16×31.5	0.08	1410	0.076	0.152	1310	—	UPW2A471MHD
	560	18×31.5	0.08	1680	0.068	0.136	1370	—	UPW2A561MHD
	680	16×35.5	0.08	2040	0.064	0.128	1410	—	UPW2A681MHD
	1000	18×40	0.08	3000	0.047	0.094	1520	—	UPW2A102MHD

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.

UPW

■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μF)	Case Size φD×L (mm)	tan δ	Leakage Current (μA) (at 20℃ after 1 minute)	Rated Ripple (mArms) 105℃/100kHz	Rated Ripple (mArms) 105℃/120Hz	Part Number
160 (2C)	0.47	6.3×11	0.15	47.52	—	12	UPW2CR47MED
	1	6.3×11	0.15	56	—	17	UPW2C010MED
	2.2	6.3×11	0.15	75.2	—	25	UPW2C2R2MED
	3.3	8×11.5	0.15	92.8	—	36	UPW2C3R3MPD
	4.7	8×11.5	0.15	115.2	—	43	UPW2C4R7MPD
	10	10×12.5	0.15	164	—	70	UPW2C100MPD
	22	10×20	0.15	240.8	—	130	UPW2C220MPD
	33	12.5×20	0.15	311.2	—	180	UPW2C330MHD
	47	12.5×25	0.15	400.8	—	220	UPW2C470MHD
	100	16×25	0.15	740	—	330	UPW2C101MHD
	220	18×35.5	0.15	1508	—	500	UPW2C221MHD
	220	20×31	0.15	1508	—	500	UPW2C221MRD6
	330	20×40	0.15	2212	—	900	UPW2C331MRD
	470	22×50	0.15	3108	—	1200	UPW2C471MRD
200 (2D)	0.47	6.3×11	0.15	49.4	—	12	UPW2DR47MED
	1	6.3×11	0.15	60	—	17	UPW2D010MED
	2.2	6.3×11	0.15	84	—	25	UPW2D2R2MED
	3.3	8×11.5	0.15	106	—	36	UPW2D3R3MPD
	4.7	10×12.5	0.15	134	—	50	UPW2D4R7MPD
	10	10×16	0.15	180	—	80	UPW2D100MPD
	22	10×20	0.15	276	—	140	UPW2D220MPD
	33	12.5×25	0.15	364	—	190	UPW2D330MHD
	47	12.5×25	0.15	476	—	220	UPW2D470MHD
	100	16×31.5	0.15	900	—	335	UPW2D101MHD
	220	18×40	0.15	1860	—	515	UPW2D221MHD
	220	20×35	0.15	1860	—	515	UPW2D221MRD6
	330	22×40	0.15	2740	—	1100	UPW2D331MRD
	470	22×50	0.15	3860	—	1310	UPW2D471MRD
250 (2E)	0.47	6.3×11	0.15	51.75	—	12	UPW2ER47MED
	1	6.3×11	0.15	65	—	17	UPW2E010MED
	2.2	8×11.5	0.15	95	—	29	UPW2E2R2MPD
	3.3	10×12.5	0.15	122.5	—	42	UPW2E3R3MPD
	4.7	10×12.5	0.15	147	—	50	UPW2E4R7MPD
	10	10×20	0.15	200	—	88	UPW2E100MPD
	22	12.5×25	0.15	320	—	155	UPW2E220MHD
	33	12.5×25	0.15	430	—	190	UPW2E330MHD
	47	16×25	0.15	570	—	230	UPW2E470MHD
	100	18×35.5	0.15	1100	—	340	UPW2E101MHD
	100	20×31	0.15	1100	—	340	UPW2E101MRD6
	220	20×40	0.15	2300	—	525	UPW2E221MRD
	330	22×50	0.15	3400	—	1150	UPW2E331MRD
	470	25×50	0.15	4800	—	1350	UPW2E471MRD

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.

UPW

■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μF)	Case Size φD×L (mm)	tan δ	Leakage Current (μA) (at 20℃ after 1 minute)	Rated Ripple (mArms) 105℃/100kHz	Rated Ripple (mArms) 105℃/120Hz	Part Number
315 (2F)	0.47	8×11.5	0.20	54.805	—	11	UPW2FR47MPD
	1	8×11.5	0.20	71.5	—	16	UPW2F010MPD
	2.2	10×12.5	0.20	109.3	—	28	UPW2F2R2MPD
	3.3	10×12.5	0.20	141.58	—	34	UPW2F3R3MPD
	4.7	10×16	0.20	159.22	—	45	UPW2F4R7MPD
	10	10×20	0.20	226	—	72	UPW2F100MPD
	22	12.5×25	0.20	377.2	—	120	UPW2F220MHD
	33	16×25	0.20	515.8	—	155	UPW2F330MHD
	47	16×35.5	0.20	692.2	—	190	UPW2F470MHD
	100	18×40	0.20	1360	—	285	UPW2F101MHD
	100	20×35	0.20	1360	—	285	UPW2F101MRD6
	220	22×50	0.20	2872	—	540	UPW2F221MRD
350 (2V)	0.47	8×11.5	0.20	56.45	—	11	UPW2VR47MPD
	1	10×12.5	0.20	75	—	17	UPW2V010MPD
	2.2	10×16	0.20	117	—	31	UPW2V2R2MPD
	3.3	10×16	0.20	146.2	—	38	UPW2V3R3MPD
	4.7	10×20	0.20	165.8	—	49	UPW2V4R7MPD
	10	12.5×20	0.20	240	—	82	UPW2V100MHD
	22	16×25	0.20	408	—	130	UPW2V220MHD
	33	16×31.5	0.20	562	—	160	UPW2V330MHD
	47	18×35.5	0.20	758	—	200	UPW2V470MHD
	47	20×31	0.20	758	—	200	UPW2V470MRD6
	100	20×40	0.20	1500	—	290	UPW2V101MRD
	220	25×50	0.20	3180	—	550	UPW2V221MRD
400 (2G)	1	10×12.5	0.25	80	—	16	UPW2G010MPD
	2.2	10×16	0.25	128	—	27	UPW2G2R2MPD
	3.3	10×20	0.25	152.8	—	36	UPW2G3R3MPD
	4.7	10×20	0.25	175.2	—	43	UPW2G4R7MPD
	10	12.5×25	0.25	260	—	72	UPW2G100MHD
	22	16×25	0.25	452	—	110	UPW2G220MHD
	33	16×31.5	0.25	628	—	140	UPW2G330MHD
	47	18×35.5	0.25	852	—	170	UPW2G470MHD
	47	20×31	0.25	852	—	170	UPW2G470MRD6
	100	22×50	0.25	1700	—	350	UPW2G101MRD
450 (2W)	1	10×12.5	0.25	85	—	18	UPW2W010MPD
	2.2	10×20	0.25	139	—	29	UPW2W2R2MPD
	3.3	12.5×20	0.25	159.4	—	41	UPW2W3R3MHD
	4.7	12.5×20	0.25	184.6	—	49	UPW2W4R7MHD
	10	16×25	0.25	280	—	75	UPW2W100MHD
	22	16×31.5	0.25	496	—	115	UPW2W220MHD
	33	18×35.5	0.25	694	—	145	UPW2W330MHD
	33	20×31	0.25	694	—	145	UPW2W330MRD6
	47	20×40	0.25	946	—	175	UPW2W470MRD
	100	25×50	0.25	1900	—	350	UPW2W101MRD

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.