ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

UPS

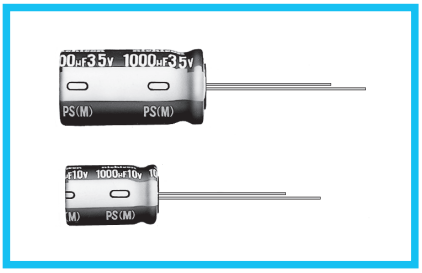
Miniature Sized, Low Impedance, For Switching Power Supplies

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

- Wide temperature range type, miniature sized.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).

Valued marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

UPJ
Smaller
UPS



■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.)	0.24	0.20	0.16	0.14	0.12	0.10	0.09	0.08	0.15	0.20	0.25

Stability at Low Temperature

Measurement frequency : 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)	—	—	—	2	3	3	4	6	15
	Z(−40˚C) / Z(+20˚C)	—	—	—	3	4	6	8	10	—
	Z(−55˚C) / Z(+20˚C)	5	4	3	—	—	—	—	—	—

Endurance

The specifications listed at right shall be met when the capacitors are restored to 20˚C after D.C. bias plus rated ripple current is applied for 3000 hours (2000 hours for ϕD= 5 to 10) at 105˚C, the peak voltage shall not exceed the rated voltage.

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

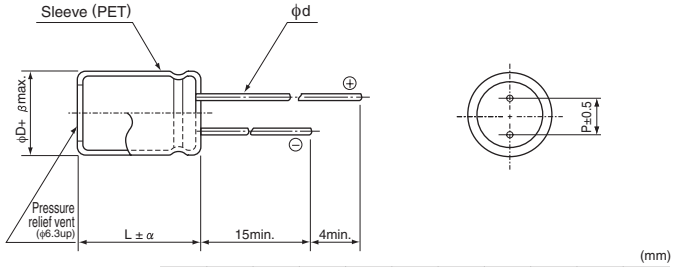
After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.

Marking

Printed with white color letter on dark brown sleeve.

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

■Radial Lead Type



(mm)

α	(L < 20) 1.5
	(L ≧ 20) 2.0

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	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

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

Type numbering system (Example : 25V 470μF)

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

- 12 : Size code
- 11 : Configuration ※
- 10 : Capacitance tolerance (±20%)
- 9 : Rated capacitance (470μF)
- 8 : Rated voltage (25V)
- 4 : Series name
- 1 : 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 47	—	0.17	0.40	0.65	1.00
	100 to 220	0.30	0.50	0.65	0.80	1.00
	330 to 680	0.57	0.71	0.82	0.90	1.00
	1000 to 15000	0.75	0.87	0.96	0.98	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.

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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 1 minute)	Impedance (Ω) max. (20℃/100kHz)	Rated Ripple (mArms) 105℃/100kHz	Rated Ripple (mArms) 105℃/120Hz	Part Number
6.3 (0J)	22	5×11	0.24	4.158	1.50	160	—	※UPS0J220MDD
	33	5×11	0.24	6.237	1.50	160	—	※UPS0J330MDD
	47	5×11	0.24	8.883	1.50	160	—	※UPS0J470MDD
	100	5×11	0.24	18.9	1.50	160	—	※UPS0J101MDD
	150	6.3×11	0.24	28.35	0.50	250	—	※UPS0J151MED
	220	6.3×11	0.24	41.58	0.50	250	—	※UPS0J221MED
	330	6.3×11	0.24	62.37	0.50	250	—	※UPS0J331MED
	470	8×11.5	0.24	88.83	0.28	410	—	UPS0J471MPD
	680	10×12.5	0.24	128.52	0.19	600	—	UPS0J681MPD
	1000	10×12.5	0.24	189	0.19	600	—	UPS0J102MPD
	1500	10×20	0.24	283.5	0.11	1000	—	UPS0J152MPD
	2200	12.5×20	0.26	415.8	0.075	1250	—	UPS0J222MHD
	3300	12.5×20	0.28	623.7	0.075	1250	—	UPS0J332MHD
	4700	16×25	0.30	888.3	0.038	1900	—	UPS0J472MHD
	6800	16×25	0.34	1285.2	0.038	1900	—	UPS0J682MHD
	10000	16×30.5	0.42	1890	0.033	2350	—	UPS0J103MHD
	15000	18×35.5	0.52	2835	0.030	2700	—	UPS0J153MHD
10 (1A)	22	5×11	0.20	6.6	1.50	160	—	※UPS1A220MDD
	33	5×11	0.20	9.9	1.50	160	—	※UPS1A330MDD
	47	5×11	0.20	14.1	1.50	160	—	※UPS1A470MDD
	100	5×11	0.20	30	1.50	160	—	※UPS1A101MDD
	150	6.3×11	0.20	45	0.50	250	—	※UPS1A151MED
	220	6.3×11	0.20	66	0.50	250	—	※UPS1A221MED
	330	8×11.5	0.20	99	0.28	410	—	UPS1A331MPD
	470	8×11.5	0.20	141	0.28	410	—	UPS1A471MPD
	680	10×12.5	0.20	204	0.19	600	—	UPS1A681MPD
	1000	10×16	0.20	300	0.14	800	—	UPS1A102MPD
	1500	10×20	0.20	450	0.11	1000	—	UPS1A152MPD
	2200	12.5×20	0.22	660	0.075	1250	—	UPS1A222MHD
	3300	12.5×25	0.24	990	0.057	1550	—	UPS1A332MHD
	4700	16×25	0.26	1410	0.038	1900	—	UPS1A472MHD
	6800	16×30.5	0.30	2040	0.033	2350	—	UPS1A682MHD
	10000	18×35.5	0.38	3000	0.030	2700	—	UPS1A103MHD
	15000	18×40	0.48	4500	0.027	3300	—	UPS1A153MHD
16 (1C)	10	5×11	0.16	4.8	1.50	160	—	※UPS1C100MDD
	22	5×11	0.16	10.56	1.50	160	—	※UPS1C220MDD
	33	5×11	0.16	15.84	1.50	160	—	※UPS1C330MDD
	47	5×11	0.16	22.56	1.50	160	—	※UPS1C470MDD
	100	6.3×11	0.16	48	0.50	250	—	※UPS1C101MED
	150	6.3×11	0.16	72	0.50	250	—	※UPS1C151MED
	220	8×11.5	0.16	105.6	0.28	410	—	UPS1C221MPD
	330	8×11.5	0.16	158.4	0.28	410	—	UPS1C331MPD
	470	10×12.5	0.16	225.6	0.19	600	—	UPS1C471MPD
	680	10×16	0.16	326.4	0.14	800	—	UPS1C681MPD
	1000	10×20	0.16	480	0.11	1000	—	UPS1C102MPD
	1500	12.5×20	0.16	720	0.075	1250	—	UPS1C152MHD

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 (μF)	Case Size φD×L(mm)	tan δ	Leakage Current (μA) (at 20℃ after 1 minute)	Impedance(Ω) max. (20℃/100kHz)	Rated Ripple (mArms) 105℃/100kHz	Rated Ripple (mArms) 105℃/120Hz	Part Number
16 (1C)	2200	12.5×25	0.18	1056	0.057	1550	—	UPS1C222MHD
	3300	16×25	0.20	1584	0.038	1900	—	UPS1C332MHD
	4700	16×30.5	0.22	2256	0.033	2350	—	UPS1C472MHD
	6800	18×35.5	0.26	3264	0.030	2700	—	UPS1C682MHD
	10000	18×40	0.34	4800	0.027	3300	—	UPS1C103MHD
25 (1E)	4.7	5×11	0.14	4	1.50	160	—	※UPS1E4R7MDD
	10	5×11	0.14	7.5	1.50	160	—	※UPS1E100MDD
	22	5×11	0.14	16.5	1.50	160	—	※UPS1E220MDD
	33	5×11	0.14	24.75	1.50	160	—	※UPS1E330MDD
	47	5×11	0.14	35.25	1.50	160	—	※UPS1E470MDD
	100	6.3×11	0.14	75	0.50	250	—	※UPS1E101MED
	150	8×11.5	0.14	112.5	0.28	410	—	UPS1E151MPD
	220	8×11.5	0.14	165	0.28	410	—	UPS1E221MPD
	330	10×12.5	0.14	247.5	0.19	600	—	UPS1E331MPD
	470	10×16	0.14	352.5	0.14	800	—	UPS1E471MPD
	680	10×20	0.14	510	0.11	1000	—	UPS1E681MPD
	1000	12.5×20	0.14	750	0.075	1250	—	UPS1E102MHD
	1500	16×25	0.14	1125	0.038	1900	—	UPS1E152MHD
	2200	16×25	0.16	1650	0.038	1900	—	UPS1E222MHD
	3300	16×30.5	0.18	2475	0.033	2350	—	UPS1E332MHD
	4700	18×35.5	0.20	3525	0.030	2700	—	UPS1E472MHD
	6800	18×40	0.24	5100	0.027	3300	—	UPS1E682MHD
35 (1V)	4.7	5×11	0.12	4.935	1.50	160	—	※UPS1V4R7MDD
	10	5×11	0.12	10.5	1.50	160	—	※UPS1V100MDD
	22	5×11	0.12	23.1	1.50	160	—	※UPS1V220MDD
	33	5×11	0.12	34.65	1.50	160	—	※UPS1V330MDD
	47	6.3×11	0.12	49.35	0.50	250	—	※UPS1V470MED
	100	8×11.5	0.12	105	0.28	410	—	UPS1V101MPD
	150	8×11.5	0.12	157.5	0.28	410	—	UPS1V151MPD
	220	10×12.5	0.12	231	0.19	600	—	UPS1V221MPD
	330	10×16	0.12	346.5	0.14	800	—	UPS1V331MPD
	470	10×20	0.12	493.5	0.11	1000	—	UPS1V471MPD
	680	12.5×20	0.12	714	0.075	1250	—	UPS1V681MHD
	1000	12.5×25	0.12	1050	0.057	1550	—	UPS1V102MHD
	1500	16×25	0.12	1575	0.038	1900	—	UPS1V152MHD
	2200	16×30.5	0.14	2310	0.033	2350	—	UPS1V222MHD
	3300	18×35.5	0.16	3465	0.030	2700	—	UPS1V332MHD
	4700	18×40	0.18	4935	0.027	3300	—	UPS1V472MHD
50 (1H)	2.2	5×11	0.10	4	4.50	55	—	※UPS1H2R2MDD
	3.3	5×11	0.10	4.95	3.90	65	—	※UPS1H3R3MDD
	4.7	5×11	0.10	7.05	3.50	90	—	※UPS1H4R7MDD
	10	5×11	0.10	15	2.10	120	—	※UPS1H100MDD
	22	5×11	0.10	33	1.80	150	—	※UPS1H220MDD
	33	6.3×11	0.10	49.5	0.65	250	—	※UPS1H330MED
	47	6.3×11	0.10	70.5	0.65	250	—	※UPS1H470MED
	100	8×11.5	0.10	150	0.36	340	—	UPS1H101MPD

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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 1 minute)	Impedance (Ω) max. (20℃/100kHz)	Rated Ripple (mArms)		Part Number
						105℃/ 100kHz	105℃/ 120Hz	
50 (1H)	150	10×12.5	0.10	225	0.26	490	—	UPS1H151MPD
	220	10×16	0.10	330	0.18	650	—	UPS1H221MPD
	330	10×20	0.10	495	0.15	810	—	UPS1H331MPD
	470	12.5×20	0.10	705	0.13	1100	—	UPS1H471MHD
	680	12.5×25	0.10	1020	0.10	1200	—	UPS1H681MHD
	1000	16×25	0.10	1500	0.058	1600	—	UPS1H102MHD
	1500	16×30.5	0.10	2250	0.040	2000	—	UPS1H152MHD
	2200	18×35.5	0.12	3300	0.035	2300	—	UPS1H222MHD
63 (1J)	4.7	5×11	0.09	8.883	4.70	68	—	※UPS1J4R7MDD
	10	5×11	0.09	18.9	2.10	110	—	※UPS1J100MDD
	22	6.3×11	0.09	41.58	0.98	180	—	※UPS1J220MED
	33	6.3×11	0.09	62.37	0.71	220	—	※UPS1J330MED
	47	8×11.5	0.09	88.83	0.65	310	—	UPS1J470MPD
	100	10×12.5	0.09	189	0.31	390	—	UPS1J101MPD
	150	10×16	0.09	283.5	0.25	440	—	UPS1J151MPD
	220	10×20	0.09	415.8	0.20	700	—	UPS1J221MPD
	330	12.5×20	0.09	623.7	0.12	980	—	UPS1J331MHD
	470	12.5×25	0.09	888.3	0.081	1200	—	UPS1J471MHD
	680	16×25	0.09	1285.2	0.058	1300	—	UPS1J681MHD
	1000	16×30.5	0.09	1890	0.049	1380	—	UPS1J102MHD
	1500	18×35.5	0.09	2835	0.038	1750	—	UPS1J152MHD
	2200	18×40	0.11	4158	0.032	2120	—	UPS1J222MHD
100 (2A)	2.2	5×11	0.08	6.6	9.80	44	—	※UPS2A2R2MDD
	3.3	5×11	0.08	9.9	6.60	58	—	※UPS2A3R3MDD
	4.7	5×11	0.08	14.1	4.60	74	—	※UPS2A4R7MDD
	10	6.3×11	0.08	30	1.80	130	—	※UPS2A100MED
	22	8×11.5	0.08	66	0.68	230	—	UPS2A220MPD
	33	10×12.5	0.08	99	0.46	320	—	UPS2A330MPD
	47	10×16	0.08	141	0.37	420	—	UPS2A470MPD
	100	12.5×20	0.08	300	0.18	580	—	UPS2A101MHD
	150	12.5×25	0.08	450	0.13	710	—	UPS2A151MHD
	220	16×25	0.08	660	0.10	890	—	UPS2A221MHD
	330	16×25	0.08	990	0.090	1080	—	UPS2A331MHD
	470	16×30.5	0.08	1410	0.076	1310	—	UPS2A471MHD
	680	16×35.5	0.08	2040	0.064	1410	—	UPS2A681MHD
	1000	18×40	0.08	3000	0.047	1520	—	UPS2A102MHD

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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 (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	※UPS2CR47MED
	1	6.3×11	0.15	56	—	17	※UPS2C010MED
	2.2	6.3×11	0.15	75.2	—	25	※UPS2C2R2MED
	3.3	8×11.5	0.15	92.8	—	36	※UPS2C3R3MPD
	4.7	8×11.5	0.15	115.2	—	43	※UPS2C4R7MPD
	10	10×12.5	0.15	164	—	70	※UPS2C100MPD
	22	10×20	0.15	240.8	—	130	※UPS2C220MPD
	33	12.5×20	0.15	311.2	—	180	※UPS2C330MHD
	47	12.5×25	0.15	400.8	—	220	※UPS2C470MHD
	100	16×25	0.15	740	—	330	※UPS2C101MHD
	220	18×35.5	0.15	1508	—	500	※UPS2C221MHD
	220	20×31	0.15	1508	—	500	※UPS2C221MRD6
	330	20×40	0.15	2212	—	900	※UPS2C331MRD
	470	22×50	0.15	3108	—	1200	※UPS2C471MRD
200 (2D)	0.47	6.3×11	0.15	49.4	—	12	※UPS2DR47MED
	1	6.3×11	0.15	60	—	17	※UPS2D010MED
	2.2	6.3×11	0.15	84	—	25	※UPS2D2R2MED
	3.3	8×11.5	0.15	106	—	36	※UPS2D3R3MPD
	4.7	10×12.5	0.15	134	—	50	※UPS2D4R7MPD
	10	10×16	0.15	180	—	80	※UPS2D100MPD
	22	10×20	0.15	276	—	140	※UPS2D220MPD
	33	12.5×25	0.15	364	—	190	※UPS2D330MHD
	47	12.5×25	0.15	476	—	220	※UPS2D470MHD
	100	16×30.5	0.15	900	—	335	※UPS2D101MHD
	220	18×40	0.15	1860	—	515	※UPS2D221MHD
	220	20×35	0.15	1860	—	515	※UPS2D221MRD6
	330	22×40	0.15	2740	—	1100	※UPS2D331MRD
	470	22×50	0.15	3860	—	1310	※UPS2D471MRD
250 (2E)	0.47	6.3×11	0.15	51.75	—	12	※UPS2ER47MED
	1	6.3×11	0.15	65	—	17	※UPS2E010MED
	2.2	8×11.5	0.15	95	—	29	※UPS2E2R2MPD
	3.3	10×12.5	0.15	122.5	—	42	※UPS2E3R3MPD
	4.7	10×12.5	0.15	147	—	50	※UPS2E4R7MPD
	10	10×20	0.15	200	—	88	※UPS2E100MPD
	22	12.5×25	0.15	320	—	155	※UPS2E220MHD
	33	12.5×25	0.15	430	—	190	※UPS2E330MHD
	47	16×25	0.15	570	—	230	※UPS2E470MHD
	100	18×35.5	0.15	1100	—	340	※UPS2E101MHD
	100	20×31	0.15	1100	—	340	※UPS2E101MRD6
	220	20×40	0.15	2300	—	525	※UPS2E221MRD
	330	22×50	0.15	3400	—	1150	※UPS2E331MRD
	470	25×50	0.15	4800	—	1350	※UPS2E471MRD

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UPS

■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	※UPS2FR47MPD
	1	8×11.5	0.20	71.5	—	16	※UPS2F010MPD
	2.2	10×12.5	0.20	109.3	—	28	※UPS2F2R2MPD
	3.3	10×12.5	0.20	141.58	—	34	※UPS2F3R3MPD
	4.7	10×16	0.20	159.22	—	45	※UPS2F4R7MPD
	10	10×20	0.20	226	—	72	※UPS2F100MPD
	22	12.5×25	0.20	377.2	—	120	※UPS2F220MHD
	33	16×25	0.20	515.8	—	155	※UPS2F330MHD
	47	16×35.5	0.20	692.2	—	190	※UPS2F470MHD
	100	18×40	0.20	1360	—	285	※UPS2F101MHD
	100	20×35	0.20	1360	—	285	※UPS2F101MRD6
	220	22×50	0.20	2872	—	540	※UPS2F221MRD
350 (2V)	0.47	8×11.5	0.20	56.45	—	11	※UPS2VR47MPD
	1	10×12.5	0.20	75	—	17	※UPS2V010MPD
	2.2	10×16	0.20	117	—	31	※UPS2V2R2MPD
	3.3	10×16	0.20	146.2	—	38	※UPS2V3R3MPD
	4.7	10×20	0.20	165.8	—	49	※UPS2V4R7MPD
	10	12.5×20	0.20	240	—	82	※UPS2V100MHD
	22	16×25	0.20	408	—	130	※UPS2V220MHD
	33	16×30.5	0.20	562	—	160	※UPS2V330MHD
	47	18×35.5	0.20	758	—	200	※UPS2V470MHD
	47	20×31	0.20	758	—	200	※UPS2V470MRD6
	100	20×40	0.20	1500	—	290	※UPS2V101MRD
	220	25×50	0.20	3180	—	550	※UPS2V221MRD
400 (2G)	1	10×12.5	0.25	80	—	16	※UPS2G010MPD
	2.2	10×16	0.25	128	—	27	※UPS2G2R2MPD
	3.3	10×20	0.25	152.8	—	36	※UPS2G3R3MPD
	4.7	10×20	0.25	175.2	—	43	※UPS2G4R7MPD
	10	12.5×25	0.25	260	—	72	※UPS2G100MHD
	22	16×25	0.25	452	—	110	※UPS2G220MHD
	33	16×30.5	0.25	628	—	140	※UPS2G330MHD
	47	18×35.5	0.25	852	—	170	※UPS2G470MHD
	47	20×31	0.25	852	—	170	※UPS2G470MRD6
	100	22×50	0.25	1700	—	350	※UPS2G101MRD
450 (2W)	1	10×12.5	0.25	85	—	18	※UPS2W010MPD
	2.2	10×20	0.25	139	—	29	※UPS2W2R2MPD
	3.3	12.5×20	0.25	159.4	—	41	※UPS2W3R3MHD
	4.7	12.5×20	0.25	184.6	—	49	※UPS2W4R7MHD
	10	16×25	0.25	280	—	75	※UPS2W100MHD
	22	16×30.5	0.25	496	—	115	※UPS2W220MHD
	33	18×35.5	0.25	694	—	145	※UPS2W330MHD
	33	20×31	0.25	694	—	145	※UPS2W330MRD6
	47	20×40	0.25	946	—	175	※UPS2W470MRD
	100	25×50	0.25	1900	—	350	※UPS2W101MRD

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.