

# ALUMINUM ELECTROLYTIC CAPACITORS

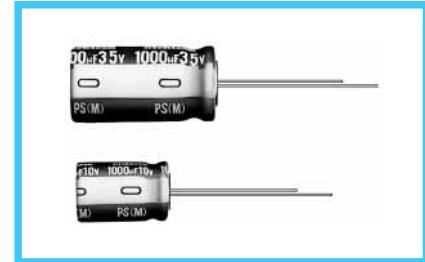
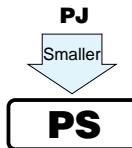
nichicon



Miniature Sized, Low Impedance,  
For Switching Power Supplies  
series



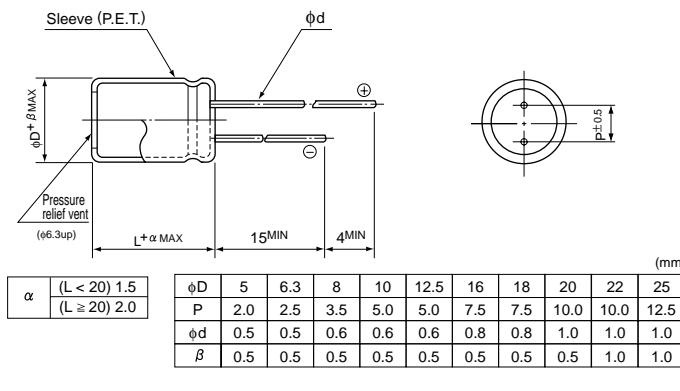
- Wide temperature range type, miniature sized.
- Adapted to the RoHS directive (2002/95/EC).



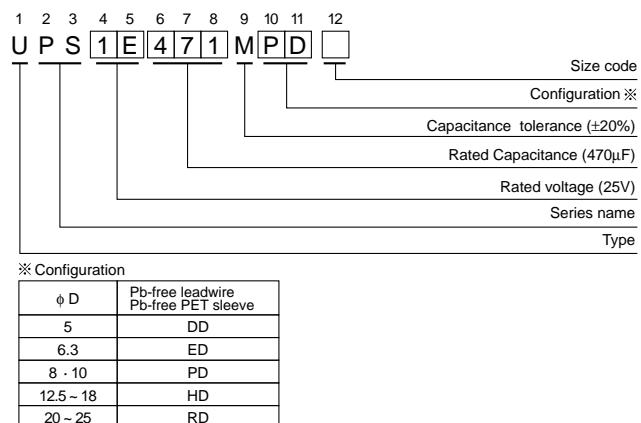
## ■ Specifications

Item	Performance Characteristics																					
Category Temperature Range	-55 ~ +105°C (6.3 ~ 100V), -40 ~ +105°C (160 ~ 400V), -25 ~ +105°C (450V)																					
Rated Voltage Range	6.3 ~ 450V																					
Rated Capacitance Range	0.47 ~ 15000μF																					
Capacitance Tolerance	±20% at 120Hz, 20°C																					
Leakage Current	Rated voltage (V)	6.3 ~ 100					160 ~ 450															
	Leakage current	After 1 minute's application of rated voltage, leakage current is not more than 0.03CV or 4 (μA), whichever is greater.					CV ≤ 1000: I= 0.1CV+40 (μA)max. (1 minute's) CV > 1000: I= 0.04CV+100 (μA)max. (1 minute's)															
tan δ	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF																					
	Rated voltage (V)	6.3	10	16	25	35	50	63	100	160 ~ 250	315 ~ 350											
	tan δ (MAX.)	0.24	0.20	0.16	0.14	0.12	0.10	0.09	0.08	0.15	0.20											
Stability at Low Temperature	Measurement frequency : 120Hz, Temperature : 20°C																					
	Rated voltage (V)	6.3 · 10	16 · 25	35 · 50	63 · 100	160 · 200	250	315 · 350	400	450												
	Z-25°C / Z+20°C	—	—	—	2	3	3	4	6	15												
	Impedance ratio	Z-40°C / Z+20°C	—	—	3	4	6	8	10	—												
	Z-55°C / Z+20°C	5	4	3	—	—	—	—	—	—												
Endurance	After an application of D.C. bias voltage plus the rated ripple current for 3000 hours (2000 hours for D = 5 ~ 10) at 105°C the peak voltage shall not exceed the rated D.C. voltage, capacitors meet the characteristic requirements listed at right.																					
	Capacitance change		Within ±20% of initial value																			
	tan δ		200% or less of initial specified value																			
	Leakage current		Initial specified value or less																			
Shelf Life	After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for endurance characteristics listed above.																					
Marking	Printed with white color letter on dark brown sleeve.																					

## ■ Radial Lead Type



## Type numbering system (Example : 25V 470μF)



## ● Frequency coefficient of rated ripple current

V	Cap.(μF)	Frequency	50Hz	120Hz	300Hz	1kHz	10kHz ~
6.3 ~ 100	~ 47		—	0.17	0.40	0.65	1.00
	100 ~ 220		0.30	0.50	0.65	0.80	1.00
	330 ~ 680		0.57	0.71	0.82	0.90	1.00
	1000 ~ 15000		0.75	0.87	0.96	0.98	1.00
160 ~ 450	0.47 ~ 220		0.80	1.00	1.25	1.40	1.60
	330 ~ 470		0.90	1.00	1.10	1.13	1.15

Please refer to page 21, 22, 23 about the formed or taped product spec.  
Please refer to page 3 for the minimum order quantity.

● Dimension table in next pages.

CAT.8100U

# ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

**PS** series

## ■ Standard ratings

Cap. (μF)	Code	Item	V (Code)	6.3 (0J)			10 (1A)			16 (1C)			25 (1E)			
				Case size φD × L (mm)	Impedance (Ω) MAX. 20°C 100kHz	Rated ripple (mA rms) 105°C 100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C 100kHz	Rated ripple (mA rms) 105°C 100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C 100kHz	Rated ripple (mA rms) 105°C 100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C 100kHz	Rated ripple (mA rms) 105°C 100kHz	
4.7	4R7												5×11	1.50	160	
10	100									5×11	1.50	160	5×11	1.50	160	
22	220	5×11	1.50	160	5×11	1.50	160	5×11	1.50	160	5×11	1.50	160	5×11	1.50	160
33	330	5×11	1.50	160	5×11	1.50	160	5×11	1.50	160	5×11	1.50	160	5×11	1.50	160
47	470	5×11	1.50	160	5×11	1.50	160	5×11	1.50	160	5×11	1.50	160	5×11	1.50	160
100	101	5×11	1.50	160	5×11	1.50	160	6.3×11	0.50	250	6.3×11	0.50	250	6.3×11	0.50	250
150	151	6.3×11	0.50	250	6.3×11	0.50	250	6.3×11	0.50	250	8×11.5	0.28	410	8×11.5	0.28	410
220	221	6.3×11	0.50	250	6.3×11	0.50	250	8×11.5	0.28	410	8×11.5	0.28	410	10×12.5	0.19	600
330	331	6.3×11	0.50	250	8×11.5	0.28	410	8×11.5	0.28	410	10×12.5	0.19	600	10×16	0.14	800
470	471	8×11.5	0.28	410	8×11.5	0.28	410	10×12.5	0.19	600	10×16	0.14	800	10×20	0.11	1000
680	681	10×12.5	0.19	600	10×12.5	0.19	600	10×16	0.14	800	10×20	0.11	800	12.5×20	0.075	1250
1000	102	10×12.5	0.19	600	10×16	0.14	800	10×20	0.11	1000	12.5×20	0.075	1250	12.5×20	0.075	1250
1500	152	10×20	0.11	1000	10×20	0.11	1000	12.5×20	0.075	1250	16×25	0.038	1900	16×25	0.038	1900
2200	222	12.5×20	0.075	1250	12.5×20	0.075	1250	12.5×25	0.057	1550	16×25	0.038	1900	16×31.5	0.033	2350
3300	332	12.5×20	0.075	1250	12.5×25	0.057	1550	16×25	0.038	1900	16×31.5	0.033	2350	16×31.5	0.033	2350
4700	472	16×25	0.038	1900	16×25	0.038	1900	16×31.5	0.033	2350	18×35.5	0.030	2700	18×40	0.027	3300
6800	682	16×25	0.038	1900	16×31.5	0.033	2350	18×35.5	0.030	2700	18×40	0.027	3300			
10000	103	16×31.5	0.033	2350	18×35.5	0.030	2700	18×40	0.027	3300						
15000	153	18×35.5	0.030	2700	18×40	0.027	3300									

Cap. (μF)	Code	Item	V (Code)	35 (1V)			50 (1H)			63 (1J)			100 (2A)			
				Case size φD × L (mm)	Impedance (Ω) MAX. 20°C 100kHz	Rated ripple (mA rms) 105°C 100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C 100kHz	Rated ripple (mA rms) 105°C 100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C 100kHz	Rated ripple (mA rms) 105°C 100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C 100kHz	Rated ripple (mA rms) 105°C 100kHz	
0.47	R47						5×11	7.50	25				5×11	43.0	20	
1	010						5×11	5.30	40				5×11	20.0	30	
2.2	2R2						5×11	4.50	55				5×11	9.80	44	
3.3	3R3						5×11	3.90	65				5×11	6.60	58	
4.7	4R7	5×11	1.50	160	5×11	3.50	90	5×11	4.70	68	5×11	4.60	74			
10	100	5×11	1.50	160	5×11	2.10	120	5×11	2.10	110	6.3×11	1.80	130			
22	220	5×11	1.50	160	5×11	1.80	150	6.3×11	0.98	180	8×11.5	0.68	230			
33	330	5×11	1.50	160	6.3×11	0.65	250	6.3×11	0.71	220	10×12.5	0.46	320			
47	470	6.3×11	0.50	250	6.3×11	0.65	250	8×11.5	0.65	310	10×16	0.37	420			
100	101	8×11.5	0.28	410	8×11.5	0.36	340	10×12.5	0.31	390	12.5×20	0.18	580			
150	151	8×11.5	0.28	410	10×12.5	0.26	490	10×16	0.25	440	12.5×25	0.13	710			
220	221	10×12.5	0.19	600	10×16	0.18	650	10×20	0.20	700	16×25	0.10	890			
330	331	10×16	0.14	800	10×20	0.15	810	12.5×20	0.12	980	16×25	0.090	1080			
470	471	10×20	0.11	1000	12.5×20	0.13	1100	12.5×25	0.081	1200	16×31.5	0.076	1310			
680	681	12.5×20	0.075	1250	12.5×25	0.10	1200	16×25	0.058	1300	16×35.5	0.064	1410			
1000	102	12.5×25	0.057	1550	16×25	0.058	1600	16×31.5	0.049	1380	18×40	0.047	1520			
1500	152	16×25	0.038	1900	16×31.5	0.040	2000	18×35.5	0.038	1750						
2200	222	16×31.5	0.033	2350	18×35.5	0.035	2300	18×40	0.032	2120						
3300	332	18×35.5	0.030	2700												
4700	472	18×40	0.027	3300												

Cap.(μF)	Code	V	φ D × L (mm)													
			160	200	250	315	350	400	450	2C	2D	2E	2F	2V	2G	2W
0.47	R47	6.3×11	12	6.3×11	12	6.3×11	12	8×11.5	11	8×11.5	11	8×11.5	11			
1	010	6.3×11	17	6.3×11	17	6.3×11	17	8×11.5	16	10×12.5	17	10×12.5	16	10×12.5	18	
2.2	2R2	6.3×11	25	6.3×11	25	8×11.5	29	10×12.5	28	10×16	31	10×16	27	10×20	29	
3.3	3R3	8×11.5	36	8×11.5	36	10×12.5	42	10×12.5	34	10×16	38	10×20	36	12.5×20	41	
4.7	4R7	8×11.5	43	10×12.5	50	10×12.5	50	10×16	45	10×20	49	10×20	43	12.5×20	49	
10	100	10×12.5	70	10×16	80	10×20	88	10×20	72	12.5×20	82	12.5×25	72	16×25	75	
22	220	10×20	130	10×20	140	12.5×25	155	12.5×25	120	16×25	130	16×25	110	16×31.5	115	
33	330	12.5×20	180	12.5×25	190	12.5×25	190	16×25	155	16×31.5	160	16×31.5	140	•18×35.5	145	
47	470	12.5×25	220	12.5×25	220	16×25	230	16×35.5	190	•18×35.5	200	•18×35.5	170	20×40	175	
100	101	16×25	330	16×31.5	335	•18×35.5	340	Δ18×40	285	20×40	290	22×50	350	25×50	350	
220	221	•18×35.5	500	Δ18×40	515	20×40	525	22×50	540	25×50	550					
330	331	20×40	900	22×40	1100	22×50	1150									
470	471	22×50	1200	22×50	1310	25×50	1350									Case size Rated ripple

Rated Ripple (mA rms) at 105°C 120Hz  
Size φ20×31 is available for capacitors marked "•"  
Size φ20×35 is available for capacitors marked "Δ"

In this case, "6" will be put at 12th digit of type numbering system.

CAT.8100U