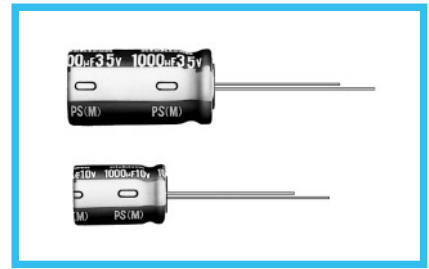
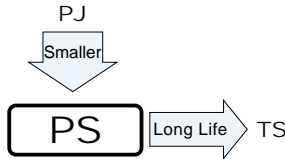


ALUMINUM ELECTROLYTIC CAPACITORS

PS Miniature Sized, Low Impedance, For Switching Power Supplies series



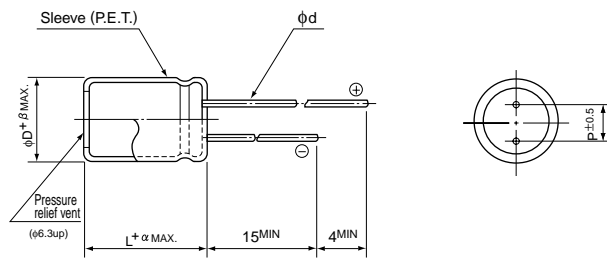
- Wide temperature range type, miniature sized.
- Compliant to the RoHS directive (2002/95/EC).



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, 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)										
Tangent of loss angle (tan δ)	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF Measurement frequency : 120Hz, Temperature : 20°C											
	Rated voltage (V)	6.3	10	16	25	35	50	63	100	160 to 250	315 · 350	400 · 450
Stability at Low Temperature	tan δ (MAX.)	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	—
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										
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.											
	tan δ	200% or less than the initial specified value										
Marking	Printed with white color letter on dark brown sleeve.											
	Leakage current	Less than or equal to the initial specified value										

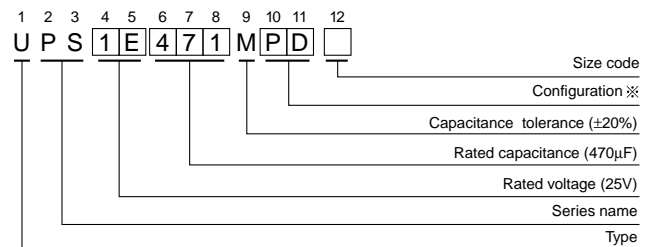
Radial Lead Type



α	(L < 20)		(L ≥ 20)		(mm)									
	5	6.3	8	10	12.5	16	18	20	22	25	φD	P	φd	β
	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0	12.5	5	2.0	0.5	0.5
	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0	1.0	1.0	0.5	0.5	0.5	0.5
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0	1.0	1.0	1.0

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 25V 470μF)



※ 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	0.47 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

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

• Dimension table in next pages.

Standard Ratings

Cap. (μF)	V (Code)	Item Code	6.3 (0J)			10 (1A)			16 (1C)			25 (1E)		
			Case size φD × L (mm)	Impedance (Ω) MAX. 20°C/100kHz	Rated ripple (mArms) 105°C/100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C/100kHz	Rated ripple (mArms) 105°C/100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C/100kHz	Rated ripple (mArms) 105°C/100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C/100kHz	Rated ripple (mArms) 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
33		330	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
100		101	5×11	1.50	160	5×11	1.50	160	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
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
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
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
680		681	10×12.5	0.19	600	10×12.5	0.19	600	10×16	0.14	800	10×20	0.11	1000
1000		102	10×12.5	0.19	600	10×16	0.14	800	10×20	0.11	1000	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
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
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
4700		472	16×25	0.038	1900	16×25	0.038	1900	16×31.5	0.033	2350	18×35.5	0.030	2700
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)	V (Code)	Item Code	35 (1V)			50 (1H)			63 (1J)			100 (2A)		
			Case size φD × L (mm)	Impedance (Ω) MAX. 20°C/100kHz	Rated ripple (mArms) 105°C/100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C/100kHz	Rated ripple (mArms) 105°C/100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C/100kHz	Rated ripple (mArms) 105°C/100kHz	Case size φD × L (mm)	Impedance (Ω) MAX. 20°C/100kHz	Rated ripple (mArms) 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)	V	Code	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				
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								

Rated ripple current (mArms) 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.