

# SNAP MOUNT TYPE ALUMINUM ELECTROLYTIC CAPACITORS

## PS2, US2 Series

PS2 type: Useful of 4,000 hours at 85°C, US2 type: Useful of 4,000 hours at 105°C  
 (PS2 type: Warranty of 2,000 hours at 85°C, US2 type: Warranty of 2,000 hours at 105°C)

• Conform RoHS

### Features

- The PS2 and US2 series are developed for the primary-side filter of the inverter or servo amplifier control circuit, and suitable for improvement of cost performance, being intended for a large-capacitance and higher ripple current.



### 1) Higher ripple

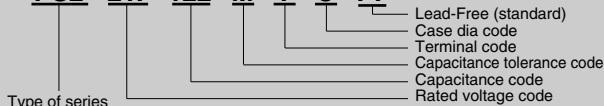
1. Higher ripple through improvement of heat radiation performance by new heat radiation construction.
2. Higher ripple through use of low-ESR material. Consequently, the permissible ripple current is improved by 27% in the windless status or 40% in the ventilated condition (0.5 m/s) as compared with conventional constructions (HP3, HU3 series).

### Product Specifications

Items	Specifications
Temperature range	PS2 ; -40~+85°C (200V.DC~500V.DC) PS2 ; -25~+85°C (550V.DC、600V.DC) US2 ; -40~+105°C
Rated voltage	PS2 ; 200V.DC~600V.DC US2 ; 200V.DC~450V.DC
Capacitance tolerance	±20% (20°C,120Hz)
Leakage current	0.01CV (μA) or 5mA, whichever is smaller or less (20°C,after 5 minutes) [C = nominal capacitance (μF), V = rated voltage (V)]
Dissipation factor	Less than the value specified in the standard products table. (20°C,120Hz)
Permissible ripple current	As specified in the standard products table. PS2 : (85°C,120Hz) US2 : (105°C,120Hz)
Endurance	After the rated voltage with specified ripple current is applied at the maximum operating temperature for 2000 hours, the following values are satisfied. Capacitance change : Within ±15% of initial value Dissipation factor : Not more than 175% of initial value specified Leakage current : Not more than initial value specified
Others	JIS C 5101-4.

Product code : (Example) PS2 type 450V 1,200μF±20%

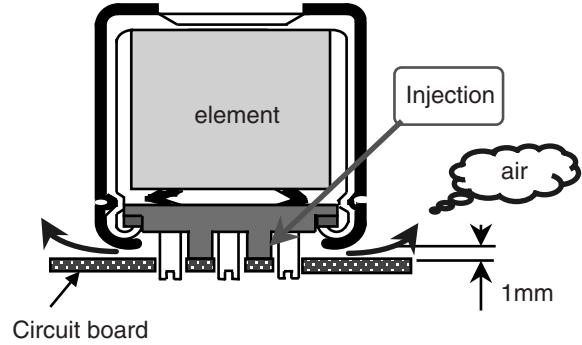
**PS2 2W 122 M T C PF**



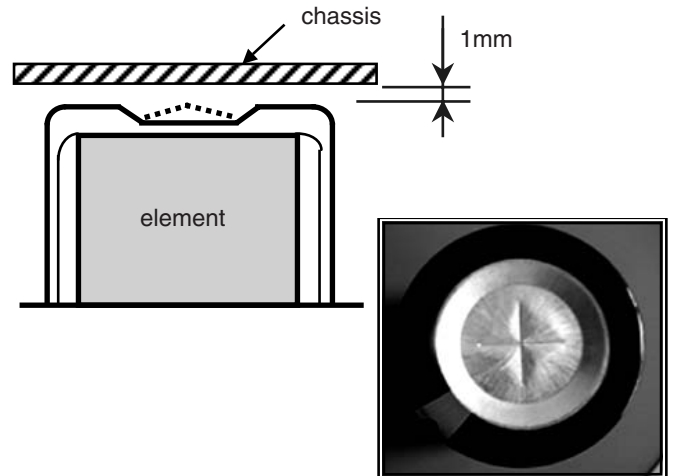
Refer to page (67) for other terminal shape available on request.

### 2) Better installation method

1. The blank (reinforcement) terminal is insulated through improvement of cap construction.
2. Improvement in air exhaust (flow hole phenomenon) from the terminal insertion hole at solder fixing through improvement of cap construction.



3. The operating space of the safety vent (arranged on the case bottom) is reduced from 5 mm (conventional necessary distance) into 1 mm through improvement of case construction. For these new case construction, pattern design can be move flexible.



### Ripple current correction coefficient

#### 1). Temperature correction coefficient

Temperature (°C)	PS2 (85°C)		US2 (105°C)
	200~500V.DC	550V.DC 600V.DC	
40	1.89	1.65	2.50
60	1.51	1.45	2.00
85	1.00	1.00	1.63
105	—	—	1.00

#### 2). Frequency correction coefficient

Frequency (Hz)	PS2, US2	
	200~500V.DC	550V.DC 600V.DC
50/60	0.70	0.70
120	1.00	1.00
300	1.10	1.20
1K	1.30	1.50
10K≤	1.40	1.70

#### 3). Wind speed correction coefficient

Wind speed (m / s)	PS2, US2
0.5>	1.00
0.5≤	1.10

Please consult us when the ripple voltage exceeds 70Vp-p .

"Ripple current should be under 15Arms at dia ø41, ø46(under 20Arms at dia ø51 in accordance with from the permissible current."

# SNAP MOUNT TYPE ALUMINUM ELECTROLYTIC CAPACITORS

Standard Products Table (PS2, 85°C/2000h)

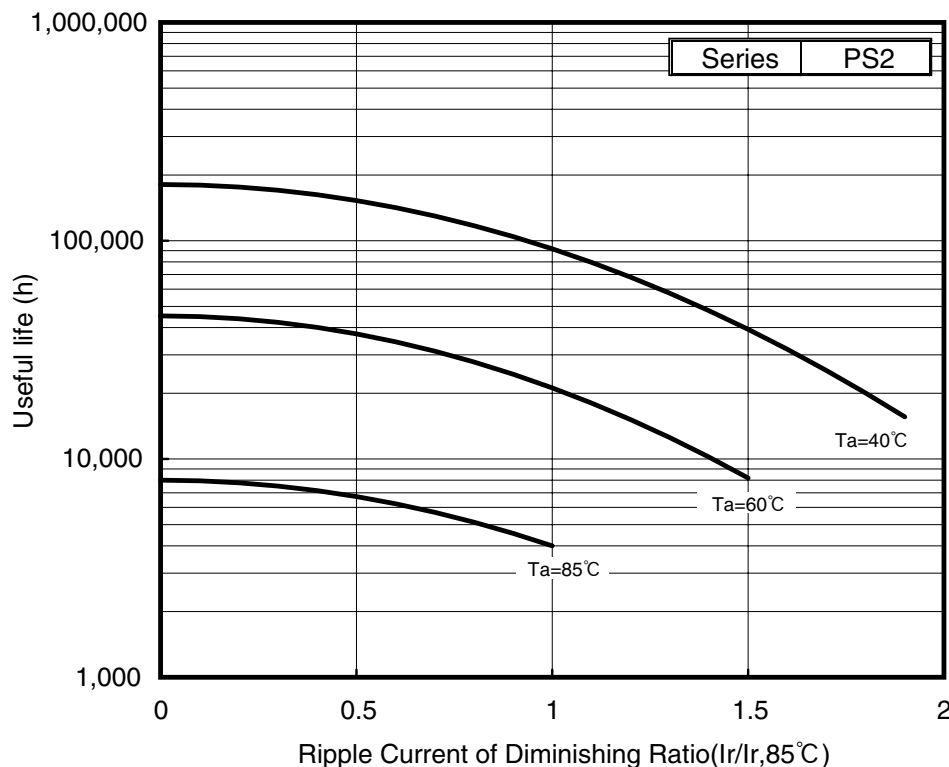
Rated Voltage (V_DC)	Capacitance (μF)	Case size øDXL(mm)	tanδ 20°C,120Hz	Ripple current (Arms) 85°C,120Hz	ESR(typ.) 20°C,100Hz (mΩ)	Product name
200	1800	41×45	0.15	5.78	63	PS22D182MSBPF
	2200	41×55	0.15	6.35	52	PS22D222MSBPF
	2700	46×51	0.15	6.58	42	PS22D272MSHPF
	3300	41×64	0.15	7.46	34	PS22D332MSBPF
		46×61	0.15	7.35	34	PS22D332MSHPF
		51×51	0.15	7.07	35	PS22D332MTCPF
	3900	46×70	0.15	7.98	30	PS22D392MSHPF
		51×61	0.15	7.76	30	PS22D392MTCPF
	4700	51×70	0.15	8.49	25	PS22D472MTCPF
	250	1200	41×45	0.15	4.72	95
1800		41×55	0.15	5.75	63	PS22E182MSBPF
		46×51	0.15	5.37	63	PS22E182MSHPF
2200		41×64	0.15	6.41	52	PS22E222MSBPF
		46×61	0.15	6.00	52	PS22E222MSHPF
2700		51×51	0.15	6.40	43	PS22E272MTCPF
3300		46×70	0.15	7.34	34	PS22E332MSHPF
		51×61	0.15	7.14	34	PS22E332MTCPF
3900		51×70	0.15	7.73	30	PS22E392MTCPF
400		560	41×45	0.15	4.22	132
	680	41×55	0.15	4.62	109	PS22G681MSBPF
	820	46×51	0.15	5.13	90	PS22G821MSHPF
	1000	41×64	0.15	5.66	80	PS22G102MSBPF
		46×61	0.15	5.73	80	PS22G102MSHPF
		51×51	0.15	5.88	80	PS22G102MTCPF
	1200	46×70	0.15	6.26	66	PS22G122MSHPF
		51×61	0.15	6.51	66	PS22G122MTCPF
	1500	51×70	0.15	7.25	53	PS22G152MTCPF
	420	470	41×45	0.15	3.71	158
680		41×55	0.15	4.44	109	PS2420V681MSBPF
		46×51	0.15	4.48	109	PS2420V681MSHPF
820		41×64	0.15	4.92	90	PS2420V821MSBPF
		51×51	0.15	5.11	90	PS2420V821MTCPF
1000		46×61	0.15	5.49	80	PS2420V102MSHPF
1200		46×70	0.15	6.01	66	PS2420V122MSHPF
		51×61	0.15	6.25	66	PS2420V122MTCPF
1500		51×70	0.15	6.96	53	PS2420V152MTCPF

Rated Voltage (V_DC)	Capacitance (μF)	Case size øDXL(mm)	tanδ 20°C,120Hz	Ripple current (Arms) 85°C,120Hz	ESR(typ.) 20°C,100Hz (mΩ)	Product name
450	390	41×45	0.15	3.38	190	PS22W391MSBPF
	560	41×55	0.15	4.03	132	PS22W561MSBPF
	680	46×51	0.15	4.48	109	PS22W681MSHPF
	820	41×64	0.15	4.92	90	PS22W821MSBPF
		46×61	0.15	4.98	90	PS22W821MSHPF
		51×51	0.15	5.11	90	PS22W821MTCPF
	1000	46×70	0.15	5.48	80	PS22W102MSHPF
		51×61	0.15	5.70	80	PS22W102MTCPF
	1200	51×70	0.15	6.22	66	PS22W122MTCPF
	500	330	41×45	0.20	2.96	290
470		41×55	0.20	3.51	210	PS22H471MSBPF
		46×51	0.20	3.54	210	PS22H471MSHPF
560		41×64	0.20	3.87	180	PS22H561MSBPF
		46×61	0.20	4.31	150	PS22H681MSHPF
680		51×51	0.20	4.43	150	PS22H681MTCPF
		46×70	0.20	4.72	120	PS22H821MSHPF
820		51×61	0.20	4.91	120	PS22H821MTCPF
		1000	51×70	0.20	5.40	100
550		220	41×45	0.20	2.33	510
	270	41×55	0.20	2.57	420	PS22L271MSBPF
	330	46×51	0.20	2.87	340	PS22L331MSHPF
	390	41×64	0.20	3.12	290	PS22L391MSBPF
		46×61	0.20	3.15	290	PS22L391MSHPF
		51×51	0.20	3.24	290	PS22L391MTCPF
	560	46×70	0.20	3.77	200	PS22L561MSHPF
		51×61	0.20	3.92	200	PS22L561MTCPF
	680	51×70	0.20	4.31	170	PS22L681MTCPF
	600	180	41×45	0.20	2.11	620
220		41×55	0.20	2.32	510	PS2600V221MSBPF
270		46×51	0.20	2.59	420	PS2600V271MSHPF
330		41×64	0.20	2.87	340	PS2600V331MSBPF
		46×61	0.20	3.15	290	PS2600V391MSHPF
390		51×51	0.20	3.24	290	PS2600V391MTCPF
		46×70	0.20	3.45	240	PS2600V471MSHPF
470		51×61	0.20	3.59	240	PS2600V471MTCPF
		560	51×70	0.20	3.91	200

ALUMINUM ELECTROLYTIC CAPACITORS

## Life time graph

Useful life depending on ambient temperature  $T_a$  and ripple current operating conditions  $I_r$  versus rated ripple current at 85°C, 120Hz



# SNAP MOUNT TYPE ALUMINUM ELECTROLYTIC CAPACITORS

ALUMINUM ELECTROLYTIC CAPACITORS

Standard Products Table (US2, 105°C/2000h)

Rated Voltage (V. DC)	Capacitance (μF)	Case size øDXL (mm)	tanδ 20°C,120Hz	Ripple current (Arms) 105°C,120Hz	ESR(typ.) 20°C,100Hz (mΩ)	Product name
200	1500	41×45	0.15	3.99	76	US22D152MSBPF
	2200	41×55	0.15	4.80	52	US22D222MSBPF
		46×51	0.15	4.49	52	US22D222MSHPF
	2700	41×64	0.15	5.37	42	US22D272MSBPF
		51×51	0.15	4.84	42	US22D272MTCPF
	3300	46×61	0.15	5.56	34	US22D332MSHPF
	3900	46×70	0.15	6.03	30	US22D392MSHPF
		51×61	0.15	5.87	30	US22D392MTCPF
4700	51×70	0.15	6.42	25	US22D472MTCPF	
250	1000	41×45	0.15	3.26	115	US22E102MSBPF
	1500	41×55	0.15	3.96	76	US22E152MSBPF
		41×64	0.15	4.38	63	US22E182MSBPF
	1800	46×51	0.15	4.06	63	US22E182MSHPF
		51×51	0.15	3.95	63	US22E182MTCPF
	2200	46×61	0.15	4.54	52	US22E222MSHPF
	2700	46×70	0.15	5.02	43	US22E272MSHPF
		51×61	0.15	4.88	43	US22E272MTCPF
3300	51×70	0.15	5.38	38	US22E332MTCPF	
400	470	41×45	0.15	2.92	158	US22G471MSBPF
	680	41×55	0.15	3.50	109	US22G681MSBPF
		46×51	0.15	3.53	109	US22G681MSHPF
	820	41×64	0.15	3.87	90	US22G821MSBPF
		51×51	0.15	4.03	90	US22G821MTCPF
	1000	46×61	0.15	4.33	80	US22G102MSHPF
	1200	46×70	0.15	4.73	66	US22G122MSHPF
		51×61	0.15	4.92	66	US22G122MTCPF
1500	51×70	0.15	5.48	53	US22G152MTCPF	

Rated Voltage (V. DC)	Capacitance (μF)	Case size øDXL (mm)	tanδ 20°C,120Hz	Ripple current (Arms) 105°C,120Hz	ESR(typ.) 20°C,100Hz (mΩ)	Product name
420	390	41×45	0.15	2.56	190	US2420V391MSBPF
	560	41×55	0.15	3.04	132	US2420V561MSBPF
	680	46×51	0.15	3.39	109	US2420V681MSHPF
		41×64	0.15	3.72	90	US2420V821MSBPF
	820	46×61	0.15	3.76	90	US2420V821MSHPF
		51×51	0.15	3.87	90	US2420V821MTCPF
	1000	46×70	0.15	4.15	80	US2420V102MSHPF
		51×61	0.15	4.31	80	US2420V102MTCPF
	1200	51×70	0.15	4.71	66	US2420V122MTCPF
	450	330	41×45	0.15	2.35	225
470		41×55	0.15	2.79	158	US22W471MSBPF
		41×64	0.15	3.07	132	US22W561MSBPF
560		46×51	0.15	3.07	132	US22W561MSHPF
		46×61	0.15	3.43	109	US22W681MSHPF
680		51×51	0.15	3.52	109	US22W681MTCPF
		46×70	0.15	3.75	90	US22W821MSHPF
820		51×61	0.15	3.90	90	US22W821MTCPF
		1000	51×70	0.15	4.30	80

## Life time graph

Useful life depending on ambient temperature Ta and ripple current operating conditions Ir versus rated ripple current at 105°C, 120Hz

