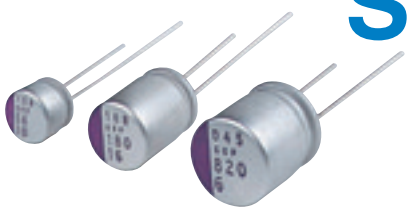
Ⅲ. SPECIFICATIONS FOR EACH SERIES

Conductive polymer type

Radial lead type
105℃ X Guaranteed at 3,000h

SEP Series



This is the SVP series radial lead type using conductive polymer as a solid-electrolyte.
Because of its improved heat-proof characteristics, the rated ripple current values are guaranteed at 105°C. Furthermore, there is no need to apply a temperature-compensating coefficient as specified for other series.
Model indications of the SEP series are stamped on the laminate cases.

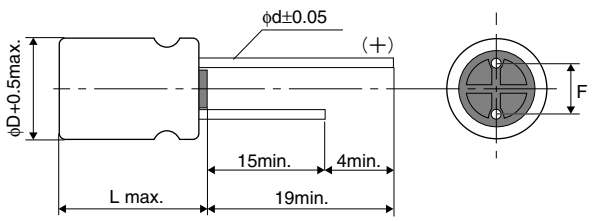
Marking :Polarity(⊖), Rated voltage, Rated capacitance (Purple) Lot.No., SEP

■Specifications

Items	Characteristics		
1. Category temperature range	-55°C to +105°C		
2. Tolerance on rated capacitance (120Hz)	M : ±20%		
3. Tangent of loss angle(tanδ) (120Hz)	Less that or equal to the value of Table6		
4. Leakage current (μA/2min)(or less) ※1	Less that or equal to the value of Table6		
5. ESR (100k to 300kHz)	Less that or equal to the value of Table6		
6. Characteristics at high temp. and low temp. Impedance ratio at 100kHz, +20°C	-55°C	$Z / Z_{20°C}$	0.75 to 1.25
	+105°C	$Z / Z_{20°C}$	0.75 to 1.25
7. Endurance 105°C, 3,000h (2.5WV→2,000h), Rated voltage applied (25WV→20V)	ΔC/C	Within ±20%	
	tanδ	1.5 or less times of an initial standard	
	ESR	1.5 or less times of an initial standard	
	Leakage current	Below an initial standard	
8. Damp heat (Steady state) (60°C, 90 to 95%RH, 1,000h no voltage)	ΔC/C	Within ±20%	
	tanδ	1.5 or less times of an initial standard	
	ESR	1.5 or less times of an initial standard	
	Leakage current	Below the initial standard of an after voltage processing	

※1 In case of some problems for measured values, measure after applying rated voltage for 2.5 to 20V products or temperature derating voltage for 25V products for 120 minutes at 105°C .

■Dimensions



(unit : mm)

Size Code	C6	E7	F8	E12	F13
φD	6.3	8.0	10.0	8.0	10.0
L(max.)	6.0	7.0	8.0	12.0	13.0
F(±0.5)	2.5	3.5	5.0	3.5	5.0
φd	0.45	0.45	0.50	0.60	0.60

■Size List

WV : Rated voltage (SV) : Surge (room temperature)

μF \ WV (SV)	2.5 (3.3)	4 (5.2)	6.3 (8.2)	10 (11.5)	16 (18.4)	20 (23)	25 (25)
6.8							C6
10							E7
22						C6	F8
27							
33						E7	E12
39					C6		
47						E7	
56				C6		F8	F13
68						F8	
82			C6		E7		
100		C6				E12	
120				E7			
150		C6	E7		F8	F13	
180					E12		
220		E7					
270				F8			
330		E7	F8	E12	F13		
470		F8	E12				
560		E12		F13			
680	E12	F8					
820			F13				
1200		F13					
1500	F13						

※For the minimum packing quantity, see page 41.

Ⅲ. SPECIFICATIONS FOR EACH SERIES

■Table6 SEP Series Characteristics List

Size Code	Part Number ※1	Rated Voltage (V)	Rated Capacitance (μF)	ESR (100kHz to 300kHz) (mΩ) (max.)	Rated ripple current (mArms)※2	Tangent of loss angle (max.)	Leakage current (μA) (max.)※3
C6	25SEP6R8M	25	6.8	80	1200	0.10	170
	20SEP22M	20	22	60	1450	0.10	220
	16SEP39M	16	39	50	1620	0.10	312
	10SEP56M	10	56	45	1700	0.12	280
	6SEP82M	6.3	82	45	1700	0.12	258
	4SEP100M	4	100	40	1810	0.12	200
	4SEP150M	4	150	40	1810	0.12	300
E7	25SEP10M	25	10	60	1500	0.10	250
	20SEP33M	20	33	45	1890	0.12	330
	20SEP47M	20	47	45	1890	0.12	470
	16SEP82M	16	82	40	2120	0.12	656
	10SEP120M	10	120	35	2560	0.12	600
	6SEP150M	6.3	150	35	2560	0.12	472
	4SEP220M	4	220	35	2560	0.12	440
	4SEP330M	4	330	35	2560	0.12	660
F8	25SEP22M	25	22	50	2000	0.10	275
	20SEP56M	20	56	40	2400	0.12	224
	20SEP68M	20	68	40	2400	0.12	272
	16SEP150M	16	150	30	3020	0.12	480
	10SEP270M	10	270	25	3700	0.12	540
	6SEP330M	6.3	330	25	3700	0.12	416
	4SEP470M	4	470	25	3700	0.12	376
	4SEP680M	4	680	25	3700	0.12	544
E12	25SEP33M	25	33	30	2980	0.12	413
	20SEP100M	20	100	24	3320	0.15	400
	16SEP180M	16	180	20	3640	0.15	576
	10SEP330M	10	330	17	3950	0.15	660
	6SEP470M	6.3	470	15	4210	0.15	592
	4SEP560M	4	560	13	4520	0.15	448
	2R5SEP680M	2.5	680	13	4520	0.15	340
F13	25SEP56M	25	56	28	3800	0.12	700
	20SEP150M	20	150	20	4320	0.15	600
	16SEP330M	16	330	16	4720	0.15	792
	10SEP560M	10	560	13	5230	0.15	840
	6SEP820M	6.3	820	12	5440	0.15	775
	4SEP1200M	4	1200	12	5440	0.18	960
	2R5SEP1500M	2.5	1500	12	5440	0.18	750

※1 Capacitance tolerance : M ; ±20%
※2 100kHz, +105°C
※3 After 2 minutes