

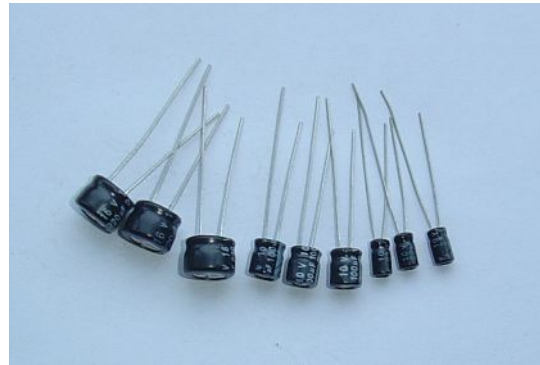
SM 105°C Series

Features

■ Mini-size with 5mm Height

■ Applicable Standard

JIS C 5102 & JIS C 5141



■ Rated Working Voltage Range & Operation Temperature Range

4 to 50 v DC/ -40 to +105°C

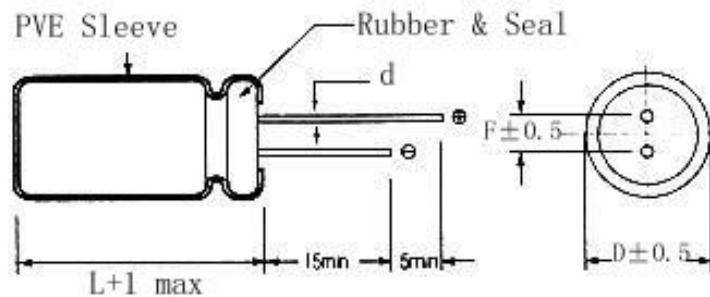
■ This series is compliant with the requirement of RoHS and widely used for electronic products, such as Camera, Car HiFi, Adapter, Electronic Instruments, Electronic Medical Apparatus , etc.

■ Specifications

Item	Performance Characteristics				
Rated Working Voltage Range	4 to 50v DC				
Operating Temperature Range	-40 to +105°C				
Nominal Capacitance Range	0.1 to 470uF				
Capacitance Tolerance	±20%(120Hz, +20°C)				
Leakage Current	$I_L \leq 0.01CV$ or $3(\mu A)$ Whichever is bigger measured after 1 minute application of rated working voltage at +20°C				
tg δ (120Hz, +20°C)	Working Voltage (v)	4	6.3	10	16
	tg δ (max.)	0.35	0.24	0.20	0.16
	Working Voltage (v)	25	35	50	
	tg δ (max.)	0.14	0.12	0.10	

Frequency Coefficient of Rated Ripple Current	Frequency	60Hz	120Hz	300Hz	1KHz	10KHz
	Coefficient	0.70	1.00	1.17	1.36	1.50
Stability at Low Temperature	Impedance ratio max. at 120Hz					
	Working Voltage (v)	4	6.3	10	16	
	-25°C/+20°C	7	4	3	2	
	-40°C/+20°C	15	8	6	4	
	Working Voltage (v)	25	35	50		
	-25°C/+20°C	2	2	2		
-40°C/+20°C	4	3	3			
High Temperature Loading	Test conditions: Duration: 3000 hours Ambient temperature: +105°C Applied: DC voltage with maximum permissible ripple current should be equal to rated working voltage. Post test requirement at +20°C Leakage current: \leq Initial specified value. Capacitance change: $\leq \pm 20$ of initial measured value. $\text{tg } \delta$: $\leq 200\%$ of initial measured value.					
	Test conditions: Duration: 3000 hours Ambient temperature: +105°C Applied: (None) Post test requirement at +20°C Leakage current: \leq Initial specified value. Capacitance change: $\leq \pm 20$ of initial measured value. $\text{tg } \delta$: $\leq 200\%$ of initial measured value.					
Shelf Life	Test conditions: Duration: 3000 hours Ambient temperature: +105°C Applied: (None) Post test requirement at +20°C Leakage current: \leq Initial specified value. Capacitance change: $\leq \pm 20$ of initial measured value. $\text{tg } \delta$: $\leq 200\%$ of initial measured value.					
	Test conditions: Duration: 3000 hours Ambient temperature: +105°C Applied: (None) Post test requirement at +20°C Leakage current: \leq Initial specified value. Capacitance change: $\leq \pm 20$ of initial measured value. $\text{tg } \delta$: $\leq 200\%$ of initial measured value.					

■ Diagram of Dimension (Unit: mm)



ΦD	3	4	5	6	8
F	1.0 ± 0.3	1.5 ± 0.5	2.0 ± 0.5	2.5 ± 0.5	3.5 ± 0.5
ϕd	0.4	0.45	0.45	0.45	0.5

■ Dimensions (D×L mm)

μF \ WV (SV)	4 (5)	6.3 (8)	10 (13)	16 (20)	25 (32)	35 (44)	50 (63)
0.1							3(4)×5
0.22							3(4)×5
0.33							3(4)×5
0.47							3(4)×5
1.0							3(4)×5
2.2						3(4)×5	3(4)×5
3.3					3(4)×5	3(4)×5	3(4)×5
4.7				3×5	4×5	4×5	4×5
10		3×5	3×5	3×5	4×5	5×5	5×5
22	3×5	3×5	4×5	4×5	5×5	5×5	6×5
33	4×5	5×5	5×5	5×5	5×5	6×5	6×5
47	4×5	4×5	5×5	5×5	6×5	6×5	
100	5×5	5×5	6×5	6×5	8×5		
220	5×5	6×5	6×5	8×5			
330	8×5	8×5					
470	8×5						

* The sizes of e-cap. will be changed as a result of the raw materials being continuously developed and improved. The sizes of e-cap. are subject to change without notice, and so the sizes are based on our offering samples.

■ Maximum Ripple Current

At 105°C/120Hz (Unit: mA)

μF \ V	4	6.3	10	16	25	35	50
0.1							1.0
0.22							2.0
0.33							2.8
0.47							4.0
1.0							8.0
2.2						8.4	10
3.3					10	10	17
4.7				10	12	18	20
10		15	16	18	27	29	33

$\mu F \backslash V$	4	6.3	10	16	25	35	50
22	19	21	33	37	42	46	48
33	28	37	41	43	52	52	48
47	33	45	43	58	62	80	
100	56	68	76	86	110		
220	96	90	135				
330	145	170					
470	185						