

SF Series

Radial lead type.5mm height (max.)

The SF series is low-profile, having a maximum height of 5mm. Use this series for smooth power supply of notebook PCs.

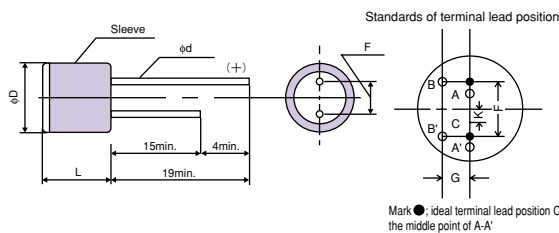


Specifications

Items	Conditions	Characteristics		
Category temperature range	—	-55°C to +105°C		
Tolerance on rated capacitance	120Hz	M : ±20%		
Tangent of loss angle	120Hz	Less than or equal to the value of Table11		
Leakage current ※1	After 2 minutes	Less than or equal to the value of Table11		
ESR	—	Less than or equal to the value of Table11		
Characteristics of impedance ratio at high temp. and low temp.	Based the value 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
Endurance	105°C, 2,000h, Rated voltage applied	ΔC/C	Within ±20%	
		tanδ	1.5 times or less than an initial standard	
		Leakage current	Below an initial standard	
Damp heat (Steady state)	60°C, 90 to 95% RH, No-applied voltage 500h,	ΔC/C	Within ±20%	
		tanδ	2 times or less than an initial standard	
		Leakage current	Below an initial standard	
Resistance to soldering heat	Flow method (260±5°C X 10s)	ΔC/C	Within ±5%	
		tanδ	1.5 times or less than an initial standard	
		Leakage current	Below an initial standard (after voltage processing)	

※1 In case of some problems for measured values, measure after applying rated voltage for 30 minutes at 105°C.

Dimensions



(unit : mm)

Size Code	φD+0.5max.	Lmax.	F	φd±0.05
E1	8.0	5.0	3.5±0.5	0.6

Size List

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

μF	RV (SV)	4.0 (5.2)	6.3 (8.2)
150			E1
220		E1	

※For the minimum packing quantity, please refer to page 53.

Table11 SF Series Characteristics List

Size Code	Part Number ※1	Rated Voltage (V)	Rated Capacitance (μF)	ESR 100kHz to 300kHz (mΩ) (max.)	Allowable ripple current (mA _{rms})※3	Tangent of loss angle (max.)	Leakage current (μA) (max.)※2
E1	6SF150M	6.3	150	32	2420	0.07	189
	4SF220M	4	220	30	2510	0.07	176

※1 Capacitance tolerance : M ±20%

※2 After 2 minutes

※3 100kHz, +45°C

Temperature coefficient for allowable ripple current

Ambient Temp.	$T_x \leq 45^\circ\text{C}$	$45^\circ\text{C} < T_x \leq 65^\circ\text{C}$	$65^\circ\text{C} < T_x \leq 85^\circ\text{C}$	$85^\circ\text{C} < T_x \leq 95^\circ\text{C}$	$95^\circ\text{C} < T_x \leq 105^\circ\text{C}$
Coefficient	1	0.85	0.7	0.4	0.25

Frequency coefficient for allowable ripple current

Frequency	$120\text{Hz} \leq f < 1\text{kHz}$	$1\text{kHz} \leq f < 10\text{kHz}$	$10\text{kHz} \leq f < 100\text{kHz}$	$100\text{kHz} \leq f \leq 500\text{kHz}$
Coefficient	0.05	0.2	0.5	1