



Specifications

Items	Condition	Specifications				
Rated voltage (V)	—	16	20	25	32	35
Surge voltage (V)	Room temperature	18	23	29	37	40
Category temperature range (°C)	—	-55 to +105				
Capacitance tolerance (%)	120Hz/20°C	M : ±20				
Dissipation Factor (DF)	120Hz/20°C	Please see the attached characteristics list				
Leakage current※1	Rated voltage applied, after 2 minutes	Please see the attached characteristics list				
Equivalent series resistance (ESR)	100kHz to 300kHz/20°C	Please see the attached characteristics list				
Characteristics of impedance ratio at high temp. and low temp.	Based the value at 100kHz, +20°C	-55°C	Z/Z20°C	0.75 to 1.25		
		+105°C	Z/Z20°C	0.75 to 1.25		
Endurance	105°C, 5,000h, Rated voltage applied	ΔC/C	Within ±20% of the initial value			
		DF	Within 1.5 times of the initial limit			
		ESR	Within 1.5 times of the initial limit			
		LC	Within the initial limit			
Damp heat(Steady state)	60°C, 90 to 95%RH, 1,000h, No-applied voltage	ΔC/C	Within ±20% of the initial value			
		DF	Within 1.5 times of the initial limit			
		ESR	Within 1.5 times of the initial limit			
		LC	Within the initial limit (after voltage processing)			
Resistance to soldering heat※2	Flow method (260±5°C X 10s)	ΔC/C	Within ±5% of the initial value			
		DF	Within the initial limit			
		ESR	Within the initial limit			
		LC	Within the initial limit (after voltage processing)			

※1 In case of some problems for measured values, measure after applying rated voltage for 120 minutes at 105°C.

※2 Please refer to page 25 for flow soldering conditions.

Marking and dimensions

Polarity marking (Cathode)		Case No.	Series	(SEPF)	Rated capacitance	Rated voltage
223 SEPF 68 32						
φD		L	15min.	4min.	19min.	(unit : mm)
φd						
L						
φD ±0.5		L max	F	φd ±0.05		
C55		6.3	5.5	2.5±0.5	0.45	
C6		6.3	6.0	2.5±0.5	0.5	
E7		8.0	7.0	3.5±0.5	0.5※	
E12		8.0	12.0	3.5±0.5	0.6	
F13		10.0	13.0	5.0±0.5	0.6	

※3 32SEPF68M is 0.6±0.05

Size list

RV : Rated voltage

μF	RV	16	20	25	32	35
22					C55	C6
39						E7
56					C6	
68					E7	
82				E7		E12
120		C6				F13
150	C55					
180	C6	E7	E12			
270	E7					
330			F13			
390			E12			
560	E12	F13				
1,000	F13					

SEPF series characteristics list

Size code	Part number	Rated voltage (V)	Rated capacitance (μF)	ESR(mΩ) (max) 100kHz to 300kHz/20°C	Rated ripple current 100kHz (mA _{RMS}) at 105°C	DF (% max)	Leakage current (μA) (max) After 2 minutes
C55	32SEPF22M	32	22	35	2400	12	140
	16SEPF150M	16	150	30	2590	12	480
C6	35SEPF22M	35	22	35	2600	12	154
	25SEPF56M	25	56	30	2800	12	280
	20SEPF120M	20	120	25	3200	12	480
	16SEPF180M	16	180	22	3300	12	576
E7	35SEPF39M	35	39	30	2800	12	273
	32SEPF68M	32	68	25	3200	10	435
	25SEPF82M	25	82	28	3000	12	410
	20SEPF180M	20	180	25	3200	12	720
	16SEPF270M	16	270	22	3300	12	864
E12	35SEPF82M	35	82	20	4000	12	574
	25SEPF180M	25	180	16	4650	12	900
	20SEPF390M	20	390	14	4950	12	1560
	16SEPF560M	16	560	14	4950	12	1792
F13	35SEPF120M	35	120	18	4400	12	840
	25SEPF330M	25	330	14	5000	12	1650
	20SEPF560M	20	560	12	5400	12	2240
	16SEPF1000M	16	1000	12	5400	12	3200

Frequency coefficient for ripple current

Frequency	120Hz ≤ f < 1kHz	1kHz ≤ f < 10kHz	10kHz ≤ f < 100kHz	100kHz ≤ f ≤ 500kHz
Coefficient	0.05	0.3	0.7	1