

OS-CON Line-up

Guidelines and precautions for use

Series system diagram  
Image of case size  
Products list  
Packing specifications (SMD type)  
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Selection guide

Recommended soldering condition  
Fundamental structure  
Characteristics  
Reliability

Technical data

SVPF  
SVPE  
SVPS  
SVPD  
SVPC  
SVPB  
SVPA  
SVQP  
SVP

Surface mount type

SEPF  
SEPC  
SEQP  
SEP

Radial lead type

Catalog Deletion and EOL series

POSCAP

Line-up

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Series system diagram  
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Products list  
Explanation of part numbers  
Packing specifications

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Marking  
Recommended land pattern dimension  
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Technical data

TPU  
TPH  
TPG  
TPSF  
TPE  
TPB/TPC  
TPL·TPLF  
TPF  
TA  
TV  
TH  
TQC

Surface mount type

Catalog Deletion and EOL models

SEPF is designed as the high voltage version of SEPC series.  
Ideal for use in high voltage lines such as the input side of DC/DC converters.  
Lead free-flow is supported.\*2



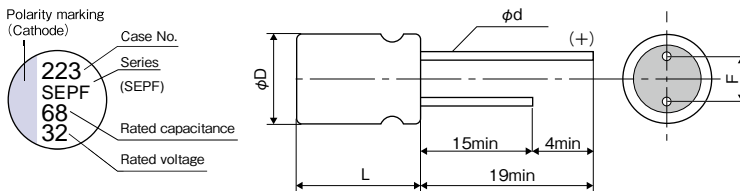
## Specifications

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/Z <sub>20°C</sub>	0.75 to 1.25				
		+105°C	Z/Z <sub>20°C</sub>	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%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 13 for flow soldering conditions.

## Marking and dimensions



## Size list

RV : Rated voltage

(unit : mm)

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

Size code	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*3
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

## ● SEPF series characteristics list

Size code	Part number	Rated voltage (V)	Rated capacitance ( $\mu$ F)	ESR (m $\Omega$ ) (max) 100kHz to 300kHz/20°C	Rated ripple current 100kHz (mA <sub>rms</sub> ) at 105°C	DF (% max)	Leakage current ( $\mu$ A)(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 $\leq$ f < 1kHz	1kHz $\leq$ f < 10kHz	10kHz $\leq$ f < 100kHz	100kHz $\leq$ f $\leq$ 500kHz
Coefficient	0.05	0.3	0.7	1