

## Radial Lead Type



### Series : SEF

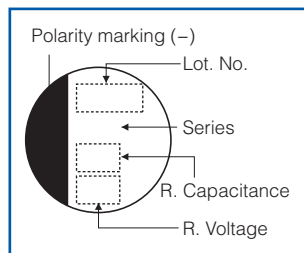
#### Features

- High voltage (35 V.DC max.)
- Large capacitance (1000  $\mu$ F max.)
- RoHS compliance, Halogen free

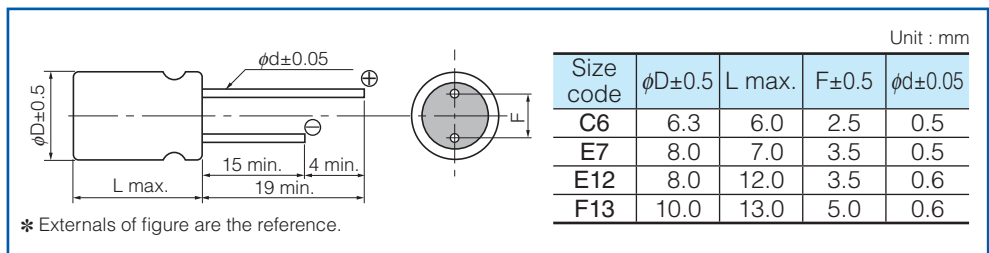
#### Specifications

Size code	C6	E7	E12	F13
Category temperature range	-55 °C to +125 °C			
Rated voltage range	16 V.DC to 35 V.DC			
Rated capacitance range	22 $\mu$ F to 180 $\mu$ F	39 $\mu$ F to 270 $\mu$ F	82 $\mu$ F to 560 $\mu$ F	120 $\mu$ F to 1000 $\mu$ F
Capacitance tolerance	$\pm$ 20 % (120 Hz / + 20 °C)			
Leakage current	Please see the attached characteristics list			
Dissipation factor (tan $\delta$ )	Please see the attached characteristics list			
Endurance	+125 °C, 1000 h, rated voltage applied			
	Capacitance change	Within $\pm$ 20 % of the initial value		
	tan $\delta$	$\leq$ 200 % of the initial limit		
	DC leakage current	Within the initial limit		
Damp heat (Steady State)	+60 °C, 90 % to 95 %, 1000 h, No-applied voltage			
	Capacitance change	Within $\pm$ 20 % of the initial value		
	tan $\delta$	$\leq$ 150 % of the initial limit		
	DC leakage current	Within the initial limit (after voltage processing)		

#### Marking



#### Dimensions (not to scale)



#### Characteristics list

Series	Rated voltage (V.DC)	Rated capacitance ( $\mu$ F)	Case size (mm)			Specifications					Part number
			$\phi$ D	L	Size code	Ripple current* <sup>1</sup> (mAr.m.s.)	Allowable* <sup>1</sup> ripple current (mAr.m.s.)	ESR* <sup>2</sup> (m $\Omega$ max.)	tan $\delta$ * <sup>3</sup>	LC* <sup>4</sup> ( $\mu$ A)	
SEF	16	180	6.3	6.0	C6	1040	3300	22	0.12	576	16SEF180M
		270	8.0	7.0	E7	1040	3300	22	0.12	864	16SEF270M
		560	8.0	12.0	E12	1560	4950	14	0.12	1792	16SEF560M
		1000	10.0	13.0	F13	1700	5400	12	0.12	3200	16SEF1000M
	20	120	6.3	6.0	C6	1010	3200	25	0.12	480	20SEF120M
		180	8.0	7.0	E7	1010	3200	25	0.12	720	20SEF180M
		390	8.0	12.0	E12	1560	4950	14	0.12	1560	20SEF390M
		560	10.0	13.0	F13	1700	5400	12	0.12	2240	20SEF560M
	25	56	6.3	6.0	C6	880	2800	30	0.12	280	25SEF56M
		82	8.0	7.0	E7	940	3000	28	0.12	410	25SEF82M
		180	8.0	12.0	E12	1470	4650	16	0.12	900	25SEF180M
		330	10.0	13.0	F13	1580	5000	14	0.12	1650	25SEF330M
	35	22	6.3	6.0	C6	820	2600	35	0.12	154	35SEF22M
		39	8.0	7.0	E7	880	2800	30	0.12	273	35SEF39M
		82	8.0	12.0	E12	1260	4000	20	0.12	574	35SEF82M
		120	10.0	13.0	F13	1390	4400	18	0.12	840	35SEF120M

\*<sup>1</sup> Ripple current (100 kHz/ +105 °C < Tx  $\leq$  +125 °C) / Allowable ripple current (100 kHz/ Tx  $\leq$  +105 °C), \*<sup>2</sup> ESR (100 kHz to 300 kHz/+20 °C)

\*<sup>3</sup> tan  $\delta$  (120 Hz/+20 °C) \*<sup>4</sup> After 2 minutes

◆ Please refer to each page in this catalog for "Flow conditions" and "Taping specifications".

#### Frequency correction factor for ripple current

Frequency	120 Hz $\leq$ f < 1 kHz	1 kHz $\leq$ f < 10 kHz	10 kHz $\leq$ f < 100 kHz	100 kHz $\leq$ f < 500 kHz
Coefficient	0.05	0.3	0.7	1