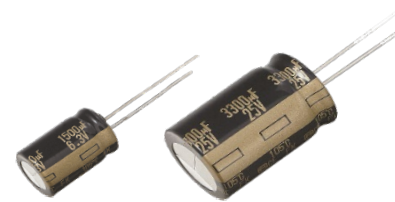


Aluminum Electrolytic Capacitors

Radial Lead Type

FK-A series



■ Not available in Japan

Features

- Endurance : 105 °C 3000 h to 5000 h
- Low impedance (10 % to 30 % less than FC Series)
- Miniaturization (30 % to 40 % less than FC Series)
- AEC-Q200 compliant
- RoHS compliant

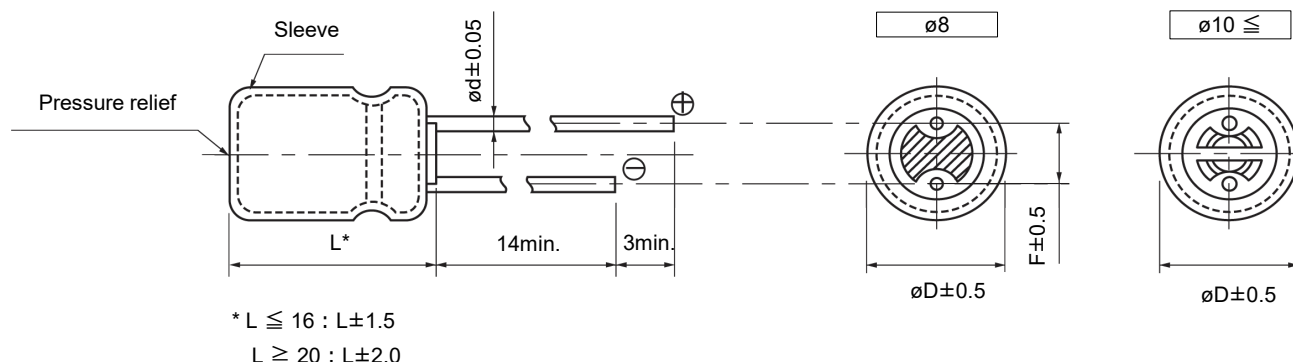
Specifications

Category temp. range	-55 °C to +105 °C						
Rated voltage range	6.3 V to 35 V						
Capacitance range	180 µF to 12000 µF						
Capacitance tolerance	±20 % (120 Hz / +20°C)						
Leakage current	I ≤ 0.01 CV (µA) After 2 minutes						
Dissipation factor (tan δ)	Rated voltage (V)	6.3	10	16	25	35	(120 Hz /+20°C)
	Dissipation factor (tan δ)	0.22	0.19	0.16	0.14	0.12	
For capacitance value ≥ 1000 µF , add 0.02 per every 1000 µF.							
Endurance	After following life test with DC voltage and +105 °C±2 °C ripple current value applied (The sum of DC and ripple peak voltage shall not exceed the rated working voltage)when the capacitors are restored to 20 °C, the capacitors shall meet the limits specified bellow. Duration ø8 : 3000 h, ø10 : 4000 h, ø12.5 to ø18 : 5000 h						
	Capacitance change		Within ±20 % of the initial value				
	Dissipation factor (tan δ)		≤ 200 % of the initial limit				
	DC leakage current		Within the initial limit				
Shelf life	After storage for 1000 h at +105 °C±2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in endurance. (With voltage treatment)						

Frequency correction factor for ripple current

Cap. (µF) \ Freq. (Hz)	60	120	1 k	10 k	100 k
180 to 330	0.60	0.70	0.85	0.95	1.00
390 to 1000	0.65	0.75	0.90	0.98	1.00
1200 to 12000	0.75	0.80	0.95	1.00	1.00

Dimensions



	Unit : mm					
øD	8.0	10.0	12.5		16.0	18.0
L	—	—	12.5 to 25	30 to 35	—	—
ød	0.6	0.6	0.6	0.8	0.8	0.8
F	3.5	5.0	5.0	5.0	7.5	7.5

Case size / Impedance / Ripple current			
Case size (mm) ($\varnothing D \times L$)	Impedance (Ω) (100 kHz)		Ripple current (mA rms) (100 kHz)
	+20 °C	-10 °C	+105 °C
8 × 11.5	0.090	0.180	630
8 × 15	0.062	0.124	860
8 × 20	0.044	0.088	1220
10 × 12.5	0.063	0.126	900
10 × 16	0.049	0.098	1240
10 × 20	0.035	0.070	1490
10 × 25	0.033	0.066	1680
10 × 30	0.025	0.050	2140
12.5 × 15	0.048	0.096	1400
12.5 × 20	0.029	0.058	1890
12.5 × 25	0.022	0.044	2280
12.5 × 30	0.018	0.036	2720
12.5 × 35	0.016	0.032	2940
12.5 × 40	0.014	0.028	3010
16 × 15	0.038	0.076	1800
16 × 20	0.026	0.052	2330
16 × 25	0.019	0.038	2760
18 × 15	0.036	0.072	2060
18 × 20	0.025	0.050	2640
18 × 25	0.018	0.036	2850

Characteristics list

Endurance : 105 °C 3000 h / ø8, 105 °C 4000 h / ø10, 105 °C 5000 h / ø12.5 to ø18

Rated voltage (V)	Capacitance (±20 %) (μF)	Case size (mm)		Specification			Lead length (mm)			Part No.	Min. Packaging Q'ty (PCS)		
		øD	L	Ripple current ^{*1} (mA rms)	Impe- dance ^{*2} (Ω)	Endu- rance (h)	Lead dia. (ød)	Lead space			Straight leads	Taping	
								Straight	Taping *B				
6.3	680	8.0	11.5	630	0.090	3000	0.6	3.5	5.0	EEUFK0J681()	200	1000	
	1000	8.0	15.0	860	0.062	3000	0.6	3.5	5.0	EEUFK0J102L()	200	1000	
			10.0	12.5	900	0.063	4000	0.6	5.0	5.0	EEUFK0J102()	200	500
	1500	8.0	20.0	1220	0.044	3000	0.6	3.5	5.0	EEUFK0J152L()	200	1000	
			10.0	16.0	1240	0.049	4000	0.6	5.0	5.0	EEUFK0J152()	200	500
	1800	12.5	15.0	1400	0.048	5000	0.6	5.0	5.0	EEUFK0J182S()	200	500	
	2200	10.0	20.0	1490	0.035	4000	0.6	5.0	5.0	EEUFK0J222()	200	500	
			10.0	25.0	1680	0.033	4000	0.6	5.0	5.0	EEUFK0J222L()	200	500
	3300	10.0	30.0	2140	0.025	4000	0.6	5.0	—	EEUFK0J332L	100	—	
			12.5	20.0	1890	0.029	5000	0.6	5.0	5.0	EEUFK0J332()	200	500
			16.0	15.0	1800	0.038	5000	0.8	7.5	7.5	EEUFK0J332S()	100	250
	4700	12.5	25.0	2280	0.022	5000	0.6	5.0	5.0	EEUFK0J472()	200	500	
			18.0	15.0	2060	0.036	5000	0.8	7.5	7.5	EEUFK0J472S()	100	250
	5600	12.5	30.0	2720	0.018	5000	0.8	5.0	—	EEUFK0J562L	100	—	
			16.0	20.0	2330	0.026	5000	0.8	7.5	7.5	EEUFK0J562S()	100	250
		6800	12.5	35.0	2940	0.016	5000	0.8	5.0	—	EEUFK0J682L	100	—
	EOL	8200	12.5	40.0	3010	0.014	5000	0.8	5.0	—	EEUFK0J822L	100	—
	8200		16.0	25.0	2760	0.019	5000	0.8	7.5	7.5	EEUFK0J822()	100	250
			18.0	20.0	2640	0.025	5000	0.8	7.5	7.5	EEUFK0J822S()	100	250
	12000	18.0	25.0	2850	0.018	5000	0.8	7.5	7.5	EEUFK0J123S()	100	250	
10	560	8.0	11.5	630	0.090	3000	0.6	3.5	5.0	EEUFK1A561()	200	1000	
	820	8.0	15.0	860	0.062	3000	0.6	3.5	5.0	EEUFK1A821L()	200	1000	
			10.0	12.5	900	0.063	4000	0.6	5.0	5.0	EEUFK1A821()	200	500
	1200	8.0	20.0	1220	0.044	3000	0.6	3.5	5.0	EEUFK1A122L()	200	1000	
			10.0	16.0	1240	0.049	4000	0.6	5.0	5.0	EEUFK1A122()	200	500
	1500	12.5	15.0	1400	0.048	5000	0.6	5.0	5.0	EEUFK1A152S()	200	500	
	1800	10.0	20.0	1490	0.035	4000	0.6	5.0	5.0	EEUFK1A182()	200	500	
			10.0	25.0	1680	0.033	4000	0.6	5.0	5.0	EEUFK1A182L()	200	500
	2700	10.0	30.0	2140	0.025	4000	0.6	5.0	—	EEUFK1A272L	100	—	
			12.5	20.0	1890	0.029	5000	0.6	5.0	5.0	EEUFK1A272()	200	500
			16.0	15.0	1800	0.038	5000	0.8	7.5	7.5	EEUFK1A272S()	100	250
	3900	12.5	25.0	2280	0.022	5000	0.6	5.0	5.0	EEUFK1A392()	200	500	
			18.0	15.0	2060	0.036	5000	0.8	7.5	7.5	EEUFK1A392S()	100	250
	4700	12.5	30.0	2720	0.018	5000	0.8	5.0	—	EEUFK1A472L	100	—	
			16.0	20.0	2330	0.026	5000	0.8	7.5	7.5	EEUFK1A472S()	100	250
		5600	12.5	35.0	2940	0.016	5000	0.8	5.0	—	EEUFK1A562L	100	—
	EOL	6800	12.5	40.0	3010	0.014	5000	0.8	5.0	—	EEUFK1A682L	100	—
	6800		16.0	25.0	2760	0.019	5000	0.8	7.5	7.5	EEUFK1A682()	100	250
			18.0	20.0	2640	0.025	5000	0.8	7.5	7.5	EEUFK1A682S()	100	250
		8200	18.0	25.0	2850	0.018	5000	0.8	7.5	7.5	EEUFK1A822S()	100	250

*1: Ripple current (100 kHz / +105 °C)

EOL End of life

*2: Impedance (100 kHz / +20 °C)

• When requesting taped product, please put the letter "B" between the "()". Lead wire pitch *B=5 mm, 7.5 mm.

• Please refer to the page of "Taping dimensions".

Characteristics list

Endurance : 105 °C 3000 h / ø8, 105 °C 4000 h / ø10, 105 °C 5000 h / ø12.5 to ø18

Rated voltage (V)	Capacitance (±20 %) (μF)	Case size (mm)		Specification			Lead length (mm)			Part No.	Min. Packaging Q'ty (PCS)	
		øD	L	Ripple current ^{*1} (mA rms)	Impe- dance ^{*2} (Ω)	Endu- rance (h)	Lead dia. (ød)	Lead space			Straight leads	Taping
								Straight	Taping *B			
16	390	8.0	11.5	630	0.090	3000	0.6	3.5	5.0	EEUFK1C391()	200	1000
	680	8.0	15.0	860	0.062	3000	0.6	3.5	5.0	EEUFK1C681L()	200	1000
		10.0	12.5	900	0.063	4000	0.6	5.0	5.0	EEUFK1C681()	200	500
	820	8.0	20.0	1220	0.044	3000	0.6	3.5	5.0	EEUFK1C821L()	200	1000
	1000	10.0	16.0	1240	0.049	4000	0.6	5.0	5.0	EEUFK1C102()	200	500
	1200	10.0	20.0	1490	0.035	4000	0.6	5.0	5.0	EEUFK1C122()	200	500
		12.5	15.0	1400	0.048	5000	0.6	5.0	5.0	EEUFK1C122S()	200	500
	1500	10.0	25.0	1680	0.033	4000	0.6	5.0	5.0	EEUFK1C152L()	200	500
	2200	10.0	30.0	2140	0.025	4000	0.6	5.0	—	EEUFK1C222L	100	—
		12.5	20.0	1890	0.029	5000	0.6	5.0	5.0	EEUFK1C222()	200	500
		16.0	15.0	1800	0.038	5000	0.8	7.5	7.5	EEUFK1C222S()	100	250
	2700	12.5	25.0	2280	0.022	5000	0.6	5.0	5.0	EEUFK1C272()	200	500
		18.0	15.0	2060	0.036	5000	0.8	7.5	7.5	EEUFK1C272S()	100	250
	3300	12.5	30.0	2720	0.018	5000	0.8	5.0	—	EEUFK1C332L	100	—
	3900	12.5	35.0	2940	0.016	5000	0.8	5.0	—	EEUFK1C392L	100	—
		16.0	20.0	2330	0.026	5000	0.8	7.5	7.5	EEUFK1C392S()	100	250
EOL	4700	12.5	40.0	3010	0.014	5000	0.8	5.0	—	EEUFK1C472L	100	—
	4700	18.0	20.0	2640	0.025	5000	0.8	7.5	7.5	EEUFK1C472S()	100	250
	5600	16.0	25.0	2760	0.019	5000	0.8	7.5	7.5	EEUFK1C562()	100	250
	6800	18.0	25.0	2850	0.018	5000	0.8	7.5	7.5	EEUFK1C682S()	100	250
25	270	8.0	11.5	630	0.090	3000	0.6	3.5	5.0	EEUFK1E271()	200	1000
	390	8.0	15.0	860	0.062	3000	0.6	3.5	5.0	EEUFK1E391L()	200	1000
	470	10.0	12.5	900	0.063	4000	0.6	5.0	5.0	EEUFK1E471()	200	500
	560	8.0	20.0	1220	0.044	3000	0.6	3.5	5.0	EEUFK1E561L()	200	1000
		10.0	16.0	1240	0.049	4000	0.6	5.0	5.0	EEUFK1E561()	200	500
	820	10.0	20.0	1490	0.035	4000	0.6	5.0	5.0	EEUFK1E821()	200	500
		12.5	15.0	1400	0.048	5000	0.6	5.0	5.0	EEUFK1E821S()	200	500
	1000	10.0	25.0	1680	0.033	4000	0.6	5.0	5.0	EEUFK1E102L()	200	500
	1200	12.5	20.0	1890	0.029	5000	0.6	5.0	5.0	EEUFK1E122()	200	500
	1500	10.0	30.0	2140	0.025	4000	0.6	5.0	—	EEUFK1E152L	100	—
		16.0	15.0	1800	0.038	5000	0.8	7.5	7.5	EEUFK1E152S()	100	250
	1800	12.5	25.0	2280	0.022	5000	0.6	5.0	5.0	EEUFK1E182()	200	500
		18.0	15.0	2060	0.036	5000	0.8	7.5	7.5	EEUFK1E182S()	100	250
	2200	12.5	30.0	2720	0.018	5000	0.8	5.0	—	EEUFK1E222L	100	—
		16.0	20.0	2330	0.026	5000	0.8	7.5	7.5	EEUFK1E222S()	100	250
	2700	12.5	35.0	2940	0.016	5000	0.8	5.0	—	EEUFK1E272L	100	—
EOL	3300	12.5	40.0	3010	0.014	5000	0.8	5.0	—	EEUFK1E332L	100	—
3300	16.0	25.0	2760	0.019	5000	0.8	7.5	7.5	EEUFK1E332()	100	250	
	18.0	20.0	2640	0.025	5000	0.8	7.5	7.5	EEUFK1E332S()	100	250	
	4700	18.0	25.0	2850	0.018	5000	0.8	7.5	7.5	EEUFK1E472S()	100	250

*1: Ripple current (100 kHz / +105 °C)

*2: Impedance (100 kHz / +20 °C)

• When requesting taped product, please put the letter "B" between the "()". Lead wire pitch *B=5 mm, 7.5 mm.

• Please refer to the page of "Taping dimensions".

EOL End of life

Characteristics list

Endurance : 105 °C 3000 h / ø8, 105 °C 4000 h / ø10, 105 °C 5000 h / ø12.5 to ø18

Rated voltage (V)	Capacitance (±20 %) (μF)	Case size (mm)		Specification			Lead length (mm)			Part No.	Min. Packaging Q'ty (PCS)	
		øD	L	Ripple current ^{*1} (mA rms)	Impe- dance ^{*2} (Ω)	Endu- rance (h)	Lead dia. (øD)	Lead space			Straight leads	Taping
								Straight	Taping *B			
35	180	8.0	11.5	630	0.090	3000	0.6	3.5	5.0	EEUFK1V181()	200	1000
	270	8.0	15.0	860	0.062	3000	0.6	3.5	5.0	EEUFK1V271L()	200	1000
		10.0	12.5	900	0.063	4000	0.6	5.0	5.0	EEUFK1V271()	200	500
	390	8.0	20.0	1220	0.044	3000	0.6	3.5	5.0	EEUFK1V391L()	200	1000
		10.0	16.0	1240	0.049	4000	0.6	5.0	5.0	EEUFK1V391()	200	500
	560	10.0	20.0	1490	0.035	4000	0.6	5.0	5.0	EEUFK1V561()	200	500
		12.5	15.0	1400	0.048	5000	0.6	5.0	5.0	EEUFK1V561S()	200	500
	680	10.0	25.0	1680	0.033	4000	0.6	5.0	5.0	EEUFK1V681L()	200	500
	820	12.5	20.0	1890	0.029	5000	0.6	5.0	5.0	EEUFK1V821()	200	500
	1000	10.0	30.0	2140	0.025	4000	0.6	5.0	—	EEUFK1V102L	100	—
		16.0	15.0	1800	0.038	5000	0.8	7.5	7.5	EEUFK1V102S()	100	250
	1200	12.5	25.0	2280	0.022	5000	0.6	5.0	5.0	EEUFK1V122()	200	500
		18.0	15.0	2060	0.036	5000	0.8	7.5	7.5	EEUFK1V122S()	100	250
	1500	12.5	30.0	2720	0.018	5000	0.8	5.0	—	EEUFK1V152L	100	—
	1800	12.5	35.0	2940	0.016	5000	0.8	5.0	—	EEUFK1V182L	100	—
		16.0	20.0	2330	0.026	5000	0.8	7.5	7.5	EEUFK1V182S()	100	250
EOL	2200	12.5	40.0	3010	0.014	5000	0.8	5.0	—	EEUFK1V222L	100	—
	2200	16.0	25.0	2760	0.019	5000	0.8	7.5	7.5	EEUFK1V222()	100	250
		18.0	20.0	2640	0.025	5000	0.8	7.5	7.5	EEUFK1V222S()	100	250
	3300	18.0	25.0	2850	0.018	5000	0.8	7.5	7.5	EEUFK1V332S()	100	250

*1: Ripple current (100 kHz / +105 °C)

EOL End of life

*2: Impedance (100 kHz / +20 °C)

• When requesting taped product, please put the letter "B" between the "()". Lead wire pitch *B=5 mm, 7.5 mm.

• Please refer to the page of "Taping dimensions".