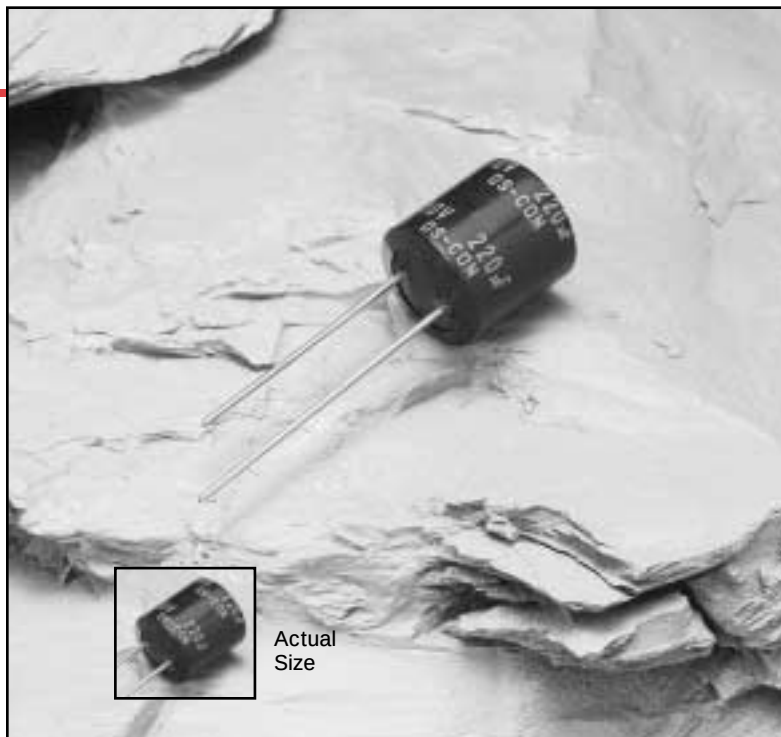


- **OS-CON™**
- **Low ESR**
- **Long Life**
- **Solvent Proof**
- **+105°C
Maximum
Temperature**



The FA series is an OS-CON™ series with higher capacitance values than the older CFM series. The low ESR, high ripple current capability and small size make these capacitors ideal for use in low profile DC-DC converters and also for stereo and video recorder applications. These capacitors can be used in filter circuits of switching power supplies and also for noise limiters.

The FA series capacitors are solvent proof. Refer to the Mini-Glossary for cleaning guidelines and recommended cleaning agents that are compatible with United Chemi-Con products.

Summary of Specifications

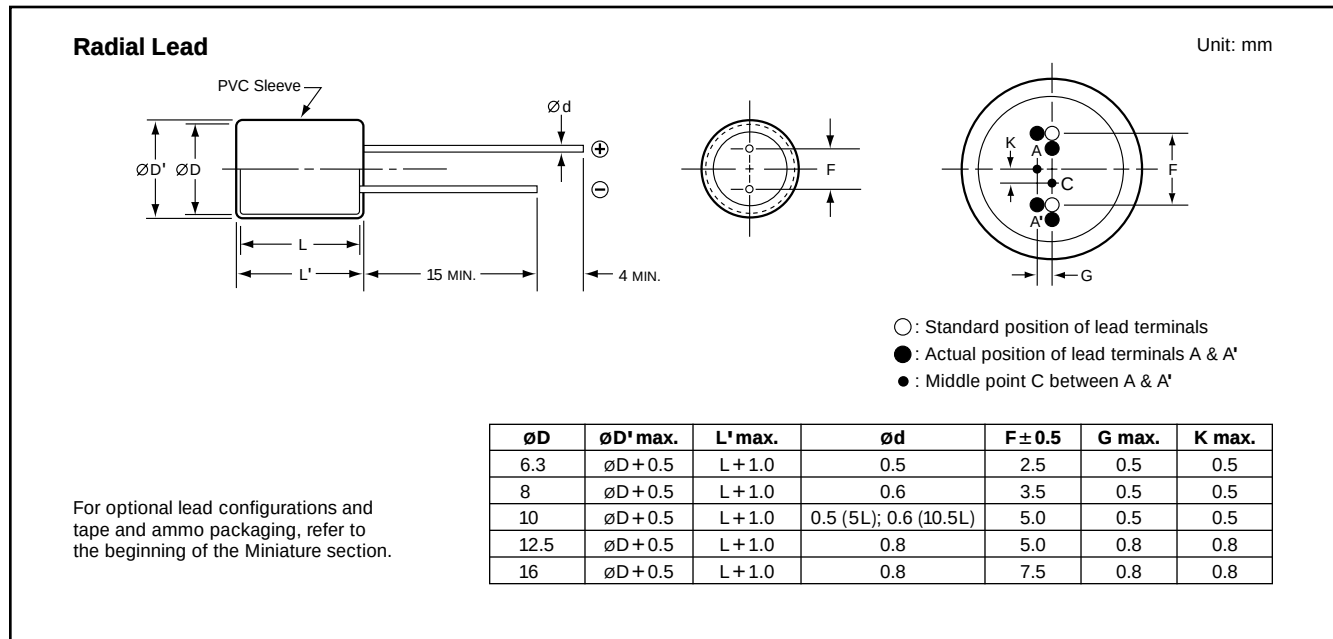
- **Radial lead terminals.**
- **Capacitance range: 15 to 2,200 μ F.**
- **Voltage range: 4 to 25VDC.**
- **Category temperature range: -55°C to +105°C.**
- **Leakage current: After 2 minutes with rated voltage applied at +20°C, see ratings tables for leakage current values.**
- **Standard capacitance tolerance: $\pm 20\%$; $\pm 10\%$ optional for $\varnothing 6.3$, $\varnothing 8$ and $\varnothing 10$.**
- **Nominal case size (D $\times$ L): 6.3 $\times$ 9.8mm to 16 $\times$ 25mm.**
- **Rated lifetime: 1,000 to 2,000 hours at +105°C depending on case diameter.**

FA Series

FA Specifications

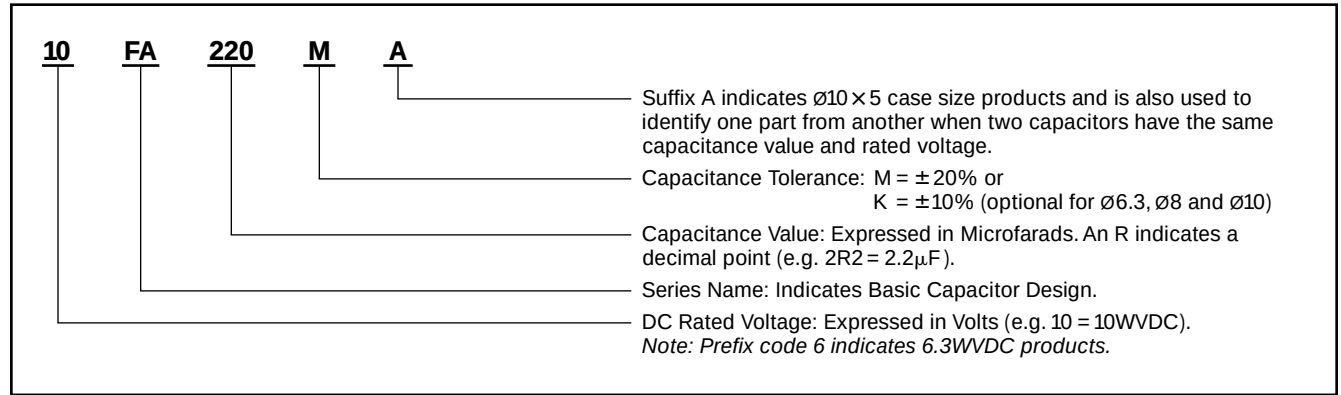
Item	Characteristics														
Category Temperature Range	− 55 to +105°C														
Rated Voltage Range	4 to 25VDC														
Capacitance Range	15 to 2,200μF														
Capacitance Tolerance	± 20% (M); ±10% (K) optional for ø6.3, ø8 and ø10; at +20°C, 120Hz														
Leakage Current	After 2 minutes with rated voltage applied at +20°C, see Ratings Tables for specified values.														
Dissipation Factor (Tan δ)	Tan δ (DF) at +20°C, 120Hz shall not exceed the specified values given in the Ratings Tables.														
Temperature Characteristics	At 100kHz, impedance (Z) ratio between the − 55°C, − 40°C or +105°C value and +20°C value shall not exceed the values given below.														
	Rated Voltage (V)		4 - 25												
	Z (−55°C) / Z (+20°C)		1.00 - 1.25												
	Z (−40°C) / Z (+20°C)		1.00 - 1.20												
	Z (+105°C) / Z (+20°C)		0.75 - 1.00												
Rated Ripple Current Multipliers <i>Refer to Section 4 of the Mini-Glossary for explanation of Rated Ripple Current Multipliers.</i>	Ambient Temperature (°C) <table><tr><td>≤ +45°C</td><td>+65°C</td><td>+85°C</td><td>+95°C</td><td>+105°C</td></tr><tr><td>1.0</td><td>0.85</td><td>0.7</td><td>0.4</td><td>0.25</td></tr></table>					≤ +45°C	+65°C	+85°C	+95°C	+105°C	1.0	0.85	0.7	0.4	0.25
≤ +45°C	+65°C	+85°C	+95°C	+105°C											
1.0	0.85	0.7	0.4	0.25											
Endurance (Load Life)	The following specifications shall be satisfied when the capacitors are restored to +20°C after subjecting them to the DC rated voltage for the specified test time at +105°C. (20V shall be applied for the capacitors with a 25V rating.) <table><tr><td>Case Diameter</td><td>ø6.3, ø8 & ø10mm</td><td>ø12.5 & ø16mm</td></tr><tr><td>Test Time</td><td>2,000 Hours</td><td>1,000 Hours</td></tr></table> Capacitance change : ≤ ±20% of initial measured value Tan δ (DF) : ≤150% of initial specified value Leakage current : ≤ initial specified value					Case Diameter	ø6.3, ø8 & ø10mm	ø12.5 & ø16mm	Test Time	2,000 Hours	1,000 Hours				
Case Diameter	ø6.3, ø8 & ø10mm	ø12.5 & ø16mm													
Test Time	2,000 Hours	1,000 Hours													
Moisture Resistance	The following specifications shall be satisfied when the capacitors are restored to +20°C after exposing them for 1,000 hours at +60°C, 90 - 95%RH without voltage applied. The rated voltage shall be applied to the capacitors for a minimum of 30 minutes at +105°C. Capacitance change: ≤ ±10% of initial measured value Tan δ (DF) : ≤ 150% of initial specified value except ø10×5 case size : ≤ 200% of initial specified value for ø10×5 case size Leakage current : ≤ initial specified value														

Diagram of Dimensions



FA Series

Part Numbering System for FA Series When ordering, always specify complete catalog number for FA Series.



Standard Voltage Ratings - Radial Lead

Rated Voltage (WVDC)	Capacitance (μ F)	Catalog Part Number†	Nominal Case Size* D $\times$ L (mm)	Maximum Leakage Current (μ A) at +20°C	Dissipation Factor (Tan δ) +20°C, 120Hz	Maximum ESR (m Ω) at +20°C 100k-300kHz	Rated Ripple Current (mA rms) at +45°C, 100kHz
4 Volts	220	4FA220MA	10 $\times$ 5	17.6	0.07	55	2,400
6.3 Volts	150	6FA150M	8 $\times$ 10.5	18.9	0.07	30	2,780
	150	6FA150MA	10 $\times$ 5	18.9	0.07	60	2,100
	330	6FA330M	10 $\times$ 10.5	41.5	0.07	25	3,500
	2,200	6FA2200M	16 $\times$ 25	277.0	0.13	15	9,750
10 Volts	47	10FA47M	6.3 $\times$ 9.8	4.7	0.06	60	2,020
	68	10FA68M	6.3 $\times$ 9.8	13.6	0.07	50	2,040
	100	10FA100M	8 $\times$ 10.5	20.0	0.07	30	2,680
	100	10FA100MA	10 $\times$ 5	20.0	0.07	60	2,100
	220	10FA220M	10 $\times$ 10.5	44.0	0.07	27	3,370
16 Volts	47	16FA47M	6.3 $\times$ 9.8	15.0	0.06	60	1,830
	68	16FA68M	8 $\times$ 10.5	21.8	0.06	40	2,600
	68	16FA68MA	10 $\times$ 5	21.7	0.07	65	1,850
	100	16FA100M	8 $\times$ 10.5	32.0	0.06	30	2,740
	150	16FA150M	10 $\times$ 10.5	48.0	0.06	28	3,260
	470	16FA470M	12.5 $\times$ 22	150.0	0.08	20	6,080
	1,000	16FA1000M	16 $\times$ 25	320.0	0.09	15	9,750
20 Volts	33	20FA33M	6.3 $\times$ 9.8	13.2	0.06	70	1,710
	47	20FA47M	8 $\times$ 10.5	18.8	0.06	40	2,450
	68	20FA68M	8 $\times$ 10.5	27.2	0.06	36	2,600
	100	20FA100M	10 $\times$ 10.5	40.0	0.06	30	3,210
25 Volts	15	25FA15M	6.3 $\times$ 9.8	3.7	0.04	70	1,650
	22	25FA22M	8 $\times$ 10.5	5.5	0.06	40	2,330
	22	25FA22MA	10 $\times$ 5	11.0	0.07	70	1,600
	33	25FA33M	10 $\times$ 10.5	8.2	0.06	35	2,900
	47	25FA47M	10 $\times$ 10.5	11.7	0.06	35	2,980

† M indicates $\pm 20\%$ capacitance tolerance. Substitute code letter K in part number for $\pm 10\%$ tolerance (available for $\phi 6.3$, $\phi 8$ and $\phi 10$ only).

* The case sizes in table are with no sleeve, refer to diagram for case sizes with sleeve.