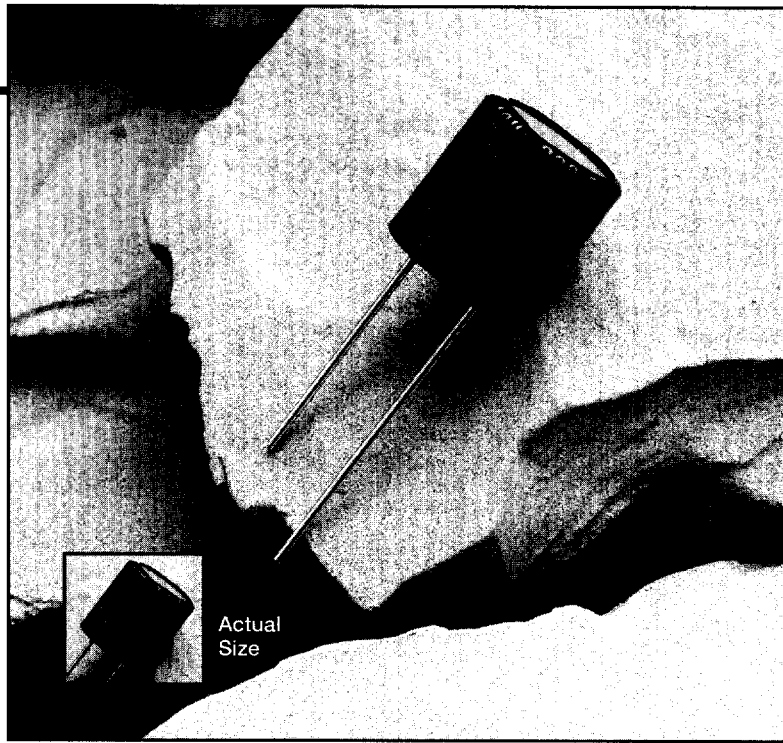


FH OS-CON Series



- OS-CON
- Solvent Proof
- Long Life
- Low Impedance
- +105°C Maximum Temperature



FH
OS-CON - 105°C

The FH series is a new OS-CON series designed for a longer useful lifetime compared to the other OS-CON series. The FH series capacitors with a 5,000 hour lifetime at 105°C also have a very low impedance making these parts ideal for use in low profile DC-DC converters as well as stereo and video recorder applications. These capacitors can also be used in filter circuits of switching power supplies.

The FH series capacitors were developed to withstand HCFC cleaning agents for five minutes by ultrasonic, vapor or immersion. This solvent proof design allows all circuit board components to be cleaned together at the same time. Refer to the Mini-Glossary for recommended cleaning conditions and guidelines.

Summary of Specifications

- Radial lead terminals.
- Capacitance range: 2.2 to 330 μ F.
- Voltage range: 6.3 to 25VDC.
- Operating 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: $\pm 20\%$
- Nominal case size (D \times L): 5 \times 6.8mm to 10 \times 10.5mm.
- Rated lifetime: 5,000 hours at +105°C.

FH Series

FH Specifications

Item	Characteristics								
Operating Temperature Range	-55 to +105°C								
Rated Voltage Range	6.3 to 25VDC								
Capacitance Range	2.2 to 330μF								
Capacitance Tolerance	±20% (M) at +20°C, 120Hz								
Leakage Current	After 2 minutes with rated voltage applied at +20°C, see Ratings Tables for specified values.								
Temperature Characteristics	At 100kHz, impedance (Z) ratio between the -55°C or +105°C value and +20°C value shall not exceed the values given below. <table border="1" style="margin-left: 20px;"> <tr> <td>Rated Voltage (V)</td> <td>6.3-25</td> </tr> <tr> <td>Z(-55°C)/Z(+20°C)</td> <td>1.00-1.25</td> </tr> <tr> <td>Z(+105°C)/Z(+20°C)</td> <td>0.75-1.00</td> </tr> </table>	Rated Voltage (V)	6.3-25	Z(-55°C)/Z(+20°C)	1.00-1.25	Z(+105°C)/Z(+20°C)	0.75-1.00		
Rated Voltage (V)	6.3-25								
Z(-55°C)/Z(+20°C)	1.00-1.25								
Z(+105°C)/Z(+20°C)	0.75-1.00								
Ripple Current Multipliers <i>Refer to Section 4 of the Mini-Glossary for explanation of Ripple Current Multipliers.</i>	Ambient Temperature (°C) <table border="1" style="margin-left: 20px;"> <tr> <td>≤+45°C</td> <td>+85°C</td> <td>+95°C</td> <td>+105°C</td> </tr> <tr> <td>1.0</td> <td>0.7</td> <td>0.4</td> <td>0.25</td> </tr> </table>	≤+45°C	+85°C	+95°C	+105°C	1.0	0.7	0.4	0.25
≤+45°C	+85°C	+95°C	+105°C						
1.0	0.7	0.4	0.25						
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 5,000 hours at +105°C. (20V shall be applied for the capacitors with a 25V rating.) Capacitance change: ≤ ±30% of initial measured value Tan δ (DF) : ≤ 150% of initial specified value Leakage current : ≤ 500% of initial specified value								
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, 90-95RH 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 Leakage current : ≤ initial specified value								

Diagram of Dimensions

VB/Radial Lead

Unit: mm

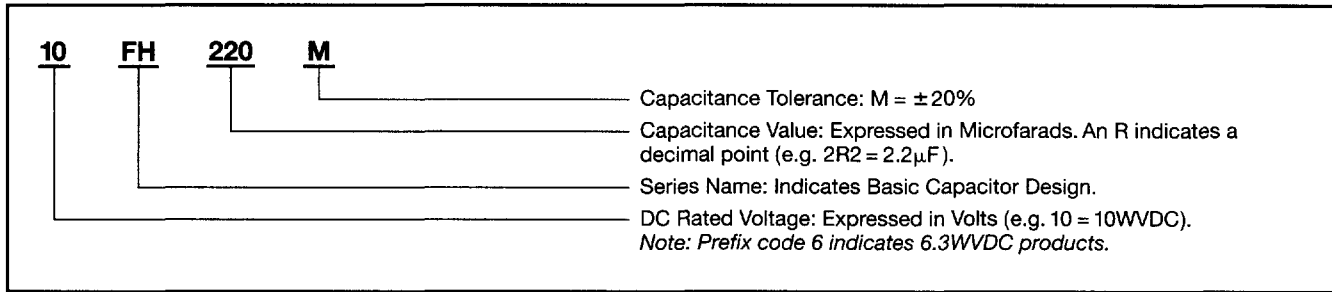
ØD	ØD' max	L' max	Ød	F ±0.5
5	ØD+0.5	L+1.0	0.45	2.0
6.3	ØD+0.5	L+1.0	0.45 (6.8L)	2.5
			0.5 (9.8L)	
8	ØD+0.5	L+1.0	0.6	3.5
10	ØD+0.5	L+1.0	0.6	5.0

For optional lead configurations and tape and ammo packaging, refer to the beginning of the Miniature section.

FH
OS-CON - 105°C

FH Series

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



Standard Voltage Ratings - VB/Radial Lead

Rated Voltage (VVDC)	Capacitance (μ F)	Catalog Part Number	Nominal Case Size* D x L (mm)	Maximum Leakage Current (μ A) at +20°C	Maximum ESR (m Ω) at +20°C 100k-300kHz	Maximum Ripple Current (mA rms) at +45°C, 100kHz
6.3 Volts 8 Volts Surge	15	6FH15M	5 x 6.8	1.9	120	815
	47	6FH47M	6.3 x 6.8	5.9	60	1,430
	150	6FH150M	8 x 10.5	18.9	30	2,780
	330	6FH330M	10 x 10.5	41.6	25	3,500
10 Volts 13 Volts Surge	10	10FH10M	5 x 6.8	2.0	150	780
	68	10FH68M	6.3 x 9.8	13.6	50	2,000
	220	10FH220M	10 x 10.5	44.0	27	3,370
16 Volts 20 Volts Surge	4.7	16FH4R7M	5 x 6.8	1.5	180	720
	6.8	16FH6R8M	5 x 6.8	2.2	150	745
	10	16FH10M	6.3 x 6.8	3.2	90	1,150
	33	16FH33M	6.3 x 6.8	10.6	70	1,370
	47	16FH47M	6.3 x 9.8	15.0	60	1,830
	100	16FH100M	8 x 10.5	32.0	30	2,740
20 Volts 25 Volts Surge	15	20FH15M	6.3 x 6.8	6.0	90	1,200
	22	20FH22M	6.3 x 6.8	8.8	70	1,300
	33	20FH33M	6.3 x 9.8	13.2	70	1,710
	47	20FH47M	8 x 10.5	18.8	40	2,450
	68	20FH68M	8 x 10.5	27.2	36	2,600
	100	20FH100M	10 x 10.5	40.0	30	3,210
25 Volts 32 Volts Surge	2.2	25FH2R2M	5 x 6.8	1.1	200	695
	3.3	25FH3R3M	5 x 6.8	1.7	200	700
	4.7	25FH4R7M	6.3 x 6.8	2.4	100	1,130
	6.8	25FH6R8M	6.3 x 6.8	3.4	100	1,140
	10	25FH10M	6.3 x 6.8	5.0	90	1,150
	15	25FH15M	6.3 x 9.8	7.5	70	1,650

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

OS-CON -105°C
FH