

RFS Miniature Aluminum Electrolytic Capacitors for Audio

SILMIC Series Silk Fiber Using Audio Purpose Capacitor

- ELNA developed new low material for the separate paper which use silk fibers. Therefore, this capacitor can give you high grade sound for your audio design.
- Due to the silk fiber's pliability, the capacitor makes a dream of the high quality sound.

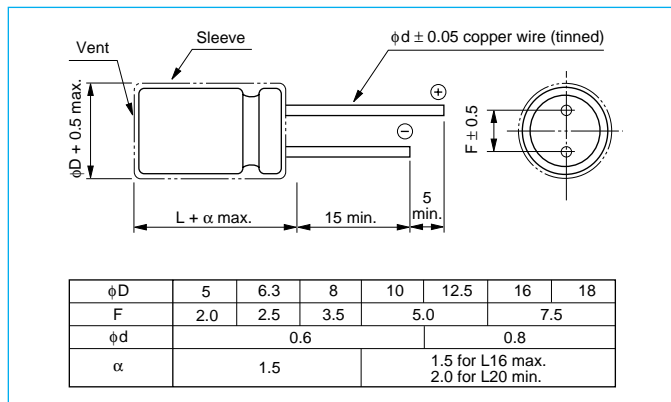
For example;

- To relieve the music's vibration energy.
- To decrease the peak feeling sound at high compass and rough quality sound at middle compass.
- To increase massive sound at low compass.
- For bipolar capacitors, consult with us.

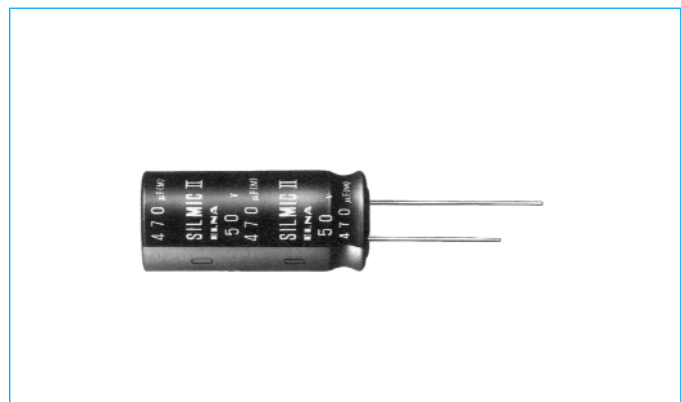
Miniature High Grade Capacitors for Audio (SILMIC II) Series RFS

- All lead wires oxygen-free copper for extremely low distortion. (Third high frequency distortion 10kHz, 0.1A,-120dB or less)
- Vinyl sleeve is of brown finish gold "SILMIC II" mark.

Outline Drawing



Photo



• The SILMIC series capacitors can be manufactured in larger sizes for power supply smoothing; consult with us.

Specifications

No.	Item	Performance																		
1	Temperature range (°C)	-40 to +85																		
2	Leakage current (μA)	Less than 0.01 CV or 3 whichever is larger (after 5 minutes), C: Capacitance (μF), V: Rated Voltage (V) (20°C)																		
3	Capacitance tolerance (%)	±20 (20°C, 120 Hz)																		
4	Tangent of loss angle (tan δ)	<table border="1"> <tr> <td>Rated voltage (V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> </tr> <tr> <td>tan δ</td> <td>0.20</td> <td>0.17</td> <td>0.13</td> <td>0.10</td> <td>0.10</td> <td>0.08</td> <td>0.08</td> <td>0.08</td> </tr> </table> <p>0.02 is added to every 1000μF increase over 1000μF (20°C, 120Hz)</p>	Rated voltage (V)	6.3	10	16	25	35	50	63	100	tan δ	0.20	0.17	0.13	0.10	0.10	0.08	0.08	0.08
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tan δ	0.20	0.17	0.13	0.10	0.10	0.08	0.08	0.08												
5	Endurance (85°C) (Applied ripple current)	<table border="1"> <tr> <td>Test time</td> <td>1000 hours</td> </tr> <tr> <td>Leakage current</td> <td>The initial specified value or less</td> </tr> <tr> <td>Change in capacitance</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>Tan δ</td> <td>150% or less of initial specified value</td> </tr> </table>	Test time	1000 hours	Leakage current	The initial specified value or less	Change in capacitance	Within ±20% of initial value	Tan δ	150% or less of initial specified value										
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6	Max. storage temp. (85°C)	Test time: 500 hrs. Others have same as endurance. Voltage application treatment.																		
7	Applicable Standards	JIS C 5101-1, 5101-4 1998 (IEC 60384-1 1992, 60384-4 1985)																		

Coefficients for the Allowable Ripple Current

Rated Voltage (V)	Frequency (Hz)					
	CV (μF x WV)	50 • 60	120	1 k	10 k	100 k
6.3 to 16	All CV value	0.80	1	1.1	1.2	1.2
25 to 35	≤ " 1000	0.80	1	1.5	1.7	1.7
	1000 <	0.80	1	1.2	1.3	1.3
50 to 100	≤ " 1000	0.80	1	1.6	1.9	1.9
	1000 <	0.80	1	1.2	1.3	1.3

Coefficients of Temperature for Ripple Current

Ambient temperature (°C)	+70	+85
Correction Coefficients	1.35	1

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Case size by working voltage & capacitance (in mm)

(mm)

WV(V) Cap.(μF)	6.3	10	16	25	35	50	63	100
0.47						5 x 11 / 6.3 x 11		5 x 11
1						5 x 11 / 6.3 x 11		5 x 11
2.2						5 x 11 / 6.3 x 11	5 x 11	5 x 11 / 6.3 x 11
3.3						5 x 11 / 6.3 x 11	5 x 11	8 x 11.5
4.7				5 x 11	5 x 11	5 x 11 / 6.3 x 11	5 x 11 / 6.3 x 11	10 x 12.5
10			5 x 11	5 x 11 / 6.3 x 11	5 x 11 / 6.3 x 11	8 x 11.5	8 x 11.5	10 x 16
22		5 x 11	5 x 11 / 6.3 x 11	5 x 11 / 6.3 x 11	8 x 11.5	10 x 12.5	10 x 16	10 x 20
33	5 x 11	5 x 11 / 6.3 x 11	5 x 11 / 6.3 x 11	8 x 11.5	10 x 12.5	10 x 16	10 x 20	12.5 x 20
47	5 x 11 / 6.3 x 11	5 x 11 / 6.3 x 11	8 x 11.5	8 x 11.5	10 x 12.5	10 x 16	10 x 20	12.5 x 25
100	8 x 11.5	8 x 11.5	10 x 12.5	10 x 16	10 x 20	12.5 x 20	12.5 x 20	16 x 25
220	10 x 12.5	10 x 16	10 x 20	12.5 x 20	12.5 x 25	16 x 25	16 x 31.5	18 x 40
330	10 x 16	10 x 20	12.5 x 20	12.5 x 20	16 x 25	16 x 31.5	16 x 35.5	
470	10 x 20	12.5 x 20	12.5 x 25	16 x 25	16 x 31.5	16 x 35.5	18 x 35.5	
1000	12.5 x 20	16 x 25	16 x 31.5	16 x 35.5	18 x 35.5	18 x 40		
2200		16 x 35.5	18 x 40					
3300		18 x 40						

Standard Ratings

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φx L) (mm)	tan δ	Ripple Current (mArms)
6.3 V				
RFS-6V330ME3	33	5 x 11	0.23	55
RFS-6V470ME3	47	5 x 11	0.23	65
RFS-6V470MF3	47	6.3 x 11	0.23	80
RFS-6V101MG3	100	8 x 11.5	0.23	135
RFS-6V221MH3	220	10 x 12.5	0.23	240
RFS-6V331MH4	330	10 x 16	0.23	290
RFS-6V471MH5	470	10 x 20	0.23	390
RFS-6V102MI5	1000	12.5 x 20	0.23	710
10 V				
RFS-10V220ME3	22	5 x 11	0.17	50
RFS-10V330ME3	33	5 x 11	0.17	65
RFS-10V330MF3	33	6.3 x 11	0.17	70
RFS-10V470ME3	47	5 x 11	0.17	75
RFS-10V470MF3	47	6.3 x 11	0.17	85
RFS-10V101MG3	100	8 x 11.5	0.17	145
RFS-10V221MH4	220	10 x 16	0.17	260
RFS-10V331MH5	330	10 x 20	0.17	350
RFS-10V471MI5	470	12.5 x 20	0.17	455
RFS-10V102MJ6	1000	16 x 25	0.17	835
RFS-10V222MJ8	2200	16 x 35.5	0.19	1500
RFS-10V333MK9	3300	18 x 40	0.21	1980

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φx L) (mm)	tan δ	Ripple Current (mArms)
16 V				
RFS-16V100ME3	10	5 x 11	0.13	35
RFS-16V220ME3	22	5 x 11	0.13	55
RFS-16V220MF3	22	6.3 x 11	0.13	70
RFS-16V330ME3	33	5 x 11	0.13	70
RFS-16V330MF3	33	6.3 x 11	0.13	90
RFS-16V470MG3	47	8 x 11.5	0.13	125
RFS-16V101MH3	100	10 x 12.5	0.13	215
RFS-16V221MH5	220	10 x 20	0.13	385
RFS-16V331MI5	330	12.5 x 20	0.13	545
RFS-16V471MI6	470	12.5 x 25	0.13	710
RFS-16V102MJ7	1000	16 x 31.5	0.13	1315
RFS-16V222MK9	2200	18 x 40	0.15	2150
25 V				
RFS-25V4R7ME3	4.7	5 x 11	0.10	25
RFS-25V100ME3	10	5 x 11	0.10	35
RFS-25V100MF3	10	6.3 x 11	0.10	60
RFS-25V220ME3	22	5 x 11	0.10	60
RFS-25V220MF3	22	6.3 x 11	0.10	80
RFS-25V330MG3	33	8 x 11.5	0.10	120
RFS-25V470MG3	47	8 x 11.5	0.10	140
RFS-25V101MH4	100	10 x 16	0.10	270

Note: Allowable Ripple Current 120 Hz at 85°C

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Standard Ratings

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φx L) (mm)	tan δ	Ripple Current (mArms)
RFS-25V221MI5	220	12.5 x 20	0.10	505
RFS-25V331MI6	330	12.5 x 25	0.10	675
RFS-25V471MJ6	470	16 x 25	0.10	940
RFS-25V102MJ8	1000	16 x 35.5	0.10	1575
35 V				
RFS-35V4R7ME3	4.7	5 x 11	0.10	30
RFS-35V100ME3	10	5 x 11	0.10	35
RFS-35V100MF3	10	6.3 x 11	0.10	55
RFS-35V220MG3	22	8 x 11.5	0.10	95
RFS-35V330MH3	33	10 x 12.5	0.10	140
RFS-35V470MH3	47	10 x 12.5	0.10	170
RFS-35V101MH5	100	10 x 20	0.10	295
RFS-35V221MI6	220	12.5 x 25	0.10	550
RFS-35V331MJ6	330	16 x 25	0.10	785
RFS-35V471MJ7	470	16 x 31.5	0.10	1030
RFS-35V102MK8	1000	18 x 35.5	0.10	1690
50 V				
RFS-50VR47ME3	0.47	5 x 11	0.08	9
RFS-50VR47MF3	0.47	6.3 x 11	0.08	12
RFS-50V010ME3	1	5 x 11	0.08	14
RFS-50V010MF3	1	6.3 x 11	0.08	18
RFS-50V2R2ME3	2.2	5 x 11	0.08	20
RFS-50V2R2MF3	2.2	6.3 x 11	0.08	23
RFS-50V3R3ME3	3.3	5 x 11	0.08	25
RFS-50V3R3MF3	3.3	6.3 x 11	0.08	30
RFS-50V4R7ME3	4.7	5 x 11	0.08	35
RFS-50V4R7MF3	4.7	6.3 x 11	0.08	40
RFS-50V100MG3	10	8 x 11.5	0.08	75
RFS-50V220MH3	22	10 x 12.5	0.08	130
RFS-50V330MH4	33	10 x 16	0.08	175
RFS-50V470MH4	47	10 x 16	0.08	210
RFS-50V101MI5	100	12.5 x 20	0.08	380
RFS-50V221MJ6	220	16 x 25	0.08	720
RFS-50V331MJ7	330	16 x 31.5	0.08	965
RFS-50V471MJ8	470	16 x 35.5	0.08	1210
RFS-50V102MK9	1000	18 x 40	0.08	1985
63 V				
RFS-63V2R2ME3	2.2	5 x 11	0.08	22

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φx L) (mm)	tan δ	Ripple Current (mArms)
RFS-63V3R3ME3	3.3	5 x 11	0.08	30
RFS-63V4R7ME3	4.7	5 x 11	0.08	35
RFS-63V4R7MF3	4.7	6.3 x 11	0.08	40
RFS-63V100MG3	10	8 x 11.5	0.08	75
RFS-63V220MH4	22	10 x 16	0.08	140
RFS-63V330MH5	33	10 x 20	0.08	190
RFS-63V470MH5	47	10 x 20	0.08	225
RFS-63V101MI6	100	12.5 x 25	0.08	415
RFS-63V221MJ7	220	16 x 31.5	0.08	785
RFS-63V331MJ8	330	16 x 35.5	0.08	1010
RFS-63V471MK8	470	18 x 35.5	0.08	1295
100 V				
RFS-100VR47ME3	0.47	5 x 11	0.08	10
RFS-100V010ME3	1	5 x 11	0.08	20
RFS-100V2R2ME3	2.2	5 x 11	0.08	25
RFS-100V2R2MF3	2.2	6.3 x 11	0.08	30
RFS-100V3R3MG3	3.3	8 x 11.5	0.08	40
RFS-100V4R7MH3	4.7	10 x 12.5	0.08	60
RFS-100V100MH4	10	10 x 16	0.08	95
RFS-100V220MH5	22	10 x 20	0.08	155
RFS-100V330MI5	33	12.5 x 20	0.08	220
RFS-100V470MI6	47	12.5 x 25	0.08	285
RFS-100V101MJ6	100	16 x 25	0.08	485
RFS-100V221MK9	220	18 x 40	0.08	930

Note: Allowable Ripple Current 120 Hz at 85°C