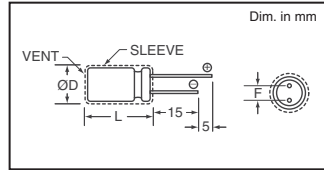




## Audio Aluminum Electrolytic Capacitors RFS Series



ELNA developed new raw material for the separate paper which uses a silk fiber. Therefore, this series can give high grade sound for any audio design. This series can be used to relieve the music's vibration energy, to decrease the peak feeling sound at high compass, rough quality sound at middle compass and to increase massive sound at low compass.

### Specifications:

- Operating Temperature Range: -40°C ~ 85°C
- Standards: JIS C5101-1, -4 1998 (IEC 60384-1 1992, -4 1985)

WV DC	Cap. (µF)	Rated Ripple Current (mA)	Dimensions (mm)			Digi-Key Part No.	Pricing			ELNA Part No.
			D	L	F		1	10	100	
25	4.7	25	5.0	11.0	2.0	604-1049-ND	.15	1.19	9.35	RFS-25V4R7ME3#
	10	35	5.0	11.0	2.0	604-1050-ND	.15	1.19	9.35	RFS-25V100ME3#
	22	60	5.0	11.0	2.0	604-1051-ND	.15	1.19	9.35	RFS-25V220ME3#
	22	80	6.3	11.0	2.5	604-1052-ND	.20	1.61	12.64	RFS-25V220MF3#
	33	120	8.0	11.5	3.5	604-1053-ND	.24	1.93	15.11	RFS-25V330MG3#
	47	140	8.0	11.5	3.5	604-1054-ND	.24	1.93	15.11	RFS-25V470MG3#
	100	270	10.0	16.0	5.0	604-1055-ND	.48	3.83	30.03	RFS-25V101MH4#
	220	505	12.5	20.0	5.0	604-1056-ND	.86	6.91	54.12	RFS-25V221MI5#
	330	675	12.5	25.0	5.0	604-1057-ND	1.08	8.66	67.87	RFS-25V331MI6#
	470	940	16.0	25.0	7.5	604-1058-ND	1.38	11.04	86.48	RFS-25V471MJ6#
1000	1575	16.0	35.5	7.5	604-1059-ND	3.32	26.56	208.05	RFS-25V102MJ8#	

WV DC	Cap. (µF)	Rated Ripple Current (mA)	Dimensions (mm)			Digi-Key Part No.	Pricing			ELNA Part No.
			D	L	F		1	10	100	
35	4.7	30	5.0	11.0	2.0	604-1060-ND	.15	1.19	9.35	RFS-35V4R7ME3#
	10	35	5.0	11.0	2.0	604-1061-ND	.15	1.19	9.35	RFS-35V100ME3#
	22	95	8.0	11.5	3.5	604-1062-ND	.24	1.93	15.11	RFS-35V220MG3#
	33	140	10.0	12.5	5.0	604-1063-ND	.33	2.66	20.80	RFS-35V330MH3#
	47	170	10.0	12.5	5.0	604-1064-ND	.33	2.66	20.80	RFS-35V470MH3#
	100	295	10.0	20.0	5.0	604-1065-ND	.52	4.19	32.78	RFS-35V101MH5#
	220	550	12.5	25.0	5.0	604-1066-ND	1.08	8.66	67.87	RFS-35V221MI6#
	330	785	16.0	25.0	7.5	604-1067-ND	1.38	11.04	86.48	RFS-35V331MJ6#
	470	1030	16.0	31.5	7.5	604-1068-ND	2.27	18.15	142.18	RFS-35V471MJ7#
	1000	1690	18.0	35.5	7.5	604-1069-ND	2.68	21.41	167.74	RFS-35V102MK8#



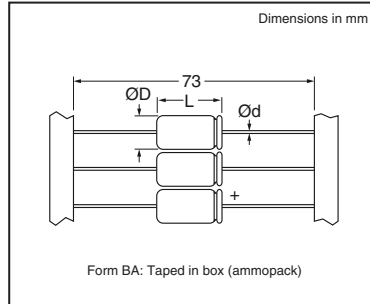
## SAL-A 123 Axial Solid AL Electrolytic Capacitors

### FEATURES:

- Polarized aluminum electrolytic capacitors, solid electrolyte MnO<sub>2</sub>
- Axial leads, aluminum case, ceramic seal, blue insulation sleeve.
- SAL-A: standard version
- Extremely long useful life: 20,000 hours at 125°C
- Extended usable temperature range up to 200°C
- Excellent low temperature impedance and ESR behavior
- Charge and discharge proof, application with 0 Ω resistance allowed
- Reverse DC voltage up to 0.3 x UR allowed
- AC voltage up to 0.8 x UR allowed
- Advanced technology to achieve high reliability and high stability

### APPLICATIONS:

- EDP, telecommunications, general industrial, automotive, military and space
- Smoothing, filtering, buffering, timing
- For power supplies, DC/DC converters



DESCRIPTION	VALUE
Case sizes (OD <sub>nom</sub> x L <sub>nom</sub> in mm)	6.7 x 15.3 to 12.9 x 32.0
Rated capacitance range (E6 Series), CR	1.5 to 2200 µF
Tolerance on CR	±20%
Rated voltage range, UR	6.3 to 40V
Category temperature range	-55°C ~ 125°C
Usable temperature range	-80°C ~ 200°C
Endurance test at 155 and 125°C	5000 and 8000 hours
Useful life at 40°C, I <sub>R</sub> applied	450,000 hours
Shelf life at 0 V, 125°C	500 hours
Based on sectional specification	IEC 384-4/CECC 30300
Detail specification	IEC384-4-2/CECC 30302
Climatic category IEC 68 (DIN 40040; NF C20-600)	55/125/56 (FKD; 434)
Approvals	CNET LNZ 44-04 COS-C (PTT) Gam-t-1 (MIL) CECC 30302-003

WV (VDC)	Cap. (µF)	Leakage Current (µA)	tan δ	Ripple Curr. (mA)	Dimensions (mm)			Digi-Key Part No.	Cut Tape Pricing		Digi-Key Part No.	Tape and Box Pricing				Vishay Part No.
					L	D	d		1	10		100	500	1,000	5,000	
6.3	330	104	0.180	330	23.3	9.3	0.6	4267PHCT-ND	10.26	94.02	—	—	—	—	—	2222 123 13331
10	33	17	0.180	63	15.3	6.7	0.6	4271PHCT-ND	8.33	76.37	—	—	—	—	—	2222 123 14339
16	33	55	0.140	89	20.4	7.6	0.6	4284PHCT-ND	8.67	79.45	—	—	—	—	—	2222 123 15339
	68	110	0.140	180	20.4	7.6	0.6	4286PHCT-ND	9.21	84.43	—	—	—	—	—	2222 123 15689
25	330	500	0.160	510	32	10.3	0.8	4290PHCT-ND	13.40	122.82	—	—	—	—	—	2222 123 15331
	100	250	0.160	250	23.3	9.3	0.6	4299PHCT-ND	11.26	103.24	—	—	—	—	—	2222 123 16101
35	15	30	0.120	53	20.4	7.6	0.6	4310PHCT-ND	9.08	83.27	—	—	—	—	—	2222 123 10159
	100	200	0.160	220	32	12.9	0.8	4315PHCT-ND	15.53	142.40	—	—	—	—	—	2222 123 10101
40	3.3	13	0.120	16	15.3	6.7	0.6	4318PHCT-ND	8.17	74.86	4318PHTB-ND	639.70	2615.00	4063.00	3834.00/M	2222 123 17338
	68	270	0.160	170	32	10.3	0.8	4326PHCT-ND	12.48	114.37	4326PHTB-ND	977.40	3995.50	6207.00	5858.00/M	2222 123 17689

## ASM 021

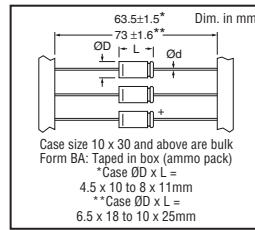
### Axial Standard Miniature Electrolytic Capacitors

### FEATURES:

- Polarized aluminum electrolytic capacitors, non-solid
- Axial leads, cylindrical aluminum case, insulated with a blue sleeve
- Charge and discharge proof
- Case Ø10mm x 30mm to 21mm x 40mm with pressure relief
- Taped versions up to case Ø15mm x 30mm available for automatic insertion
- Miniaturized, high CV-product per unit volume

### APPLICATIONS:

- General purpose, industrial, automotive, audio-video
- Coupling, decoupling, smoothing, filtering, buffering and timing
- Portable and mobile equipment (small size, low mass)
- Low mounting height boards, vibration and shock resistant.



DESCRIPTION	VALUE
Case sizes (OD <sub>nom</sub> x L <sub>nom</sub> in mm)	4.5 x 10 to 10 x 25   10 x 30 to 21 x 40
Rated capacitance range, CR	0.47 ~ 15,000µF
Tolerance on CR	±20%
Rated voltage range, UR	6.3 ~ 100V
Category temperature range	-40°C ~ 85°C
Endurance test at 85°C: UR = 6.3 ~ 25V	1,000 hours
UR = 40 ~ 100V	2,000 hours
5,000 hours	5,000 hours
Useful life at 85°C	2,500 hours
8,000 hours	8,000 hours
Useful life at 40°C, I <sub>R</sub> x L <sub>R</sub> applied	70,000 hours
200,000 hours	200,000 hours
Shelf life at 0 V, 85°C	500 hours
500 hours	500 hours
Based on sectional specification:	IEC 384-4/CECC 30300
UR = 6.3 ~ 25V	GP grade
UR = 40 ~ 100V	LL grade
LL grade	LL grade
Climatic category IEC 68 (DIN 40040)	40/085/56 (GPF)

WV (VDC)	Cap. (µF)	Leakage Curr. (µA)	tan δ	Ripple Curr. (mA)	Dimensions (mm)			Digi-Key Part No.	Cut Tape Pricing			Digi-Key Part No.	Tape and Box Pricing				Vishay Part No.
					L	D	d		1	10	100		500	1,000	5,000	10,000	
6.3	470	22	0.250	260	11	8.0	0.6	4000PHCT-ND	.79	6.78	53.11	4000PHTB-ND	217.00	337.00	318.00/M	294.00/M	2222 021 33471
	1000	42	0.250	440	18	8.0	0.8	4001PHCT-ND	.91	7.77	60.87	4001PHTB-ND	249.00	387.00	365.00/M	336.00/M	2222 021 33102
	2200	87	0.290	710	25	10	0.8	4002PHCT-ND	1.32	11.31	88.60	4002PHTB-ND	362.00	563.00	531.00/M	490.00/M	2222 021 90589
10	100	10	0.200	100	10	4.5	0.6	4003PHCT-ND	.56	4.83	37.84	4003PHTB-ND	—	240.00	227.00/M	209.00/M	2222 021 34101
	220	17	0.200	160	10	6.0	0.6	4004PHCT-ND	.62	5.31	41.60	4004PHTB-ND	—	264.00	249.00/M	230.00/M	2222 021 34221
	330	24	0.200	230	11	8.0	0.6	4005PHCT-ND	.79	6.78	53.11	4005PHTB-ND	217.00	337.00	318.00/M	294.00/M	2222 021 34331
	470	32	0.200	310	18	6.5	0.8	4006PHCT-ND	.79	6.78	53.11	4006PHTB-ND	—	337.00	318.00/M	294.00/M	2222 021 34471
	1000	64	0.200	550	18	10	0.8	4008PHCT-ND	1.04	8.94	70.03	4008PHTB-ND	286.50	445.00	420.00/M	387.00/M	2222 021 34102
	1500	94	0.230	690	25	10	0.8	4009PHCT-ND	1.32	11.31	88.60	4009PHTB-ND	362.00	563.00	531.00/M	490.00/M	2222 021 90525
	2200	136	0.250	800	30	12.5	0.8	4011PHB-ND	1.84	15.81	123.85	—	506.25	786.56	742.26/M	684.42/M	2222 021 14222
	3300	202	0.270	1000	30	12.5	0.8	4012PHB-ND	2.02	17.28	135.36	—	553.33	859.70	811.27/M	748.06/M	2222 021 14332
	4700	286	0.290	1180	30	15	0.8	4013PHB-ND	2.35	20.10	157.45	—	643.63	1000.00	943.67/M	870.13/M	2222 021 14472

• RoHS Compliant † Bulk

(Continued)

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