

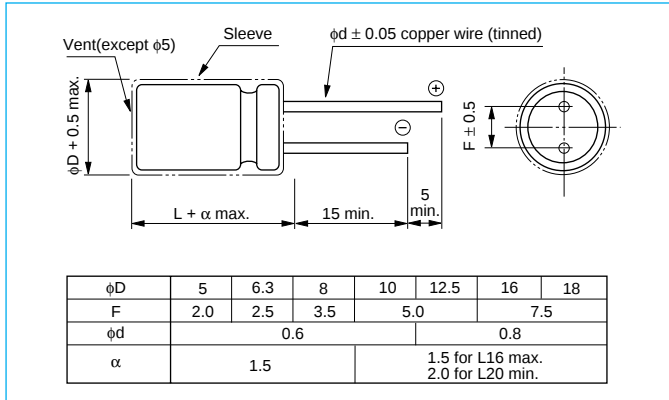
ROD Aluminum Electrolytic Capacitors For Audio

Miniature Standard Capacitors for Audio Series ROD (ARD)

STARGET

- High quality sound with a very high response materialized by a formation method newly developed for audio applications.
- White-printing on a red translucent sleeve. (labeled "STARGET")
- All lead wires are oxygen free copper wires to reduce distortion.

Outline Drawing



Unit: mm

Photo



Specifications

No.	Item	Performance																												
1	Temperature range (°C)	−40 to +85																												
2	Leakage current (μA)	Less than 0.01 CV or 4 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><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>0.24</td><td>0.20</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.10</td><td>0.09</td><td>0.08</td></tr></table>	Rated voltage (V)	6.3	10	16	25	35	50	63	100	tan δ	0.24	0.20	0.16	0.14	0.12	0.10	0.09	0.08										
		Rated voltage (V)	6.3	10	16	25	35	50	63	100																				
		tan δ	0.24	0.20	0.16	0.14	0.12	0.10	0.09	0.08																				
0.02 is added to every 1000μF increase over 1000μF (20°C, 120Hz)																														
5	Endurance (85°C) (Applied ripple current)	<table><tr><td colspan="2">Test time</td><td colspan="3">1000 hours</td></tr><tr><td colspan="2">Leakage current</td><td colspan="3">The initial specified value or less</td></tr><tr><td rowspan="3">Change in capacitance</td><td>WV(V) \ ∅D</td><td>≤ ∅6.3</td><td colspan="2">> ∅6.3</td></tr><tr><td>6.3~16</td><td>±20%</td><td colspan="2">±20%</td></tr><tr><td>25~100</td><td>±20%</td><td colspan="2">±20%</td></tr><tr><td colspan="2">Tan δ</td><td colspan="3">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	WV(V) \ ∅D	≤ ∅6.3	> ∅6.3		6.3~16	±20%	±20%		25~100	±20%	±20%		Tan δ		150% or less of initial specified value		
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			6.3~16	±20%	±20%																									
25~100	±20%		±20%																											
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6	Max. storage temp. (85°C)	Test time: 500 hrs. Others have same as endurance. Voltage application treatment: According to JIS C5102																												
7	Applicable Standards	JIS C5141, JIS C5102																												

Coefficients for the Allowable Ripple Current

Rated Voltage (V)	Frequency (Hz)	50 • 60	120	1 k	10 k	100 k
	CV (μF x WV)					
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		5 x 11
1						5 x 11		5 x 11
2.2						5 x 11		5 x 11
3.3						5 x 11		5 x 11
4.7				5 x 11		5 x 11	5 x 11	6.3 x 11
10			5 x 11	5 x 11	5 x 11	5 x 11	6.3 x 11	8 x 11.5
22		5 x 11	5 x 11	5 x 11	6.3 x 11	6.3 x 11	8 x 11.5	10 x 12.5
33	5 x 11	5 x 11	5 x 11	6.3 x 11	6.3 x 11	8 x 11.5	8 x 11.5	10 x 16
47	5 x 11	5 x 11	6.3 x 11	6.3 x 11	8 x 11.5	8 x 11.5	10 x 12.5	10 x 20
100	6.3 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 20
220	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
330	10 x 12.5	10 x 12.5	10 x 16	10 x 20	12.5 x 20	12.5 x 20	12.5 x 25	16 x 31.5
470	10 x 12.5	10 x 16	10 x 20	12.5 x 20	12.5 x 25	16 x 25	16 x 25	18 x 35.5
1000	10 x 20	12.5 x 20	12.5 x 25	16 x 25	16 x 25	16 x 31.5	18 x 35.5	
2200	12.5 x 25	16 x 25	16 x 25	16 x 35.5	18 x 35.5			
3300	16 x 25	16 x 31.5	16 x 35.5	18 x 40				
4700	16 x 31.5	16 x 35.5	18 x 35.5					
6800	16 x 35.5	18 x 40						
10000	18 x 40							

Standard Ratings

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φx L) (mm)	tan δ	Ripple Current (mAmps)
6.3 V				
ROD-6V330M	33	5 x 11	0.24	55
ROD-6V470M	47	5 x 11	0.24	65
ROD-6V101M	100	6.3 x 11	0.24	110
ROD-6V221M	220	8 x 11.5	0.24	185
ROD-6V331M	330	10 x 12.5	0.24	265
ROD-6V471M	470	10 x 12.5	0.24	315
ROD-6V102M	1000	10 x 20	0.24	550
ROD-6V222M	2200	12.5 x 25	0.26	980
ROD-6V332M	3300	16 x 25	0.28	1300
ROD-6V472M	4700	16 x 31.5	0.30	1700
ROD-6V682M	6800	16 x 35.5	0.34	2100
ROD-6V103M	10000	18 x 40	0.40	2800
10 V				
ROD-10V220M	22	5 x 11	0.20	50
ROD-10V330M	33	5 x 11	0.20	65
ROD-10V470M	47	5 x 11	0.20	75
ROD-10V101M	100	6.3 x 11	0.20	120
ROD-10V221M	220	8 x 11.5	0.20	200
ROD-10V331M	330	10 x 12.5	0.20	290
ROD-10V471M	470	10 x 16	0.20	380

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φx L) (mm)	tan δ	Ripple Current (mAmps)
ROD-10V102M	1000	12.5 x 20	0.20	670
ROD-10V222M	2200	16 x 25	0.22	1200
ROD-10V332M	3300	16 x 31.5	0.24	1600
ROD-10V472M	4700	16 x 35.5	0.26	1900
ROD-10V682M	6800	18 x 40	0.30	2600
16 V				
ROD-16V100M	10	5 x 11	0.16	35
ROD-16V220M	22	5 x 11	0.16	60
ROD-16V330M	33	5 x 11	0.16	70
ROD-16V470M	47	6.3 x 11	0.16	95
ROD-16V101M	100	8 x 11.5	0.16	150
ROD-16V221M	220	10 x 12.5	0.16	265
ROD-16V331M	330	10 x 16	0.16	350
ROD-16V471M	470	10 x 20	0.16	460
ROD-16V102M	1000	12.5 x 25	0.16	810
ROD-16V222M	2200	16 x 25	0.18	1350
ROD-16V332M	3300	16 x 35.5	0.20	1800
ROD-16V472M	4700	18 x 35.5	0.22	2400
25 V				
ROD-25V4R7M	4.7	5 x 11	0.14	25
ROD-25V100M	10	5 x 11	0.14	40

Note: Allowable Ripple Current 100 kHz at 105°C

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Standard Ratings

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φx L) (mm)	tan δ	Ripple Current (mA _{rms})
ROD-25V220M	22	5 x 11	0.14	60
ROD-25V330M	33	6.3 x 11	0.14	80
ROD-25V470M	47	6.3 x 11	0.14	100
ROD-25V101M	100	8 x 11.5	0.14	165
ROD-25V221M	220	10 x 16	0.14	310
ROD-25V331M	330	10 x 20	0.14	410
ROD-25V471M	470	12.5 x 20	0.14	550
ROD-25V102M	1000	16 x 25	0.14	1000
ROD-25V222M	2200	16 x 35.5	0.16	1650
ROD-25V332M	3300	18 x 40	0.18	2100
35 V				
ROD-35V100M	10	5 x 11	0.12	45
ROD-35V220M	22	6.3 x 11	0.12	75
ROD-35V330M	33	6.3 x 11	0.12	90
ROD-35V470M	47	8 x 11.5	0.12	120
ROD-35V101M	100	10 x 12.5	0.12	210
ROD-35V221M	220	10 x 20	0.12	365
ROD-35V331M	330	12.5 x 20	0.12	500
ROD-35V471M	470	12.5 x 25	0.12	640
ROD-35V102M	1000	16 x 25	0.12	1050
ROD-35V222M	2200	18 x 35.5	0.14	1900
50 V				
ROD-50VR47M	0.47	5 x 11	0.10	5
ROD-50V010M	1	5 x 11	0.10	10
ROD-50V2R2M	2.2	5 x 11	0.10	20
ROD-50V3R3M	3.3	5 x 11	0.10	25
ROD-50V4R7M	4.7	5 x 11	0.10	35
ROD-50V100M	10	5 x 11	0.10	50
ROD-50V220M	22	6.3 x 11	0.10	80
ROD-50V330M	33	8 x 11.5	0.10	110
ROD-50V470M	47	8 x 11.5	0.10	130
ROD-50V101M	100	10 x 16	0.10	250
ROD-50V221M	220	12.5 x 20	0.10	440
ROD-50V331M	330	12.5 x 20	0.10	540
ROD-50V471M	470	16 x 25	0.10	800
ROD-50V102M	1000	16 x 31.5	0.10	1200

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φx L) (mm)	tan δ	Ripple Current (mA _{rms})
63 V				
ROD-63V4R7M	4.7	5 x 11	0.09	35
ROD-63V100M	10	6.3 x 11	0.09	60
ROD-63V220M	22	8 x 11.5	0.09	100
ROD-63V330M	33	8 x 11.5	0.09	115
ROD-63V470M	47	10 x 12.5	0.09	165
ROD-63V101M	100	10 x 20	0.09	285
ROD-63V221M	220	12.5 x 20	0.09	470
ROD-63V331M	330	12.5 x 25	0.09	620
ROD-63V471M	470	16 x 25	0.09	840
ROD-63V102M	1000	18 x 35.5	0.09	1500
100 V				
ROD-100VR47M	0.47	5 x 11	0.08	10
ROD-100V010M	1	5 x 11	0.08	15
ROD-100V2R2M	2.2	5 x 11	0.08	25
ROD-100V3R3M	3.3	5 x 11	0.08	30
ROD-100V4R7M	4.7	6.3 x 11	0.08	40
ROD-100V100M	10	8 x 11.5	0.08	70
ROD-100V220M	22	10 x 12.5	0.08	120
ROD-100V330M	33	10 x 16	0.08	160
ROD-100V470M	47	10 x 20	0.08	210
ROD-100V101M	100	12.5 x 20	0.08	340
ROD-100V221M	220	16 x 25	0.08	620
ROD-100V331M	330	16 x 31.5	0.08	820
ROD-100V471M	470	18 x 35.5	0.08	1000

Note: Allowable Ripple Current 120 kHz at 85°C