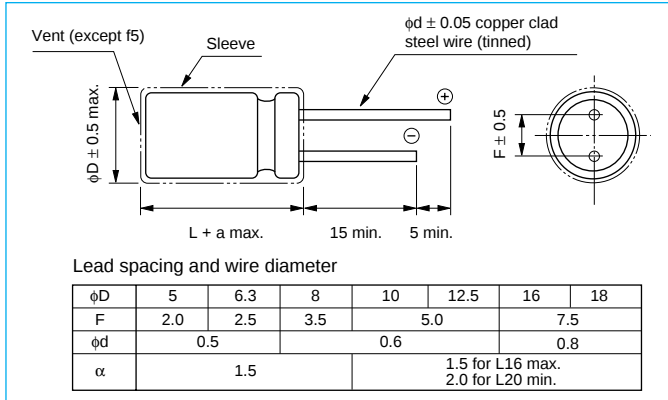


RE2 Miniature Aluminum Electrolytic Capacitors

Series RE2 Miniature Standard Product

- These capacitors are several sizes smaller than previous ELNA RE general-purpose capacitors.
- Rated voltage is extended to 450 V.
- We guarantee operation for 2000 hours at 85°C.

Outline Drawing



Unit: mm

Photo



Specifications

No.	Item	Performance																
1	Temperature range (°C)	−40 to +85																
2	Leakage current (μA)	Rated voltage (V)		6.3 to 100						160 to 450								
		—		Less than 0.01 CV or 3 whichever is larger (after two minutes)						Less than 0.06 CV +10 (after two minutes)								
		C: Capacitance (μF), V: Voltage (V)																
3	Capacitance tolerance (%)	±20 (20°C, 120 Hz)																
4	Tangent of loss angle (tan δ)	Rated voltage (V)		6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	(20°C, 120 Hz)
		tan δ		0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.12	0.12	0.15	0.15	0.20	0.23	
		0.02 is added to each 1000 μF increase over 1000 μF.																
5	Stability at low temperature	Rated voltage (V)		6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	(120 Hz)
		Impedance ratio	Z−25°C/Z+20°C		4	3	2					3			6			
			Z−40°C/Z+20°C		8	6	4	3					8			—		
6	Endurance (85°C) (Applied ripple current)	Test time			2000 hrs													
		Leakage current			Initial specified value or less													
		Change in capacitance			Within ±20% of initial value													
		tan δ			200% or less of initial specified value													
7	Max. storage temp. (85°C)	Test time 1000 hrs. Others have same as endurance in No. 6, Voltage application treatment.																
8	Applicable Standards	JIS C 5101-1, 5101-4 1998 (IEC 60384-1 1992, 60384-4 1985)																

Coefficients of Frequency for Ripple Current

Rated Voltage (V)	Frequency (Hz) CV (μF × V)	50 • 60	120	1 k	10 k	100 k
6.3 to 16	All CV value	0.8	1	1.1	1.2	1.2
25 to 35	≤ 1000	0.8	1	1.5	1.7	1.7
	1000 <	0.8	1	1.2	1.3	1.3
50 to 100	≤ 1000	0.8	1	1.6	1.9	1.9
	1000 <	0.8	1	1.2	1.3	1.3
160 to 450	All CV value	0.8	1	1.3	1.5	1.6

Coefficients of Temperature for Ripple Current

Temperature (°C)	+70 or less	+85
Coefficients	1.35	1

RE2 Miniature Aluminum Electrolytic Capacitors

Case size by working voltage & capacitance (in mm)

(mm)

WV(V) Cap.(μF)	6.3	10	16	25	35	50	63	100
0.1						5 × 11		5 × 11 *
0.22						5 × 11		5 × 11
0.33						5 × 11		5 × 11
0.47						5 × 11		5 × 11
1						5 × 11		5 × 11
2.2						5 × 11		5 × 11
3.3						5 × 11		5 × 11
4.7				5 × 11	5 × 11	5 × 11	5 × 11	5 × 11
10			5 × 11	5 × 11	5 × 11	5 × 11	5 × 11	6.3 × 11
22	*	5 × 11	5 × 11	5 × 11	5 × 11	5 × 11	6.3 × 11	8 × 11.5
33	5 × 11	5 × 11	5 × 11	5 × 11	5 × 11	6.3 × 11	6.3 × 11	10 × 12.5
47	5 × 11	5 × 11	5 × 11	5 × 11	6.3 × 11	6.3 × 11	8 × 11.5	10 × 16
100	5 × 11	5 × 11	6.3 × 11	6.3 × 11	8 × 11.5	8 × 11.5	10 × 12.5	12.5 × 20
220	6.3 × 11	6.3 × 11	8 × 11.5	8 × 11.5	10 × 12.5	10 × 16	10 × 20	16 × 25
330	6.3 × 11	8 × 11.5	8 × 11.5	10 × 12.5	10 × 16	10 × 20	12.5 × 20	16 × 25
470	8 × 11.5	8 × 11.5	10 × 12.5	10 × 16	10 × 20	12.5 × 20	12.5 × 25	16 × 31.5
1000	10 × 12.5	10 × 16	10 × 20	12.5 × 20	12.5 × 25	16 × 25	16 × 31.5	
2200	12.5 × 20	12.5 × 20	12.5 × 25	16 × 25	16 × 31.5	18 × 35.5		
3300	12.5 × 20	12.5 × 25	16 × 25	16 × 31.5	18 × 35.5			
4700	16 × 25	16 × 25	16 × 31.5	18 × 35.5				
6800	16 × 25	16 × 31.5	18 × 35.5					
10000	16 × 31.5	18 × 35.5						
15000	18 × 35.5							

* Beginning of Parts No. for Case size 5x11, read "RE3".

WV(V) Cap.(μF)	160	200	250	350	400	450
0.47	6.3 × 11	6.3 × 11	6.3 × 11	6.3 × 11		
1	6.3 × 11	6.3 × 11	6.3 × 11	8 × 11.5	10 × 12.5	
2.2	6.3 × 11	6.3 × 11	8 × 11.5	10 × 12.5	10 × 12.5	10 × 16
3.3	8 × 11.5	8 × 11.5	10 × 12.5	10 × 12.5	10 × 16	10 × 20
4.7	8 × 11.5	10 × 12.5	10 × 12.5	10 × 16	10 × 20	12.5 × 20
10	10 × 12.5	10 × 16	10 × 20	10 × 20	12.5 × 20	12.5 × 25
22	10 × 20	10 × 20	12.5 × 25	12.5 × 25	16 × 25	16 × 31.5
33	12.5 × 20	12.5 × 25	12.5 × 25	16 × 25	16 × 31.5	18 × 35.5
47	12.5 × 25	12.5 × 25	16 × 25	16 × 31.5	18 × 35.5	
100	16 × 25	16 × 31.5	18 × 35.5			
220	18 × 35.5	18 × 40				

RE2 Miniature Aluminum Electrolytic Capacitors

Standard Ratings

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φ x L) (mm)	tan δ	Ripple Current (mA _{rms})
6.3 V				
RE3-6V330MA	33	5 x 11	0.22	60
RE3-6V470MA	47	5 x 11	0.22	70
RE3-6V101MA	100	5 x 11	0.22	100
RE2-6V221MMA	220	6.3 x 11	0.22	170
RE2-6V331MMA	330	6.3 x 11	0.22	210
RE2-6V471MMA	470	8 x 11.5	0.22	300
RE2-6V102MMA	1000	10 x 12.5	0.22	530
RE2-6V222MMA	2200	12.5 x 20	0.24	990
RE2-6V332MMA	3300	12.5 x 20	0.26	1150
RE2-6V472MMA	4700	16 x 25	0.28	1700
RE2-6V682MMA	6800	16 x 25	0.32	1900
RE2-6V103MMA	10000	16 x 31.5	0.38	2250
RE2-6V153MMA	15000	18 x 35.5	0.48	2900
10 V				
RE3-10V220MA	22	5 x 11	0.19	50
RE3-10V330MA	33	5 x 11	0.19	65
RE3-10V470MA	47	5 x 11	0.19	75
RE3-10V101MA	100	5 x 11	0.19	110
RE2-10V221MMA	220	6.3 x 11	0.19	190
RE2-10V331MMA	330	8 x 11.5	0.19	270
RE2-10V471MMA	470	8 x 11.5	0.19	330
RE2-10V102MMA	1000	10 x 16	0.19	620
RE2-10V222MMA	2200	12.5 x 20	0.21	1050
RE2-10V332MMA	3300	12.5 x 25	0.23	1350
RE2-10V472MMA	4700	16 x 25	0.25	1800
RE2-10V682MMA	6800	16 x 31.5	0.29	2200
RE2-10V103MMA	10000	18 x 35.5	0.35	2750
16 V				
RE3-16V100MA	10	5 x 11	0.16	40
RE3-16V220MA	22	5 x 11	0.16	55
RE3-16V330MA	33	5 x 11	0.16	70
RE3-16V470MA	47	5 x 11	0.16	80
RE2-16V101MMA	100	6.3 x 11	0.16	140
RE2-16V221MMA	220	8 x 11.5	0.16	240
RE2-16V331MMA	330	8 x 11.5	0.16	300
RE2-16V471MMA	470	10 x 12.5	0.16	420

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φ x L) (mm)	tan δ	Ripple Current (mA _{rms})
RE2-16V102MMA	1000	10 x 20	0.16	740
RE2-16V222MMA	2200	12.5 x 25	0.18	1200
RE2-16V332MMA	3300	16 x 25	0.20	1650
RE2-16V472MMA	4700	16 x 31.5	0.22	2100
RE2-16V682MMA	6800	18 x 35.5	0.26	2600
25 V				
RE3-25V4R7MA	4.7	5 x 11	0.14	25
RE3-25V100MA	10	5 x 11	0.14	40
RE3-25V220MA	22	5 x 11	0.14	60
RE3-25V330MA	33	5 x 11	0.14	70
RE3-25V470MA	47	5 x 11	0.14	90
RE2-25V101MMA	100	6.3 x 11	0.14	150
RE2-25V221MMA	220	8 x 11.5	0.14	260
RE2-25V331MMA	330	10 x 12.5	0.14	380
RE2-25V471MMA	470	10 x 16	0.14	500
RE2-25V102MMA	1000	12.5 x 20	0.14	1000
RE2-25V222MMA	2200	16 x 25	0.16	1500
RE2-25V332MMA	3300	16 x 31.5	0.18	1900
RE2-25V472MMA	4700	18 x 35.5	0.20	2450
35 V				
RE3-35V4R7MA	4.7	5 x 11	0.12	30
RE3-35V100MA	10	5 x 11	0.12	45
RE3-35V220MA	22	5 x 11	0.12	60
RE3-35V330MA	33	5 x 11	0.12	80
RE2-35V470MMA	47	6.3 x 11	0.12	110
RE2-35V101MMA	100	8 x 11.5	0.12	190
RE2-35V221MMA	220	10 x 12.5	0.12	330
RE2-35V331MMA	330	10 x 16	0.12	450
RE2-35V471MMA	470	10 x 20	0.12	590
RE2-35V102MMA	1000	12.5 x 25	0.12	1050
RE2-35V222MMA	2200	16 x 31.5	0.14	1750
RE2-35V332MMA	3300	18 x 35.5	0.16	2250
50 V				
RE3-50VR10MA	0.1	5 x 11	0.10	5
RE3-50VR22MA	0.22	5 x 11	0.10	7
RE3-50VR33MA	0.33	5 x 11	0.10	9
RE3-50VR47MA	0.47	5 x 11	0.10	10

Note: Allowable Ripple Current 120 Hz at 85°C

RE2 Miniature Aluminum Electrolytic Capacitors

Standard Ratings

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φ x L) (mm)	tan δ	Ripple Current (mArms)
RE3-50V010MA	1	5 x 11	0.10	15
RE3-50V2R2MA	2.2	5 x 11	0.10	20
RE3-50V3R3MA	3.3	5 x 11	0.10	25
RE3-50V4R7MA	4.7	5 x 11	0.10	30
RE3-50V100MA	10	5 x 11	0.10	45
RE3-50V220MA	22	5 x 11	0.10	70
RE2-50V330MMA	33	6.3 x 11	0.10	100
RE2-50V470MMA	47	6.3 x 11	0.10	120
RE2-50V101MMA	100	8 x 11.5	0.10	210
RE2-50V221MMA	220	10 x 16	0.10	400
RE2-50V331MMA	330	10 x 20	0.10	540
RE2-50V471MMA	470	12.5 x 20	0.10	740
RE2-50V102MMA	1000	16 x 25	0.10	1350
RE2-50V222MMA	2200	18 x 35.5	0.12	2100
63 V				
RE3-63V4R7MA	4.7	5 x 11	0.09	35
RE3-63V100MA	10	5 x 11	0.09	50
RE2-63V220MMA	22	6.3 x 11	0.09	85
RE2-63V330MMA	33	6.3 x 11	0.09	100
RE2-63V470MMA	47	8 x 11.5	0.09	150
RE2-63V101MMA	100	10 x 12.5	0.09	260
RE2-63V221MMA	220	10 x 20	0.09	460
RE2-63V331MMA	330	12.5 x 20	0.09	650
RE2-63V471MMA	470	12.5 x 25	0.09	850
RE2-63V102MMA	1000	16 x 31.5	0.09	1550
100 V				
RE3-100VR10M	0.1	5 x 11	0.08	5
RE3-100VR22M	0.22	5 x 11	0.08	8
RE3-100VR33M	0.33	5 x 11	0.08	10
RE3-100VR47M	0.47	5 x 11	0.08	10
RE3-100V010M	1	5 x 11	0.08	15
RE3-100V2R2M	2.2	5 x 11	0.08	25
RE3-100V3R3M	3.3	5 x 11	0.08	30
RE3-100V4R7M	4.7	5 x 11	0.08	35
RE2-100V100MMA	10	6.3 x 11	0.08	60
RE2-100V220MMA	22	8 x 11.5	0.08	110
RE2-100V330MMA	33	10 x 12.5	0.08	160

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φ x L) (mm)	tan δ	Ripple Current (mArms)
RE2-100V470MMA	47	10 x 16	0.08	210
RE2-100V101MMA	100	12.5 x 20	0.08	380
RE2-100V221MMA	220	16 x 25	0.08	720
RE2-100V331MMA	330	16 x 25	0.08	880
RE2-100V471MMA	470	16 x 31.5	0.08	1150
160 V				
RE2-160VR47M	0.47	6.3 x 11	0.12	10
RE2-160V010M	1	6.3 x 11	0.12	15
RE2-160V2R2M	2.2	6.3 x 11	0.12	20
RE2-160V3R3M	3.3	8 x 11.5	0.12	35
RE2-160V4R7M	4.7	8 x 11.5	0.12	40
RE2-160V100M	10	10 x 12.5	0.12	70
RE2-160V220M	22	10 x 20	0.12	120
RE2-160V330M	33	12.5 x 20	0.12	180
RE2-160V470M	47	12.5 x 25	0.12	230
RE2-160V101M	100	16 x 25	0.12	400
RE2-160V221M	220	18 x 35.5	0.12	730
200 V				
RE2-200VR47M	0.47	6.3 x 11	0.12	10
RE2-200V010M	1	6.3 x 11	0.12	15
RE2-200V2R2M	2.2	6.3 x 11	0.12	20
RE2-200V3R3M	3.3	8 x 11.5	0.12	35
RE2-200V4R7M	4.7	10 x 12.5	0.12	50
RE2-200V100M	10	10 x 16	0.12	75
RE2-200V220M	22	10 x 20	0.12	120
RE2-200V330M	33	12.5 x 25	0.12	190
RE2-200V470M	47	12.5 x 25	0.12	220
RE2-200V101M	100	16 x 31.5	0.12	430
RE2-200V221M	220	18 x 40	0.12	760
250 V				
RE2-250VR47M	0.47	6.3 x 11	0.15	10
RE2-250V010M	1	6.3 x 11	0.15	15
RE2-250V2R2M	2.2	8 x 11.5	0.15	25
RE2-250V3R3M	3.3	10 x 12.5	0.15	35
RE2-250V4R7M	4.7	10 x 12.5	0.15	40
RE2-250V100M	10	10 x 20	0.15	75
RE2-250V220M	22	12.5 x 25	0.15	140

Note: Allowable Ripple Current 120 Hz at 85°C

RE2 Miniature Aluminum Electrolytic Capacitors

Standard Ratings

ELNA PART NO. / WV (V)	CAP. (μ F)	SIZE (ϕ x L) (mm)	$\tan \delta$	Ripple Current (mA _{rms})
RE2-250V330M	33	12.5 x 25	0.15	170
RE2-250V470M	47	16 x 25	0.15	240
RE2-250V101M	100	18 x 35.5	0.15	440
350 V				
RE2-350VR47M	0.47	6.3 x 11	0.15	10
RE2-350V010M	1	8 x 11.5	0.15	15
RE2-350V2R2M	2.2	10 x 12.5	0.15	30
RE2-350V3R3M	3.3	10 x 12.5	0.15	35
RE2-350V4R7M	4.7	10 x 16	0.15	45
RE2-350V100M	10	10 x 20	0.15	75
RE2-350V220M	22	12.5 x 25	0.15	140
RE2-350V330M	33	16 x 25	0.15	200
RE2-350V470M	47	16 x 31.5	0.15	260
400 V				
RE2-400V010M	1	8 x 11.5	0.20	15
RE2-400V2R2M	2.2	10 x 12.5	0.20	20
RE2-400V3R3M	3.3	10 x 16	0.20	35
RE2-400V4R7M	4.7	10 x 20	0.20	45
RE2-400V100M	10	12.5 x 20	0.20	75
RE2-400V220M	22	16 x 25	0.20	140
RE2-400V330M	33	16 x 31.5	0.20	190
RE2-400V470M	47	18 x 35.5	0.20	260

ELNA PART NO. / WV (V)	CAP. (μ F)	SIZE (ϕ x L) (mm)	$\tan \delta$	Ripple Current (mA _{rms})
450 V				
RE2-450V010M	1	10 x 12.5	0.23	15
RE2-450V2R2M	2.2	10 x 16	0.23	25
RE2-450V3R3M	3.3	10 x 20	0.23	35
RE2-450V4R7M	4.7	12.5 x 20	0.23	45
RE2-450V100M	10	12.5 x 25	0.23	75
RE2-450V220M	22	16 x 31.5	0.23	140
RE2-450V330M	33	18 x 35.5	0.23	200

Note: Allowable Ripple Current 120 Hz at 85°C

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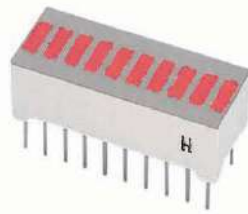


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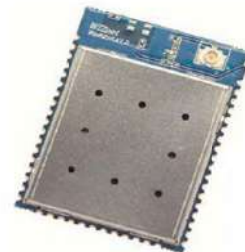
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Arduino Uno



MicroSD Breakout Board



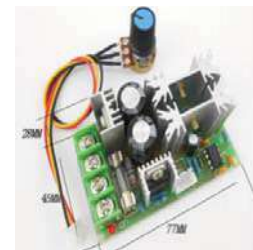
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