

Aluminium Electrolytic Capacitors (Radial Lead Type)

Japan
Malaysia
Taiwan

Series: **(Bi-polar) SU**
Type: **A (Radial Leads)**
Style: **JIS04**

Bi-polar

■ Features

- Lifetime: 85 °C 2000 h

■ Recommended Applications

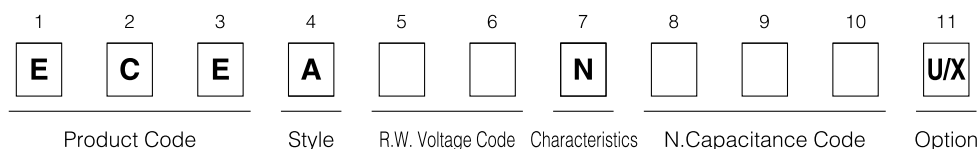
- AV (TV, Video, Audio), Office, Home appliance

■ Specifications

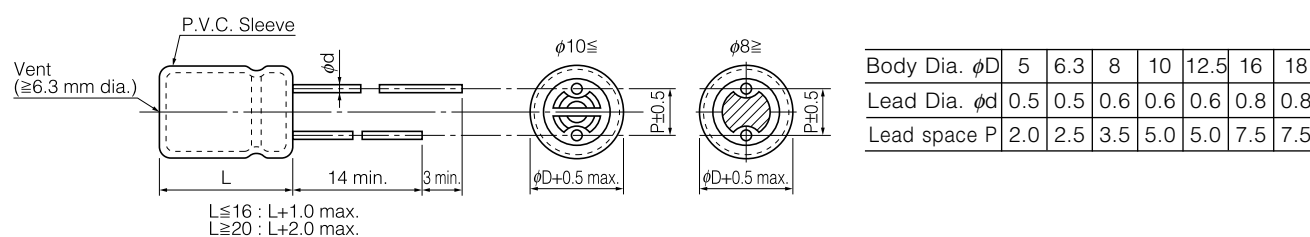
Operating Temp. Range	-40 to +85 °C																												
Rated W.V. Range	6.3 to 50 V.DC																												
Nominal Cap. Range	0.47 to 6800 µF																												
Capacitance Tolerance	±20 % (120 Hz/+20 °C)																												
DC Leakage Current	I ≤ 0.03 CV +3 (µA) after 5 minutes																												
Dissipation Factor	<table><tr><td>W.V. (V)</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td rowspan="2">(120 Hz/+20 °C) (max.)</td></tr><tr><td>D.F.</td><td>0.30</td><td>0.25</td><td>0.20</td><td>0.15</td><td>0.15</td><td>0.15</td></tr></table> Add 0.02 per 1000 µF for products of 1000 µF or more. (120 Hz/+20 °C)							W.V. (V)	6.3	10	16	25	35	50	(120 Hz/+20 °C) (max.)	D.F.	0.30	0.25	0.20	0.15	0.15	0.15							
W.V. (V)	6.3	10	16	25	35	50	(120 Hz/+20 °C) (max.)																						
D.F.	0.30	0.25	0.20	0.15	0.15	0.15																							
Characteristics at Low Temperature	<table><tr><td>W.V. (V)</td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td rowspan="3">$\left(\begin{array}{l} \text{Impedance ratio} \\ \text{at 120 Hz} \end{array} \right)$</td></tr><tr><td>Z(-25 °C)/Z(+20 °C)</td><td>4</td><td>3</td><td>2</td><td>2</td><td>2</td><td>2</td></tr><tr><td>Z(-40 °C)/Z(+20 °C)</td><td>8</td><td>6</td><td>4</td><td>4</td><td>4</td><td>3</td></tr></table> 1 Add 0.5 per 1000 µF for products of 1000 µF or more at -25 °C 2 Add 1.0 per 1000 µF for products of 1000 µF or more at -40 °C							W.V. (V)	6.3	10	16	25	35	50	$\left(\begin{array}{l} \text{Impedance ratio} \\ \text{at 120 Hz} \end{array} \right)$	Z(-25 °C)/Z(+20 °C)	4	3	2	2	2	2	Z(-40 °C)/Z(+20 °C)	8	6	4	4	4	3
W.V. (V)	6.3	10	16	25	35	50	$\left(\begin{array}{l} \text{Impedance ratio} \\ \text{at 120 Hz} \end{array} \right)$																						
Z(-25 °C)/Z(+20 °C)	4	3	2	2	2	2																							
Z(-40 °C)/Z(+20 °C)	8	6	4	4	4	3																							
Endurance	After 2000 hours application of DC working voltage (1000 hours for each polarity) at +85 °C, the capacitor shall meet the following limits. <table><tr><td>Capacitance change</td><td>±20 % of initial measured value</td></tr><tr><td>D.F.</td><td>≤ 150 % of initial specified value</td></tr><tr><td>DC leakage current</td><td>≤ Initial specified value</td></tr></table>							Capacitance change	±20 % of initial measured value	D.F.	≤ 150 % of initial specified value	DC leakage current	≤ Initial specified value																
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D.F.	≤ 150 % of initial specified value																												
DC leakage current	≤ Initial specified value																												
Shelf Life	After storage for 1000 hours at +85 °C with no voltage applied and then being stabilized at +20 °C, capacitor shall meet the limits specified in “Endurance”.																												

Design, Specifications are subject to change without notice. Ask factory for technical specifications before purchase and/or use.
Whenever a doubt about safety arises from this product, please inform us immediately for technical consultation without fail.

■ Explanation of Part Numbers



■ Dimensions in mm (not to scale)



■ Case size/Ripple current

$\phi D \times L$ (mm)/(mA) r.m.s. (120 Hz/+85 °C)

Cap. (μF) \ W.V. (V)	6.3 (0J)	10 (1A)	16 (1C)	25 (1E)	35 (1V)	50 (1H)
0.47 (R47)						5 × 11 10
1.0 (010)						5 × 11 10
2.2 (2R2)						5 × 11 18
3.3 (3R3)						5 × 11 25
4.7 (4R7)						5 × 11 30
10 (100)			5 × 11 40	5 × 11 45	5 × 11 43	6.3 × 11.2 50
22 (220)			5 × 11 60	* 5 × 11 60	6.3 × 11.2 80	8 × 11.5 90
33 (330)			5 × 11 80	6.3 × 11.2 90	8 × 11.5 100	8 × 11.5 110
47 (470)		5 × 11 90	6.3 × 11.2 100	6.3 × 11.2 110	8 × 11.5 120	10 × 12.5 140
100 (101)		* 6.3 × 11.2 130		8 × 11.5 180	10 × 16 230	10 × 20 250
220 (221)		8 × 11.5 200	* 10 × 12.5 260	10 × 16 320	12.5 × 20 360	12.5 × 25 360
330 (331)	8 × 11.5 250	10 × 16 280	10 × 16 330	12.5 × 20 350	12.5 × 20 450	16 × 25 450
470 (471)	* 10 × 12.5 310	10 × 16 340	10 × 20 380	12.5 × 20 430	12.5 × 25 590	16 × 31.5 590
1000 (102)	10 × 20 430	* 12.5 × 20 470	12.5 × 25 560	16 × 25 680		
2200 (222)	12.5 × 25 660	16 × 25 690	16 × 31.5 750	18 × 35.5 900		
3300 (332)	16 × 25 760	16 × 31.5 1090	18 × 35.5 900			
4700 (472)	16 × 31.5 1170	18 × 35.5 1200				
6800 (682)	18 × 35.5 1450					

* indicates an "X" in the part number suffix.

Note: 1. () shows W.V. and capacitance code.

2. Products of 63 and 100 V DC are available upon request.

3. For use in circuits where occasional reversals occur or polarity is unknown, a bi-polar type capacitor should be used (but not for AC circuits).

■ Standard Products(Bi-polar)

W.V.	Cap. (±20%)	Case size		Specification		Lead Length				Part No.	Min. Packaging Q'ty	
		Dia.	Length	Ripple current (120Hz) (+85°C)	D.F.	Lead Dia.	Lead Space				Straight Leads	Taping
							Straight	Taping *B	Taping *i			
(V)	(μF)	(mm)	(mm)	(mA)		(mm)	(mm)	(mm)	(mm)		(pcs)	(pcs)
6.3	330	8	11.5	250	0.30	0.6	3.5	5.0		ECEA0JN331U()	200	1000
	470	10	12.5	310	0.30	0.6	5.0	5.0		ECEA0JN471X()	200	500
	1000	10	20	430	0.30	0.6	5.0	5.0		ECEA0JN102U()	200	500
	2200	12.5	25	660	0.32	0.6	5.0	5.0		ECEA0JN222U()	200	500
	3300	16	25	760	0.34	0.8	7.5	7.5		ECEA0JN332U()	100	250
	4700	16	31.5	1170	0.36	0.8	7.5			ECEA0JN472U	100	
	6800	18	35.5	1450	0.40	0.8	7.5			ECEA0JN682U	50	
10	47	5	11.0	90	0.25	0.5	2.0	5.0	2.5	ECEA1AN470U()	200	2000
	100	6.3	11.2	130	0.25	0.5	2.5	5.0	2.5	ECEA1AN101X()	200	2000
	220	8	11.5	200	0.25	0.6	3.5	5.0		ECEA1AN221U()	200	1000
	330	10	16	280	0.25	0.6	5.0	5.0		ECEA1AN331U()	200	500
	470	10	16	340	0.25	0.6	5.0	5.0		ECEA1AN471U()	200	500
	1000	12.5	20	470	0.25	0.6	5.0	5.0		ECEA1AN102X()	200	500
	2200	16	25	690	0.27	0.8	7.5	7.5		ECEA1AN222U()	100	250
	3300	16	31.5	1090	0.29	0.8	7.5			ECEA1AN332U	100	
	4700	18	35.5	1200	0.31	0.8	7.5			ECEA1AN472U	50	
16	10	5	11	40	0.20	0.5	2.0	5.0	2.5	ECEA1CN100U()	200	2000
	22	5	11	60	0.20	0.5	2.0	5.0	2.5	ECEA1CN220U()	200	2000
	33	5	11	80	0.20	0.5	2.0	5.0	2.5	ECEA1CN330U()	200	2000
	47	6.3	11.2	100	0.20	0.5	2.5	5.0	2.5	ECEA1CN470U()	200	2000
	220	10	12.5	260	0.20	0.6	5.0	5.0		ECEA1CN221X()	200	500
	330	10	16	330	0.20	0.6	5.0	5.0		ECEA1CN331U()	200	500
	470	10	20	380	0.20	0.6	5.0	5.0		ECEA1CN471U()	200	500
	1000	12.5	25	560	0.20	0.6	5.0	5.0		ECEA1CN102U()	200	500
	2200	16	31.5	750	0.22	0.8	7.5			ECEA1CN222U	100	
	3300	18	35.5	900	0.24	0.8	7.5			ECEA1CN332U	50	
25	10	5	11	45	0.15	0.5	2.0	5.0	2.5	ECEA1EN100U()	200	2000
	22	5	11	60	0.15	0.5	2.0	5.0	2.5	ECEA1EN220X()	200	2000
	33	6.3	11.2	90	0.15	0.5	2.5	5.0	2.5	ECEA1EN330U()	200	2000
	47	6.3	11.2	110	0.15	0.5	2.5	5.0	2.5	ECEA1EN470U()	200	2000
	100	8	11.5	180	0.15	0.6	3.5	5.0		ECEA1EN101U()	200	1000
	220	10	16	320	0.15	0.6	5.0	5.0		ECEA1EN221U()	200	500
	330	12.5	20	350	0.15	0.6	5.0	5.0		ECEA1EN331U()	200	500
	470	12.5	20	430	0.15	0.6	5.0	5.0		ECEA1EN471U()	200	500
	1000	16	25	680	0.15	0.8	7.5	7.5		ECEA1EN102U()	100	250
	2200	18	35.5	900	0.17	0.8	7.5			ECEA1EN222U	50	
35	10	5	11	43	0.15	0.5	2.0	5.0	2.5	ECEA1VN100U()	200	2000
	22	6.3	11.2	80	0.15	0.5	2.5	5.0	2.5	ECEA1VN220U()	200	2000
	33	8	11.5	100	0.15	0.6	3.5	5.0		ECEA1VN330U()	200	1000
	47	8	11.5	120	0.15	0.6	3.5	5.0		ECEA1VN470U()	200	1000
	100	10	16	230	0.15	0.6	5.0	5.0		ECEA1VN101U()	200	500
	220	12.5	20	360	0.15	0.6	5.0	5.0		ECEA1VN221U()	200	500

When requesting taped product, please put the letter "B" or "i" between the "()". Lead wire pitch B=5mm, 7.5mm. i=2.5mm.

The taping dimensions are explained on p.25 of our Catalog. Please use it as a reference guide.

High temperature Load Life test : 85°C 2000h

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■ Standard Products(Bi-polar)

W.V. (V)	Cap. (±20%) (μF)	Case size		Specification		Lead Length				Part No.	Min. Packaging Qty	
		Dia.	Length	Ripple current (120Hz) (+85°C) (mA)	D.F.	Lead Dia.	Lead Space				Straight Leads	Taping
							Straight	Taping *B	Taping *i			
		(mm)	(mm)	(mA)		(mm)	(mm)	(mm)	(mm)		(pcs)	(pcs)
35	330	12.5	20	450	0.15	0.6	5.0	5.0		ECEA1VN331U()	200	500
	470	12.5	25	590	0.15	0.6	5.0	5.0		ECEA1VN471U()	200	500
50	0.47	5	11	10	0.15	0.5	2.0	5.0	2.5	ECEA1HNR47U()	200	2000
	1	5	11	10	0.15	0.5	2.0	5.0	2.5	ECEA1HN010U()	200	2000
	2.2	5	11	18	0.15	0.5	2.0	5.0	2.5	ECEA1HN2R2U()	200	2000
	3.3	5	11	25	0.15	0.5	2.0	5.0	2.5	ECEA1HN3R3U()	200	2000
	4.7	5	11	30	0.15	0.5	2.0	5.0	2.5	ECEA1HN4R7U()	200	2000
	10	6.3	11.2	50	0.15	0.5	2.5	5.0	2.5	ECEA1HN100U()	200	2000
	22	8	11.5	90	0.15	0.6	3.5	5.0		ECEA1HN220U()	200	1000
	33	8	11.5	110	0.15	0.6	3.5	5.0		ECEA1HN330U()	200	1000
	47	10	12.5	140	0.15	0.6	5.0	5.0		ECEA1HN470U()	200	500
	100	10	20	250	0.15	0.6	5.0	5.0		ECEA1HN101U()	200	500
	220	12.5	25	360	0.15	0.6	5.0	5.0		ECEA1HN221U()	200	500
	330	16	25	450	0.15	0.8	7.5	7.5		ECEA1HN331U()	100	250
	470	16	31.5	590	0.15	0.8	7.5			ECEA1HN471U	100	

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High temperature Load Life test : 85°C 2000h