

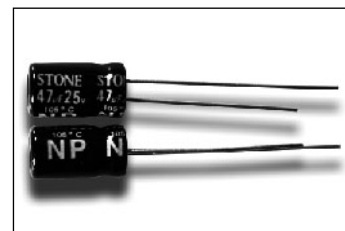


Aluminum Electrolytic Capacitors

NP Series

Features

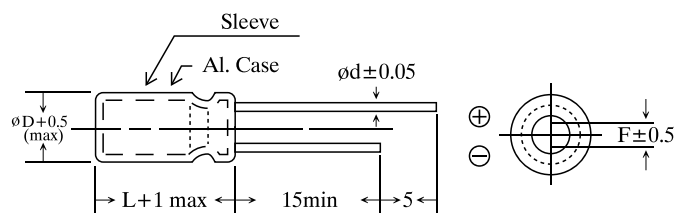
- 85°C, Standard non-polarized series
- RoHS Compliance



Specification

Items	Performance																																							
Capacitance Tolerance	$\pm 20\%$ (at 120Hz, 20°C)																																							
Rated Voltage Range	10 to 100 VDC																																							
Capacitance Range	0.47 to 1000 μ F																																							
Operating Temperature Range	-40 to + 85°C																																							
Leakage Current (at 20°C)	I $\leq$ 0.03 CV or 4 (μ A), whichever is greater. After 3 minutes application of working voltage. I=Leakage current (μ A), C=Rated capacitance (μ F), V=Rated voltage (V)																																							
Dissipation Factor (Tan δ at 120Hz, 20°C)	<table><tr><td>Rated Voltage</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 (max)</td><td>0.20</td><td>0.17</td><td>0.17</td><td>0.15</td><td>0.12</td><td>0.11</td><td>0.10</td></tr></table> For capacitance > 1000 μ F, add 0.02 per 1000 μ F increase.								Rated Voltage	10	16	25	35	50	63	100	Tan δ (max)	0.20	0.17	0.17	0.15	0.12	0.11	0.10																
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Low Temperature Characteristics (at 120Hz)	<table><tr><td colspan="8">Impedance ratio max.</td></tr><tr><td>Rated Voltage</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>Z-25°C/Z+20°C</td><td>3</td><td>2</td><td>2</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>3</td><td>3</td><td>3</td><td>3</td></tr></table>								Impedance ratio max.								Rated Voltage	10	16	25	35	50	63	100	Z-25°C/Z+20°C	3	2	2	2	2	2	2	Z-40°C/Z+20°C	8	6	4	3	3	3	3
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Load Life	After 2000 hours application of W.V. at 85°C, the capacitor shall meet the following limits. Capacitance change : $\leq \pm 25\%$ of initial value Dissipation factor : $\leq 200\%$ of initial specified value Leakage Current : $\leq$ Initial specified value																																							
Shelf Life	After storage for 1000 hours at 85°C, with no voltage applied and being stabilized at + 20°C, Capacitor shall meet the limit specified in load life.																																							
Ripple Current & Frequency Multiplier	<table><tr><td> Freq.(Hz) Cap.(μ F) </td><td>60 (50)</td><td>120</td><td>500</td><td>1K</td><td>10K up</td></tr><tr><td>Under 100</td><td>0.70</td><td>1.00</td><td>1.20</td><td>1.30</td><td>1.50</td></tr><tr><td>100 to 1000</td><td>0.75</td><td>1.00</td><td>1.10</td><td>1.15</td><td>1.30</td></tr><tr><td>1000 up above</td><td>0.80</td><td>1.00</td><td>1.05</td><td>1.10</td><td>1.15</td></tr></table>								Freq.(Hz) Cap.(μ F)	60 (50)	120	500	1K	10K up	Under 100	0.70	1.00	1.20	1.30	1.50	100 to 1000	0.75	1.00	1.10	1.15	1.30	1000 up above	0.80	1.00	1.05	1.10	1.15								
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DIAGRAM OF DIMENSIONS



LEAD SPACING AND DIAMTER

Unit: mm

D	5	6.3	8	10	13	16
F	2.0	2.5	3.5	5.0		7.5
d	0.5			0.6		0.8

DIMENSION & PERMISSIBLE RIPPLE CURRENT

Dimension : $\phi D \times L$ (mm)

Ripple Current : mA/rms at 120Hz, 85°C

VDC μF	10V		16V		25V		35V		50V		63V		100V	
	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA	$\phi D \times L$	mA
0.47									5x11.5	7	5x11.5	7	5x11.5	8
1									5x11.5	9	5x11.5	9	5x11.5	10
2.2									5x11.5	15	5x11.5	15	6.3x11	17
3.3									5x11.5	18	5x11.5	18	6.3x11	22
4.7									5x11.5	22	5x11.5	22	6.3x11	26
10					5x11.5	29	5x11.5	30	6.3x11	42	6.3x11	45	8x11	45
22			5x11.5	42	6.3x11	46	6.3x11	52	6.3x11	63	8x11	70	10x16	98
33			5x11.5	52	6.3x11	58	8x11	70	8x11	77	10x16	82	10x20	148
47	5x11.5	62	6.3x11	78	6.3x11	82	8x11	92	8x11	95	10x16	125	13x21	166
100	6.3x11	90	6.3x11	99	8x11	136	10x16	172	10x20	190	13x21	265	16x26	371
220	8x11	150	10x16	224	10x16	232	10x20	280	13x26	342				
330	10x12.5	225	10x12.5	245	10x17	290	13x21	340	16x26	460				
470	10x12.5	280	10x20	345	13x21	380	13x26	450	16x26	590				
1000	10x20	400	13x26	471										