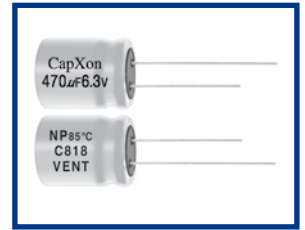


## NP Series Non-polarized 85°C

### Features

- ◆ NP Series for crossover networks of high-pitched, mean and low-pitched sounds in high-fidelity sound systems.
- ◆ The series offers excellent frequency characteristics and minimal capacitance deviation with frequency.
- ◆ For detail specifications, please refer to Engineering Bulletin No. E105
- ◆ RoHS Compliant



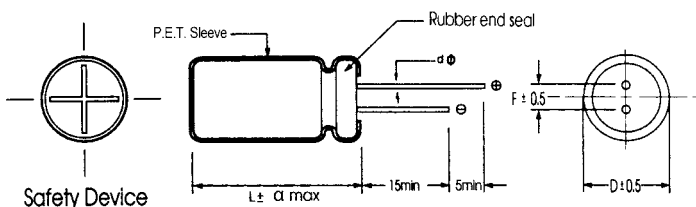
### Specifications

Item	Performance Characteristics																																				
Operating Temperature Range	-40 to +85°C	-25 to +85°C																																			
Rated Voltage Range	6.3 to 100 VDC	160 to 250 VDC																																			
Capacitance Range	0.47 to 3300 μF	0.47 to 47 μF																																			
Capacitance Tolerance	±20%(120Hz,+20°C)																																				
Leakage Current (+20°C,max.)	I ≤ 0.03 CV or 3 (μA) After 1 minute whichever is greater measured with rated working voltage applied.																																				
Dissipation Factor (tan δ , at 20°C , 120Hz)	<table border="1"> <tr> <th>Working Voltage(VDC)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>160</th> <th>200</th> <th>250</th> </tr> <tr> <td>D.F. (%)max.</td> <td>25</td> <td>25</td> <td>20</td> <td>15</td> <td>15</td> <td>13</td> <td>10</td> <td>10</td> <td>15</td> <td>15</td> <td>20</td> </tr> </table> <p>For Capacitance &gt; 1000 uF, add 2% per another 1000 uF</p>		Working Voltage(VDC)	6.3	10	16	25	35	50	63	100	160	200	250	D.F. (%)max.	25	25	20	15	15	13	10	10	15	15	20											
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Low Temperature Characteristics (at 120Hz)	<p>Impedance ratio max</p> <table border="1"> <tr> <th>Working Voltage(VDC)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> </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> <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>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </table> <table border="1"> <tr> <th>Working Voltage(VDC)</th> <th>160</th> <th>200</th> <th>250</th> </tr> <tr> <td>Z-25°C / Z+20°C</td> <td>2</td> <td>2</td> <td>3</td> </tr> </table> <p>For Capacitance &gt; 1000 uF, add 0.5 per another 1000 uF for -25°C / +20°C add 1 per another 1000 uF for -40°C / +20°C</p>		Working Voltage(VDC)	6.3	10	16	25	35	50	63	100	Z-25°C / Z+20°C	4	3	2	2	2	2	2	2	Z-40°C / Z+20°C	8	6	4	4	3	3	3	3	Working Voltage(VDC)	160	200	250	Z-25°C / Z+20°C	2	2	3
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Working Voltage(VDC)	160	200	250																																		
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Load Life	<p>Test conditions</p> <p>Duration time : 2000Hrs</p> <p>Ambient temperature : +85°C</p> <p>Applied voltage : Rated DC working voltage</p> <p>Each 250 hours, we will reserve the terminal and test the characteristics.</p> <p>After test requirements at +20°C</p> <p>Capacitance change : ≤ ±20% of the initial measured value</p> <p>Dissipation factor : ≤ 150% of the initial specified value</p> <p>Leakage current : ≤ The initial specified value</p>																																				
Shelf Life	<p>Test conditions</p> <p>Duration time : 1000Hrs</p> <p>Ambient temperature : +85°C</p> <p>Applied voltage : None</p> <p>After test requirements at +20°C: Same limits as Load life.</p> <p>Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.</p>																																				

### Multiplier for Ripple Current vs. Frequency

CAP(μF)\Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
CAP ≤ 10	0.8	1	1.30	1.45	1.65	1.70
10 < CAP ≤ 100	0.8	1	1.23	1.36	1.48	1.53
100 < CAP ≤ 1000	0.8	1	1.16	1.25	1.35	1.38
1000 < CAP	0.8	1	1.11	1.17	1.25	1.28

### Diagram of Dimensions:(unit:mm)



D φ	5	6.3	8	10	13	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
d φ	0.5		L < 20 0.5	L ≥ 20 0.6	0.6		0.8

α	D < 18		D = 18	
	L < 35.5		L ≥ 35.5	
	1.5	1.5	2.0	2.0

## Case Size

φ DxL(mm)

WV Cap(μF)	6.3		10		16		25		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
10							5x11	34	5x11	43
22			5x11	55	5x11	57	6.3x11	65	6.3x11	75
33			5x11	66	5x11	75	6.3x11	86	8x11.5	105
47			5x11	82	6.3x11	97	6.3x11	100	8x11.5	120
100	6.3x11	120	6.3x11	125	8x11.5	162	8x11.5	175	10x12.5	210
									10x16	230
220	6.3x11	175	8x11.5	205	10x12.5	270	10x12.5	295	10x20	400
									10x16	310
330	8x11.5	250	10x12.5	270	10x16	350	10x20	440	13x20	495
			10x16	300						
470	10x12.5	330	10x16	388	10x20	455	13x20	530	13x25	655
1000	10x20	650	13x20	700	13x20	730				
					13x25	800				
2200	13x20	850	16x25	1000	16x31.5	1100				
3300	16x25	970	18x35.5	1300						

WV Cap(μF)	50		63		100		160	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
0.47	5x11	11	5x11	12	5x11	14	5x11	17
1	5x11	17	5x11	18	5x11	21	6.3x11	25
2.2	5x11	25	5x11	26	5x11	34	8x11.5	38
3.3	5x11	27	6.3x11	28	6.3x11	39	8x11.5	43
4.7	5x11	34	6.3x11	34	8x11.5	47	10x12.5	52
10	6.3x11	52	6.3x11	57	8x11.5	71	10x16	89
22	8x11.5	92	8x11.5	97	10x16	140	13x20	155
33	8x11.5	109	10x12.5	140	10x16	190	13x20	230
					10x20	220		
47	10x12.5	150	10x16	180	10x20	195	13x25	250
					13x20	240		
100	10x20	265	13x20	320	16x25	425		
220	13x20	475	13x25	510	16x25	520		
					16x31.5	550		
330	13x25	560						

WV Cap(μF)	200		250	
	Size	Ripple	Size	Ripple
0.47	6.3x11	21	6.3x11	28
1	8x11.5	28	8x11.5	32
2.2	8x11.5	42	10x12.5	48
3.3	10x12.5	46	10x16	57
4.7	10x16	56	10x20	88
10	10x20	95	10x20	130
22	13x20	180	13x25	224
33	13x25	250	16x25	305

Ripple Current ( mA, rms ) at 85°C 120Hz