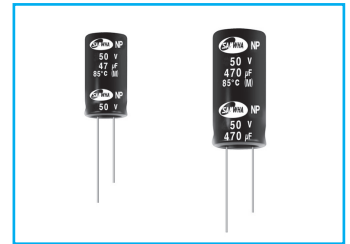


NP Non-Polarized Series

- Standard non-polarized series
- Designed for use in circuits with reversing polarity
- Higher voltage ratings available up to 250V
- Load life of 2000 hours at 85°C
- Complied to the RoHS directive

Non-polarized
 Solvent Proof
 WV ≤ 100V

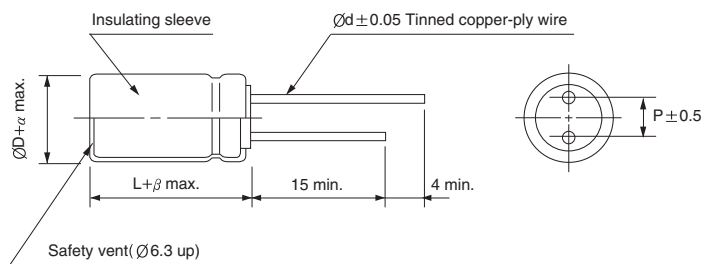
SD → NP
 Non-polar



Item	Characteristics																							
Operating temperature range	-40 ~ +85°C																							
Leakage current max.	$I = 0.03CV$ or $3\mu A$ whichever is greater (after 5 minutes)																							
Capacitance tolerance	±20% at 120Hz, 20°C																							
Dissipation factor max. (at 120Hz, 20°C)	Capacitance > 1000µF : tanδ increases by 0.02 for each 1000µF from below value.																							
	<table border="1"> <thead> <tr> <th>WV</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>80</th> <th>100</th> <th>160</th> <th>200,250</th> </tr> </thead> <tbody> <tr> <td>tanδ</td> <td>0.25</td> <td>0.23</td> <td>0.20</td> <td>0.15</td> <td>0.15</td> <td>0.12</td> <td>0.12</td> <td>0.12</td> <td>0.12</td> <td>0.15</td> <td>0.20</td> </tr> </tbody> </table>	WV	6.3	10	16	25	35	50	63	80	100	160	200,250	tanδ	0.25	0.23	0.20	0.15	0.15	0.12	0.12	0.12	0.12	0.15
WV	6.3	10	16	25	35	50	63	80	100	160	200,250													
tanδ	0.25	0.23	0.20	0.15	0.15	0.12	0.12	0.12	0.12	0.15	0.20													
Low temperature characteristics (Impedance ratio at 120Hz)	<table border="1"> <thead> <tr> <th>WV</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25-100</th> <th>160-250</th> </tr> </thead> <tbody> <tr> <td>Z-25°C/Z+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>3</td> </tr> <tr> <td>Z-40°C/Z+20°C</td> <td>10</td> <td>8</td> <td>6</td> <td>4</td> <td>5</td> </tr> </tbody> </table>	WV	6.3	10	16	25-100	160-250	Z-25°C/Z+20°C	4	3	2	2	3	Z-40°C/Z+20°C	10	8	6	4	5					
	WV	6.3	10	16	25-100	160-250																		
	Z-25°C/Z+20°C	4	3	2	2	3																		
Z-40°C/Z+20°C	10	8	6	4	5																			
Load life (after application of the rated voltage for 2000 hours at 85°C)	<table border="1"> <tbody> <tr> <td>Leakage current</td> <td>Less than specified value</td> </tr> <tr> <td>Capacitance change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>tanδ</td> <td>Less than 200% of specified value</td> </tr> <tr> <td>Test method</td> <td>Polarity reverse each 250 hours</td> </tr> </tbody> </table>	Leakage current	Less than specified value	Capacitance change	Within ±20% of initial value	tanδ	Less than 200% of specified value	Test method	Polarity reverse each 250 hours															
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Test method	Polarity reverse each 250 hours																							
Shelf life (at 85°C)	After 1000 hours no load test, leakage current, capacitance and tanδ are same as load life value. The measurement shall be performed at 20°C by the KS C IEC 60384 - 4																							

● DRAWING

Unit : mm



ØD	5	6.3	8	10	12.5	16	18	22
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0
Ød	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0
β	1.5		2.0		3.0			
α	0.5				1.0			

MINIATURE TYPES

● FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

µF \ Frequency	50Hz	120Hz	1kHz	10kHz ≤
~ 47	0.75	1.00	1.55	2.00
68 ~ 680	0.80	1.00	1.34	1.50
1000 ~	0.85	1.00	1.13	1.15

MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

NP series

● DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

μF \diagdown WV	6.3	10	16	25	35	50	63	80	100	160	200	250
1.0						5 × 11 18	5 × 11 18	5 × 11 18	5 × 11 18			
1.5						5 × 11 21	5 × 11 21	5 × 11 21	5 × 11 21			
2.2						5 × 11 26	5 × 11 26	5 × 11 26	5 × 11 26			
3.3						5 × 11 32	5 × 11 32	5 × 11 32	5 × 11 32	10 × 16 49	10 × 16 42	10 × 20 46
4.7						5 × 11 38	5 × 11 38	5 × 11 38	6.3 × 11 44	10 × 16 59	10 × 20 55	12.5 × 20 63
6.8						5 × 11 46	5 × 11 46	6.3 × 11 52	8 × 11.5 62	10 × 20 77	12.5 × 20 78	12.5 × 20 78
10						5 × 11 55	6.3 × 11 64	6.3 × 11 64	8 × 11.5 75	12.5 × 20 109	12.5 × 20 95	12.5 × 25 103
15					5 × 11 61	6.3 × 11 78	6.3 × 11 78	8 × 11.5 92	10 × 12.5 107	12.5 × 20 134	12.5 × 25 127	16 × 25 140
22				5 × 11 73	6.3 × 11 84	6.3 × 11 94	8 × 11.5 111	10 × 12.5 129	10 × 16 142	12.5 × 25 177	16 × 25 170	16 × 31.5 186
33			5 × 11 78	6.3 × 11 103	6.3 × 11 103	8 × 11.5 136	10 × 12.5 158	10 × 16 173	10 × 20 189	16 × 25 240	16 × 35.5 239	18 × 35.5 256
47		5 × 11 87	6.3 × 11 107	6.3 × 11 123	8 × 11.5 145	10 × 12.5 189	10 × 16 207	10 × 20 226	12.5 × 20 265	16 × 35.5 329	18 × 40 321	
68	5 × 11 100	6.3 × 11 120	6.3 × 11 129	8 × 11.5 175	10 × 12.5 203	10 × 16 249	10 × 20 272	12.5 × 20 319	12.5 × 25 348	18 × 35.5 425		
100	6.3 × 11 139	6.3 × 11 145	8 × 11.5 184	10 × 12.5 247	10 × 16 270	10 × 20 329	10 × 20 329	12.5 × 20 387	16 × 25 468			
150	6.3 × 11 171	8 × 11.5 210	10 × 12.5 262	10 × 16 331	10 × 20 361	10 × 20 404	12.5 × 20 474	12.5 × 25 516	16 × 25 573			
220	8 × 11.5 244	10 × 12.5 295	10 × 16 347	10 × 20 437	10 × 20 437	12.5 × 20 574	12.5 × 25 625	16 × 25 694	16 × 35.5 797			
330	10 × 12.5 347	10 × 16 396	10 × 20 464	10 × 20 535	12.5 × 20 628	16 × 25 850	16 × 25 850	16 × 35.5 976	18 × 40 1098			
470	10 × 16 454	10 × 20 516	10 × 20 553	12.5 × 20 750	12.5 × 25 818	16 × 31.5 1110	16 × 35.5 1164	18 × 40 1311	22 × 41 1443			
680	10 × 20 595	12.5 × 20 729	12.5 × 20 781	12.5 × 25 984	16 × 25 1091	18 × 35.5 1503	18 × 40 1577	22 × 41 1736				
1000	12.5 × 20 847	12.5 × 20 883	12.5 × 25 1033	16 × 25 1323	16 × 35.5 1519	18 × 40 1912	22 × 41 2105					
1500	12.5 × 20 999	12.5 × 25 1132	16 × 25 1338	16 × 35.5 1748	18 × 40 1968	22 × 41 2386						
2200	12.5 × 25 1272	16 × 25 1463	16 × 35.5 1781	18 × 40 2254	22 × 41 2481							
3300	16 × 25 1672	16 × 35.5 1985	18 × 40 2360	22 × 41 2890								
4700	16 × 35.5 2221	18 × 40 2579	22 × 41 2987									
6800	18 × 41 2840	22 × 41 3214										
10000	22 × 41 3516	← Case size $\varnothing D \times L$ (mm) ← Ripple current (mA rms) at 85°C, 120Hz										