

# SURFACE MOUNT ALUMINUM ELECTROLYTIC

**>NV** Low Impedance Series

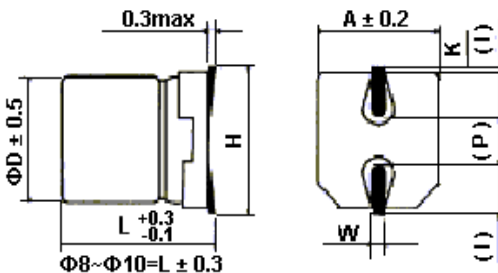
- Features : 105°C 1000 hours , Wide temperature range, Low profile vertical chip, Low impedance
- Recommended Applications: Suitable for AV(TV, Video, Audio), Monitor/Computer, Battery charger, DC/DC converter, SMPS, Noise filter
- Corresponding product to RoHS



## ■ Specifications

Item	Characteristics																																
Operating Temperature Range	-40 ~ +105°C																																
Rated Voltage Range (WV)	4 ~ 50VDC																																
Capacitance Range	0.1 ~ 1500 $\mu$ F																																
Capacitance Tolerance	$\pm 20\%$ at 120Hz , 20°C																																
Leakage Current (MAX) (20°C)	$I \leq 0.01CV$ or $3(\mu A)$ , whichever is greater. (After rated voltage applied for 2 minutes ) I= Leakage Current ( $\mu A$ ) C= Nominal Capacitance ( $\mu F$ ) V= Rated Voltage (V)																																
Dissipation Factor (MAX) (tan $\delta$ ) (120Hz , 20°C)	Shown in the table of standard rating																																
Low Temperature Stability Impedance Ratio (MAX)	<table border="1" style="margin-left: 20px;"> <thead> <tr> <th style="text-align: center;">WV</th> <th>4</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> </thead> <tbody> <tr> <td>Z(120HZ)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Z(-25°C) / Z(20°C)</td> <td>4</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>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table>	WV	4	6.3	10	16	25	35	50	Z(120HZ)								Z(-25°C) / Z(20°C)	4	2	2	2	2	2	2	Z(-40°C) / Z(20°C)	8	4	4	3	3	3	3
WV	4	6.3	10	16	25	35	50																										
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Endurance	<p>After applying rated voltage with rated ripple current for 1000hrs at 105°C , the capacitors shall meet the following requirements.</p> <table border="1" style="margin-left: 20px;"> <tbody> <tr> <td>Capacitance Change</td> <td>Within <math>\pm 20\%</math> of the initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>Not more than 200% of the specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Not more than the specified value</td> </tr> </tbody> </table>	Capacitance Change	Within $\pm 20\%$ of the initial value	Dissipation Factor	Not more than 200% of the specified value	Leakage Current	Not more than the specified value																										
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Shelf Life	After placed at 105°C without voltage applied for 1000 hours, the capacitor shall meet the same requirement as Endurance.																																

## ■ Diagram of Dimensions(mm)



( ) : Reference size

$\phi D$	L	A	H	I	W	P	K
4.0	5.4	4.3	5.5 Max	1.8	0.65 $\pm$ 0.1	1.0 $\pm$ 0.2	0.35 +0.15/-0.20
5.0	5.4	5.3	6.5 Max	2.2	0.65 $\pm$ 0.1	1.5 $\pm$ 0.2	0.35 +0.15/-0.20
6.3	5.4	6.6	7.8 Max	2.6	0.65 $\pm$ 0.1	1.8 $\pm$ 0.2	0.35 +0.15/-0.20
8.0	6.2	8.3	9.5 Max	3.4	0.65 $\pm$ 0.1	2.2 $\pm$ 0.2	0.35 +0.15/-0.20
8.0	10.2	8.3	10.0 Max	3.4	0.90 $\pm$ 0.2	3.1 $\pm$ 0.2	0.70 $\pm$ 0.20
10.0	10.2	10.3	12.0 Max	3.5	0.90 $\pm$ 0.2	4.6 $\pm$ 0.2	0.70 $\pm$ 0.20

## ■ Multiplier for Ripple Current

Frequency coefficient

Frequency (Hz)	120	1K	10K	100K
Coefficient	0.7	0.8	0.9	1.0

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## ■ Dimensions, Max Permissible Ripple Current, Max Impedance

Capacitance ( $\mu F$ )	Rated (Surge) Voltage															
	4(5)				6.3(8)				10(13)				16(20)			
	Size	$\tan \delta$	Ripple	Z	Size	$\tan \delta$	Ripple	Z	Size	$\tan \delta$	Ripple	Z	Size	$\tan \delta$	Ripple	Z
10	4x5.4	0.35	60	4.0					4x5.4	0.22	60	4.0	4x5.4	0.16	60	4.0
22	4x5.4	0.35	60	4.0	4x5.4	0.26	60	4.0	5x5.4	0.22	95	2.6	5x5.4	0.16	95	2.6
33	4x5.4	0.35	60	4.0	5x5.4	0.26	95	2.6	5x5.4	0.22	95	2.6	5x5.4	0.16	95	2.6
47	4x5.4	0.35	60	4.0	5x5.4	0.26	95	2.6	6.3x5.4	0.22	95	1.3	6.3x5.4	0.16	140	1.3
68	4x5.4	0.35	60	4.0	6.3x5.4	0.26	140	1.3	6.3x5.4	0.22	140	1.3	6.3x7.7	0.20	230	0.8
100	5x5.4	0.35	95	3.0	6.3x5.4	0.26	140	1.3	6.3x5.4	0.22	140	1.3	6.3x7.7	0.20	230	0.8
150	6.3x5.4	0.35	140	2.6	6.3x7.7	0.35	230	0.8	6.3x7.7	0.26	230	0.8	10x10.2	0.20	450	0.5
220	6.3x5.4	0.35	140	2.6	6.3x7.7	0.35	230	0.8	6.3x7.7	0.26	230	0.8	10x10.2	0.20	450	0.5
330					8x10.2	0.35	450	0.5	8x10.2	0.26	450	0.5	10x10.2	0.20	670	0.3
470					10x10.2	0.35	670	0.3	10x10.2	0.26	670	0.3	10x10.2	0.20	670	0.3
1000					10x10.2	0.35	670	0.3	10x10.2	0.26	670	0.3				
1500					10x10.2	0.35	670	0.3								

Capacitance ( $\mu F$ )	Rated (Surge) Voltage											
	25(32)				35(44)				50(63)			
	Size	$\tan \delta$	Ripple	Z	Size	$\tan \delta$	Ripple	Z	Size	$\tan \delta$	Ripple	Z
1					4x5.4	0.12	60	4.0	4x5.4	0.12	60	5.0
2.2					4x5.4	0.12	60	4.0	4x5.4	0.12	60	5.0
3.3					4x5.4	0.12	60	4.0	4x5.4	0.12	60	5.0
4.7	4x5.4	0.14	60	4.0	4x5.4	0.12	60	4.0	5x5.4	0.12	95	4.0
6.8	4x5.4	0.14	60	4.0	5x5.4	0.12	95	2.6	6.3x5.4	0.12	140	2.6
10	5x5.4	0.14	95	2.6	5x5.4	0.12	95	2.6	6.3x5.4	0.12	140	2.6
22	6.3x5.4	0.14	140	1.3	6.3x5.4	0.12	140	1.3	6.3x7.7	0.12	230	1.3
33	6.3x5.4	0.14	140	1.3	6.3x7.7	0.14	230	0.8	8x10.2	0.12	300	1.1
47	6.3x5.4	0.14	140	1.3	6.3x7.7	0.14	230	0.8	10x10.2	0.12	670	0.8
68	8x10.2	0.16	450	0.5	8x10.2	0.14	450	0.5	10x10.2	0.12	670	0.8
100	8x10.2	0.16	450	0.5	10x10.2	0.14	670	0.3	10x10.2	0.12	670	0.8
220	10x10.2	0.16	670	0.3	10x10.2	0.14	670	0.3	10x10.2	0.12	670	0.8
330	10x10.2	0.16	670	0.3	10x10.2	0.14	670	0.3				
470	10x10.2	0.16	670	0.3								

☆Size: D  $\phi$  x L (mm) ☆Ripple Current: 105°C, 100KHz, (mA/rms) ☆Impedance: 20°C, 100KHz, Z( $\Omega$ ).