

V-CHIP ALUMINUM ELECTROLYTIC CAPACITORS



NP Non-Polarized

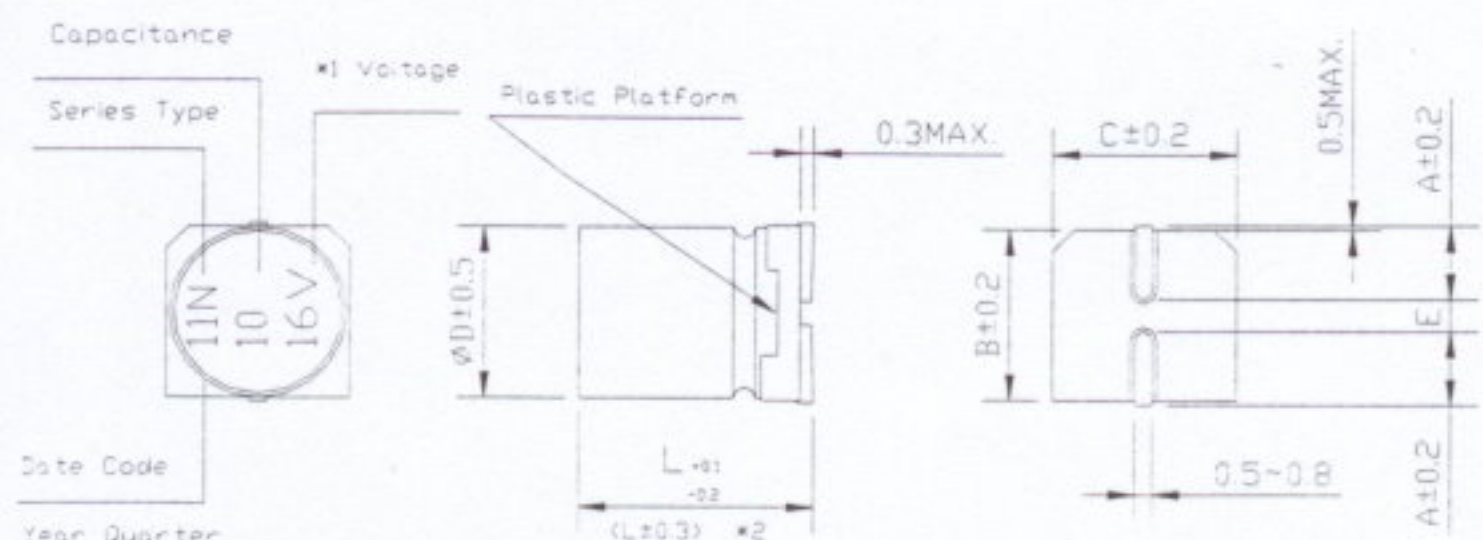
- Designed for surface mounting on high density circuit board.
- Emboss carrier tape packing system is available for automatic insertion.



◆ Specifications

Items	Performance Characteristics																							
Operating Temperature Range	-40~+85°C																							
Voltage Range	6.3~50V																							
Capacitance Range	0.1~100 μ F																							
Capacitance Tolerance	±20% at 120 Hz, 20°C																							
Leakage Current	After 2 minutes application of rated voltage, leakage current is not more than 0.05CV or 10 μ A, whichever is greater.																							
Tan δ	Measurement frequency: 120Hz, Temperature: 20°C <table border="1"> <tr> <td>Rated voltage(V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>Tan δ (max)</td> <td>0.24</td> <td>0.20</td> <td>0.17</td> <td>0.17</td> <td>0.15</td> <td>0.15</td> </tr> </table>	Rated voltage(V)	6.3	10	16	25	35	50	Tan δ (max)	0.24	0.20	0.17	0.17	0.15	0.15									
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Stability at Low Temperature	Measurement frequency: 120Hz <table border="1"> <tr> <td colspan="2">Rated voltage(V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td rowspan="2">Impedance ratio</td> <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>ZT/Z20 (max)</td> <td>8</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> </tr> </table>	Rated voltage(V)		6.3	10	16	25	35	50	Impedance ratio	Z-25°C/Z+20°C	4	3	2	2	2	2	ZT/Z20 (max)	8	6	4	4	3	3
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Load Life	After 1000 hours' application of rated voltage at 85°C with the polarity inverted every 250 hours, capacitors meet the characteristics requirements listed at right. <table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>Tan δ</td> <td>200% or less of initial specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Initial specified value or less</td> </tr> </table>	Capacitance Change	Within ±20% of initial value	Tan δ	200% or less of initial specified value	Leakage Current	Initial specified value or less																	
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Shelf Life	After leaving capacitors under no load at 85°C for 1000 hours, they meet the specified value for load life characteristics listed above.																							
Resistance to Soldering Heat	After reflow soldering according to Reflow Soldering Temperature / Time Profile (see page5) and restored at room temperature, they meet the characteristics requirements listed at right. <table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±10% of initial value</td> </tr> <tr> <td>Tan δ</td> <td>Initial specified value or less</td> </tr> <tr> <td>Leakage Current</td> <td>Initial specified value or less</td> </tr> </table>	Capacitance Change	Within ±10% of initial value	Tan δ	Initial specified value or less	Leakage Current	Initial specified value or less																	
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Applicable Standards	JIS C-5141 and JIS C-5102																							

◆ Chip Type



	(mm)			
φDxL	4x5.4	5x5.4	6.3x5.4	6.3x7.7
A	1.8	2.1	2.4	2.4
B	4.3	5.3	6.6	6.6
C	4.3	5.3	6.6	6.6
E	1.0	1.3	2.2	2.2
L	5.4	5.4	5.4	7.7

*1 Voltage mark for 6.3V is [6V]

*2 Applicable to 6.3x7.7

Re: Date code and series type —

1st digit for Year;

2nd digit for Quarter, 4 quarter date-code in one year: 1, 4, 7, 0;

3rd character for Series, NP Series = N.

V-CHIP ALUMINUM ELECTROLYTIC CAPACITORS



NP Series

◆ Dimensions

Cap. (μ F)	WV	6.3		10		16		25		35		50	
		0J		1A		1C		1E		1V		1H	
0.1	0R1											4x5.4	1.0
0.22	R22											4x5.4	2.0
0.33	R33											4x5.4	2.8
0.47	R47											4x5.4	4.0
1	010											4x5.4	8.4
2.2	2R2									4x5.4	8.4	5x5.4	13
3.3	3R3							5x5.4	12	5x5.4	16	5x5.4	17
4.7	4R7					4x5.4	12	5x5.4	16	5x5.4	18	6.3x5.4	20
10	100			4x5.4	17	5x5.4	23	6.3x5.4	27	6.3x5.4	29	6.3x7.7	36
22	220	5x5.4	28	6.3x5.4	33	6.3x5.4	37	6.3x7.7	50	6.3x7.7	54		
33	330	6.3x5.4	37	6.3x5.4	41	6.3x5.4	49	6.3x7.7	61				
47	470	6.3x5.4	45	6.3x7.7	61	6.3x7.7	75						
100	101	6.3x7.7	82	6.3x7.7	85							Case size	Allowable ripple

Allowable Ripple (mA rms) at 85°C 120Hz

◆ Frequency coefficient of allowable ripple current

Frequency	50Hz	120Hz	300Hz	1kHz	10kHz~
Coefficient	0.70	1.00	1.17	1.36	1.50