

# V-CHIP ALUMINUM ELECTROLYTIC CAPACITORS 片式铝电解电容器

## HT Series Wide Temperature

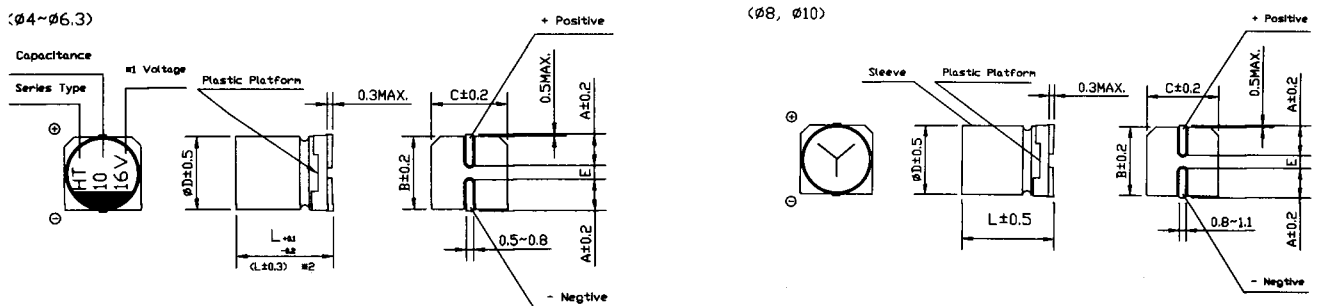
- Chip type, operating with wide temperature range -40~+105°C.
- Designed for surface mounting on high density circuit board.
- Emboss carrier tape packing system is available for automatic insertion.



### Specifications

Items	Performance Characteristics																										
Operating Temperature Range	-40~+105°C																										
Voltage Range	4~50V																										
Capacitance Range	0.1~1000μF																										
Capacitance Tolerance	±20% at 120Hz, 20°C																										
Leakage Current	After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3μA, whichever is greater.																										
Tan δ	Measurement frequency: 120Hz, Temperature: 20°C <table border="1"> <tr> <td>Rated voltage(V)</td> <td>4</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>0.35</td> <td>0.26</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.12</td> </tr> </table>	Rated voltage(V)	4	6.3	10	16	25	35	50	Tan δ (max)	0.35	0.26	0.20	0.16	0.14	0.12	0.12										
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Stability at Low Temperature	Measurement frequency: 120Hz <table border="1"> <tr> <td colspan="2">Rated voltage(V)</td> <td>4</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 ZT/Z20(max)</td> <td>Z-25°C/Z+20°C</td> <td>7</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40°C/Z+20°C</td> <td>15</td> <td>8</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> </tr> </table>	Rated voltage(V)		4	6.3	10	16	25	35	50	Impedance ratio ZT/Z20(max)	Z-25°C/Z+20°C	7	4	3	2	2	2	2	Z-40°C/Z+20°C	15	8	6	4	4	3	3
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Load Life	After 1000 hours' application of rated voltage at 105°C, capacitors meet the characteristics requirements listed at right <table border="1"> <tr> <td>Capacitance Change</td> <td>Within ±20% of initial value for capacitors of 25v or more Within ±25% of initial value for capacitors of 16v or less</td> </tr> <tr> <td>Leakage Current</td> <td>Initial specified value or less</td> </tr> <tr> <td>Tan δ</td> <td>200% or less of initial specified value</td> </tr> </table>	Capacitance Change	Within ±20% of initial value for capacitors of 25v or more Within ±25% of initial value for capacitors of 16v or less	Leakage Current	Initial specified value or less	Tan δ	200% or less of initial specified value																				
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Self Life	After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for load life characteristics listed above.																										
Resistance to Soldering Heat	The capacitors shall be kept on the hot plate maintained at 250°C for 30 seconds. After removing from the hot plate 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



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

\*2 Applicable to 6.3x7.7

(mm)

ΦD × L	4 × 5.4	5 × 5.4	6.3 × 5.4	6.3 × 7.7	8 × 10.5	10 × 10.5
A	1.8	2.1	2.4	2.4	2.9	3.2
B	4.3	5.3	6.6	6.6	8.3	10.3
C	4.3	5.3	6.6	6.6	8.3	10.3
E	1.0	1.3	2.2	2.2	3.1	4.5
L	5.4	5.4	5.4	7.7	10.5	10.5

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**HT** Series

• Dimensions

Cap. ( $\mu$ F)	WV	4		6.3		10		16		25		35		50	
		0G		0J		1A		1C		1E		1V		1H	
0.1	0R1													4×5.4	0.7
0.22	R22													4×5.4	1.6
0.33	R33													4×5.4	2.5
0.47	R47													4×5.4	3.5
1	010													4×5.4	7
2.2	2R2													4×5.4	11
3.3	3R3											4×5.4	13	4×5.4	13
4.7	4R7									4×5.4	13	4×5.4	14	5×5.4	16
10	100							4×5.4	18	5×5.4	20	5×5.4	21	6.3×5.4	24
22	220			4×5.4	22	5×5.4	25	5×5.4	27	6.3×5.4	36	6.3×5.4	38	6.3×7.7	51
33	330	4×5.4	18	5×5.4	27	5×5.4	30	6.3×5.4	40	6.3×5.4	44	6.3×5.4	42	6.3×7.7	60
47	470	4×5.4	23	5×5.4	33	6.3×5.4	41	6.3×5.4	48	6.3×5.4	48	6.3×7.7	49	6.3×7.7	63
100	101	5×5.4	42	6.3×5.4	50	6.3×5.4	53	6.3×5.4	60	6.3×7.7	91	8×10.5	155	8×10.5	155
150	151	6.3×5.4	61	6.3×5.4	55	6.3×5.4	62	6.3×7.7	95	8×10.5	140	8×10.5	155	10×10.5	300
220	221	6.3×5.4	68	6.3×7.7	105	6.3×7.7	105	6.3×7.7	105	8×10.5	175	10×10.5	300		
330	331	6.3×7.7	73	6.3×7.7	105	8×10.5	175	8×10.5	195	10×10.5	220				
470	471	6.3×7.7	105	8×10.5	170	8×10.5	210	10×10.5	310						
680	681	8×10.5	210	8×10.5	210	10×10.5	310	10×10.5	350						
1000	102	8×10.5	260	10×10.5	230									Case size	Allowable ripple

Allowable ripple (mA rms) at 105°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