

ALUMINUM ELECTROLYTIC CAPACITORS

UN series Chip Type, Bi-Polarized, Higher Capacitance Range



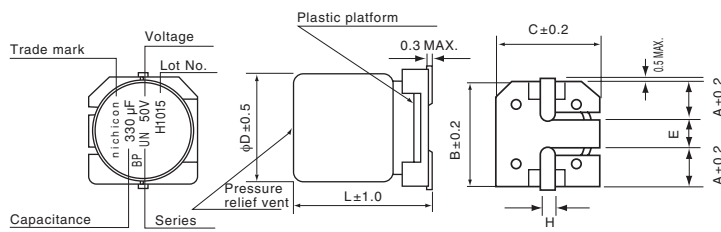
- Chip Type, higher capacitance in larger case sizes ($\phi 12.5$, $\phi 16$, $\phi 18$, $\phi 20$)
- Designed for surface mounting on high density PC board.
- Bi-polarized series for operations over wide temperature range of -55 to $+105^{\circ}\text{C}$.
- Applicable to automatic mounting machine fed with carrier tape and tray.
- Compliant to the RoHS directive (2011/65/EU).



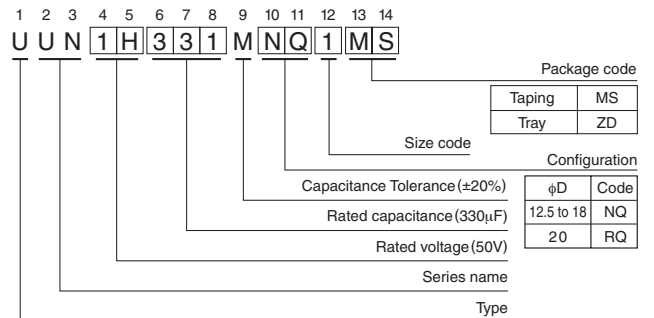
Specifications

Item	Performance Characteristics																													
Category Temperature Range	-55 to $+105^{\circ}\text{C}$																													
Rated Voltage Range	6.3 to 100V																													
Rated Capacitance Range	22 to 3300 μF																													
Capacitance Tolerance	$\pm 20\%$ at 120Hz, 20°C																													
Leakage Current	After 1 minute's application of rated voltage, leakage current is not more than 0.03CV or 4 (μA), whichever is greater.																													
Tangent of loss angle ($\tan \delta$)	Measurement frequency : 120Hz at 20°C																													
	<table border="1"> <thead> <tr> <th>Rated voltage (V)</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> </thead> <tbody> <tr> <td>$\tan \delta$ (MAX.)</td> <td>0.26</td> <td>0.22</td> <td>0.18</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> </tr> </tbody> </table> <p>For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.</p>	Rated voltage (V)	6.3	10	16	25	35	50	63	100	$\tan \delta$ (MAX.)	0.26	0.22	0.18	0.16	0.14	0.12	0.10	0.09											
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Stability at Low Temperature	Measurement frequency: 120Hz																													
	<table border="1"> <thead> <tr> <th colspan="2">Rated voltage (V)</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> </thead> <tbody> <tr> <td>Impedance ratio</td> <td>Z-25°C / Z$+20^{\circ}\text{C}$</td> <td>5</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>ZT / Z20 (MAX.)</td> <td>Z-40°C / Z$+20^{\circ}\text{C}$</td> <td>10</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table>	Rated voltage (V)		6.3	10	16	25	35	50	63	100	Impedance ratio	Z -25°C / Z $+20^{\circ}\text{C}$	5	4	3	2	2	2	2	2	ZT / Z20 (MAX.)	Z -40°C / Z $+20^{\circ}\text{C}$	10	8	6	4	3	3	3
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ZT / Z20 (MAX.)	Z -40°C / Z $+20^{\circ}\text{C}$	10	8	6	4	3	3	3	3																					
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 105°C with the polarity inverted every 250 hours.																													
	Capacitance change	Within $\pm 20\%$ of the initial capacitance value																												
	$\tan \delta$	200% or less than the initial specified value																												
Shelf Life	After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C , they shall meet the specified values for the endurance characteristics listed above.																													
	Leakage current	Less than or equal to the initial specified value																												
Marking	Black print on the case top.																													

Chip Type



Type numbering system (Example : 50V 330 μF)



(mm)

ϕD	12.5 \times 13.5	12.5 \times 16	16 \times 16.5	16 \times 21.5	18 \times 16.5	18 \times 21.5	20 \times 21.5
A	4.8	4.8	5.4	5.4	6.4	6.4	6.2
B	13.6	13.6	17.1	17.1	19.1	19.1	21.1
C	13.6	13.6	17.1	17.1	19.1	19.1	21.1
E	4.0	4.0	6.3	6.3	6.3	6.3	8.8
L	13.5	16.0	16.5	21.5	16.5	21.5	21.5
H	1.0 to 1.4	1.0 to 1.4	1.0 to 1.4	1.0 to 1.4	1.0 to 1.4	1.0 to 1.4	1.3 to 1.7

※ The vibration structure-resistant product is also available upon request, please ask for details.

● Dimension table in next page.

■ Dimensions

(μF) Cap.	Code	V		6.3		10		16		25		35		50		63		100			
		0J		1A		1C		1E		1V		1H		1J		2A					
22	220																		12.5 × 13.5	100	
33	330																		12.5 × 16	150	
47	470													12.5 × 13.5	130	12.5 × 13.5	140		16 × 16.5	180	
100	101											12.5 × 13.5	180	12.5 × 16	230	16 × 16.5	270		18 × 21.5	310	
220	221									12.5 × 13.5	270	16 × 16.5	330	18 × 16.5	400	18 × 21.5	440				
330	331					12.5 × 13.5	310	16 × 16.5	370	18 × 16.5	450	18 × 21.5	540	20 × 21.5	590						
										▲16 × 21.5	450			▲18 × 21.5	590						
470	471	12.5 × 13.5	270	12.5 × 13.5	340	16 × 16.5	420	16 × 16.5	490	18 × 21.5	590	20 × 21.5	640								
1000	102																				
								▲16 × 21.5	670												
2200	222	18 × 16.5	740	18 × 21.5	830																
		▲16 × 21.5	740																		
3300	332	18 × 21.5	920																		
																				Case size φD × L (mm)	Rated ripple

※ In this case, [6] will be put at 12th digit of type numbering system, "▲"

Rated ripple current (mArms) at 105°C 120Hz

● Frequency coefficient of rated ripple current

Cap.(μF)	Frequency				
	50 Hz	120 Hz	300 Hz	1 kHz	10 kHz or more
22 to 47	0.75	1.00	1.35	1.57	2.00
100 to 470	0.80	1.00	1.23	1.34	1.50
1000 to 3300	0.85	1.00	1.10	1.13	1.15

- Taping specifications are given in page 23.
- Recommended land size, soldering by reflow are given in page 18, 19.
- Please refer to page 3 for the minimum order quantity.