

UUN Chip Type, Bi-Polarized,
Higher Capacitance Range



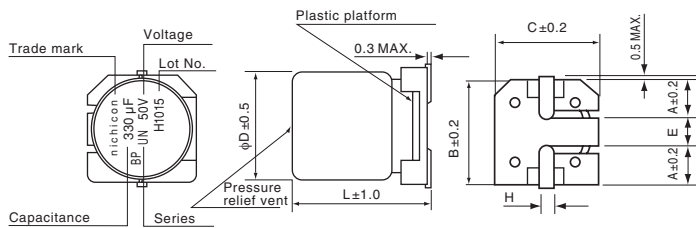
- Chip Type, higher capacitance in larger case sizes ($\phi 12.5$, $\phi 16$, $\phi 18$)
- Designed for surface mounting on high density PC board.
- Bi-polarized series for operations over wide temperature range of -55 to $+105^\circ\text{C}$.
- Applicable to automatic mounting machine fed with carrier tape.
- Compliant to the RoHS directive (2011/65/EU, (EU)2015/863).



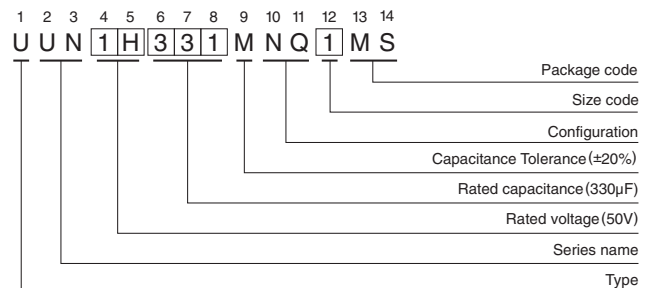
Specifications

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 at 20°C , 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"> <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> <td>63</td> <td>100</td> </tr> <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> </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										
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																					
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> <td>63</td> <td>100</td> </tr> <tr> <td rowspan="2">Impedance ratio (MAX.)</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>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> </table>	Rated voltage (V)		6.3	10	16	25	35	50	63	100	Impedance ratio (MAX.)	Z -25°C / Z $+20^\circ\text{C}$	5	4	3	2	2	2	2	2	Z -40°C / Z $+20^\circ\text{C}$	10	8	6	4	3	3	3
Rated voltage (V)		6.3	10	16	25	35	50	63	100																				
Impedance ratio (MAX.)	Z -25°C / Z $+20^\circ\text{C}$	5	4	3	2	2	2	2	2																				
	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																										
		Leakage current	Less than or equal to 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.																												
Marking	Black print on the case top.																												

Chip Type



Type numbering system (Example : 50V 330 μF)



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

(mm)

ϕD	12.5x13.5	12.5x16	16x16.5	16x21.5	18x16.5	18x21.5
A	4.8	4.8	5.4	5.4	6.4	6.4
B	13.6	13.6	17.1	17.1	19.1	19.1
C	13.6	13.6	17.1	17.1	19.1	19.1
E	4.0	4.0	6.3	6.3	6.3	6.3
L	13.5	16.0	16.5	21.5	16.5	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

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

● Dimension table in next page.

UUN

■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μF)	Case Size φD×L (mm)	tan δ	Leakage Current (μA) (at 20°C after 1 minute)	Rated Ripple (mArms) (105°C/120Hz)	Part Number
6.3 (0J)	470	12.5×13.5	0.26	88.83	270	UUN0J471MNQ1MS
	1000	12.5×16	0.26	189	500	UUN0J102MNQ1MS
	2200	18×16.5	0.28	415.8	740	UUN0J222MNQ1MS
	2200	16×21.5	0.28	415.8	740	UUN0J222MNQ6MS
	3300	18×21.5	0.30	623.7	920	UUN0J332MNQ1MS
10 (1A)	470	12.5×13.5	0.22	141	340	UUN1A471MNQ1MS
	1000	16×16.5	0.22	300	600	UUN1A102MNQ1MS
	2200	18×21.5	0.24	660	830	UUN1A222MNQ1MS
16 (1C)	330	12.5×13.5	0.18	158.4	310	UUN1C331MNQ1MS
	470	16×16.5	0.18	225.6	420	UUN1C471MNQ1MS
	1000	18×16.5	0.18	480	670	UUN1C102MNQ1MS
	1000	16×21.5	0.18	480	670	UUN1C102MNQ6MS
25 (1E)	220	12.5×13.5	0.16	165	270	UUN1E221MNQ1MS
	330	16×16.5	0.16	247.5	370	UUN1E331MNQ1MS
	470	16×16.5	0.16	352.5	490	UUN1E471MNQ1MS
	1000	18×21.5	0.16	750	780	UUN1E102MNQ1MS
35 (1V)	100	12.5×13.5	0.14	105	180	UUN1V101MNQ1MS
	220	16×16.5	0.14	231	330	UUN1V221MNQ1MS
	330	18×16.5	0.14	346.5	450	UUN1V331MNQ1MS
	330	16×21.5	0.14	346.5	450	UUN1V331MNQ6MS
	470	18×21.5	0.14	493.5	590	UUN1V471MNQ1MS
50 (1H)	47	12.5×13.5	0.12	70.5	130	UUN1H470MNQ1MS
	100	12.5×16	0.12	150	230	UUN1H101MNQ1MS
	220	18×16.5	0.12	330	400	UUN1H221MNQ1MS
	220	16×21.5	0.12	330	400	UUN1H221MNQ6MS
	330	18×21.5	0.12	495	540	UUN1H331MNQ1MS
	470	18×21.5	0.12	705	640	UUN1H471MNQ6MS
63 (1J)	47	12.5×13.5	0.10	88.83	140	UUN1J470MNQ1MS
	100	16×16.5	0.10	189	270	UUN1J101MNQ1MS
	220	18×21.5	0.10	415.8	440	UUN1J221MNQ1MS
	330	18×21.5	0.10	623.7	590	UUN1J331MNQ6MS
100 (2A)	22	12.5×13.5	0.09	66	100	UUN2A220MNQ1MS
	33	12.5×16	0.09	99	150	UUN2A330MNQ1MS
	47	16×16.5	0.09	141	180	UUN2A470MNQ1MS
	100	18×21.5	0.09	300	310	UUN2A101MNQ1MS

• For taping specifications, recommended land size/soldering by reflow and minimum order quantity, please refer to the Guidelines for Aluminum Electrolytic Capacitors.