

UUN

Chip Type, Bi-Polarized,
Higher Capacitance Range

For SMD



Bi-polarized

- 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).

UUN

Bi-polarized

UUJ

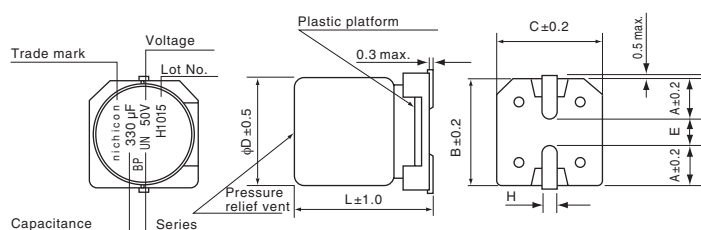


■ Specifications

Item	Performance Characteristics	
Category Temperature Range	-55 to $+105^{\circ}\text{C}$	
Rated Voltage Range	16 to 100V	
Rated Capacitance Range	22 to 1000 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 $0.03\text{CV}(\mu\text{A})$.	
Tangent of loss angle ($\tan \delta$)	Rated voltage (V)	16 25 35 50 63 100
	$\tan \delta$ (max.)	0.18 0.16 0.14 0.12 0.10 0.09
Measurement frequency : 120Hz at 20°C For capacitance of more than 1000 μF , add 0.02 for every increase of 1000 μF .		
Stability at Low Temperature	Rated voltage (V)	16 25 35 50 63 100
	Impedance ratio (max.)	$Z(-25^{\circ}\text{C}) / Z(+20^{\circ}\text{C})$ 3 2 2 2 2 2 $Z(-40^{\circ}\text{C}) / Z(+20^{\circ}\text{C})$ 6 4 3 3 3 3
Measurement frequency: 120Hz		
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	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.	

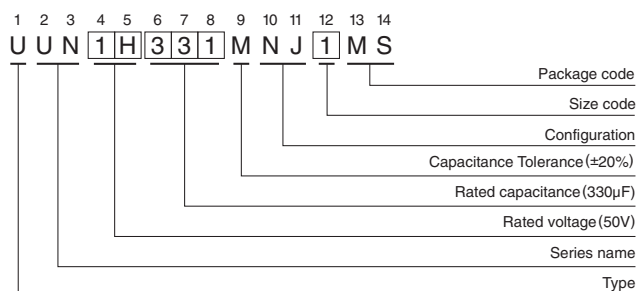
※ I : Leakage Current (μA), C : Rated Capacitance (μF), V : Rated Voltage (V)

■ Chip Type



(mm)

ϕD	12.5×13.5	12.5×16	16×16.5	16×21.5	18×16.5	18×21.5
A	5.15	5.15	5.65	5.65	6.65	6.65
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	(3.3)	(3.3)	(5.8)	(5.8)	(5.8)	(5.8)
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

Type numbering system (Example : 50V 330 μF)

※ There are also some products that can be manufactured as vibration resistant products.

● 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		0.85	1.00	1.10	1.13	1.15

● Dimension table in next page.

UUN

■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μ F)	Case Size ϕ D×L (mm)	$\tan \delta$	Leakage Current (μ A) (at 20°C after 1 minute)	Rated Ripple (mA _{rms}) (105°C/120Hz)	Part Number
16 (1C)	330	12.5×13.5	0.18	158.4	310	UUN1C331MNJ1MS
	470	16×16.5	0.18	225.6	420	UUN1C471MNJ1MS
	1000	18×16.5	0.18	480	670	UUN1C102MNJ1MS
	1000	16×21.5	0.18	480	670	UUN1C102MNJ6MS
25 (1E)	220	12.5×13.5	0.16	165	270	UUN1E221MNJ1MS
	330	16×16.5	0.16	247.5	370	UUN1E331MNJ1MS
	470	16×16.5	0.16	352.5	490	UUN1E471MNJ1MS
	1000	18×21.5	0.16	750	780	UUN1E102MNJ1MS
35 (1V)	100	12.5×13.5	0.14	105	180	UUN1V101MNJ1MS
	220	16×16.5	0.14	231	330	UUN1V221MNJ1MS
	330	18×16.5	0.14	346.5	450	UUN1V331MNJ1MS
	330	16×21.5	0.14	346.5	450	UUN1V331MNJ6MS
	470	18×21.5	0.14	493.5	590	UUN1V471MNJ1MS
50 (1H)	47	12.5×13.5	0.12	70.5	130	UUN1H470MNJ1MS
	100	12.5×16	0.12	150	230	UUN1H101MNJ1MS
	220	18×16.5	0.12	330	400	UUN1H221MNJ1MS
	220	16×21.5	0.12	330	400	UUN1H221MNJ6MS
	330	18×21.5	0.12	495	540	UUN1H331MNJ1MS
	470	18×21.5	0.12	705	640	UUN1H471MNJ6MS
63 (1J)	47	12.5×13.5	0.10	88.83	140	UUN1J470MNJ1MS
	100	16×16.5	0.10	189	270	UUN1J101MNJ1MS
	220	18×21.5	0.10	415.8	440	UUN1J221MNJ1MS
	330	18×21.5	0.10	623.7	590	UUN1J331MNJ6MS
100 (2A)	22	12.5×13.5	0.09	66	100	UUN2A220MNJ1MS
	33	12.5×16	0.09	99	150	UUN2A330MNJ1MS
	47	16×16.5	0.09	141	180	UUN2A470MNJ1MS
	100	18×21.5	0.09	300	310	UUN2A101MNJ1MS

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