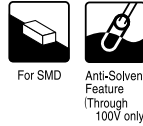
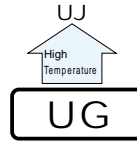


ALUMINUM ELECTROLYTIC CAPACITORS

UG series Chip Type, Higher Capacitance Range



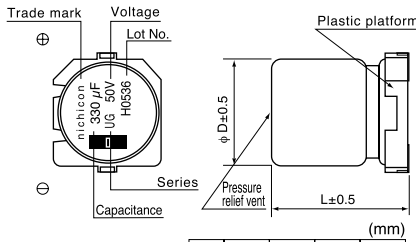
- Chip Type, higher capacitance in larger case sizes (φ12.5, φ16, φ18, φ20)
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine using carrier tape and tray.
- Adapted to the RoHS directive (2002/95/EC).



Specifications

Item	Performance Characteristics														
Category Temperature Range	-40 ~ +85°C														
Rated Voltage Range	6.3 ~ 450V														
Rated Capacitance Range	4.7 ~ 10000μF														
Capacitance Tolerance	±20% at 120Hz, 20°C														
Leakage Current	Rated voltage (V)			6.3 ~ 100						160 ~ 450					
	—			After 1 minutes' application of rated voltage, leakage current is not more than 0.03CV or 4 (μA), whichever is greater.											
tan δ	Rated voltage (V)			6.3	10	16	25	35	50	63	100	160 ~ 250	400 ~ 450	120Hz 20°C	
	tan δ (MAX)			0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.20	0.25		
For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.															
Stability at Low Temperature	Rated voltage (V)			6.3	10	16	25	35	50	63	100	160 ~ 250	400 ~ 450	120Hz	
	Impedance ratio Z _{-25°C} / Z _{+20°C}			5	4	3	2	2	2	2	2	3	6		
ZT / Z20 (MAX.)			Z _{-40°C} / Z _{+20°C}	12	10	8	5	4	3	3	3	6	10		
Endurance	After 2000 hours' application of rated voltage at 85°C, capacitors meet the characteristic requirements listed at right.														
	Capacitance change			Within ±20% of initial value											
tan δ			200% or less of initial specified value												
Leakage current			Initial specified value or less												
Shelf Life	After storing the capacitors under no load at 85°C for 1000 hours, and after performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they will meet the specified value for endurance characteristics listed above.														
Marking	Black print on the case top.														

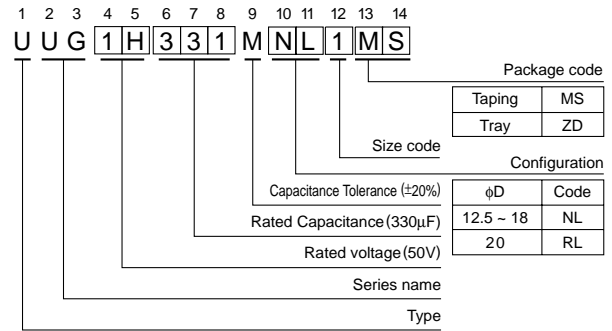
Chip Type



φD	12.5	16	18	20
A	4.0	4.5	5.0	5.0
B	13.6	17.1	19.1	21.1
C	16.0	19.5	21.5	23.5
E	8.0	10.5	11.5	13.5
H	2.5	3.75	3.75	3.75

The lead terminal structure : The same bent lead type (refer to p.60) that is currently used on 10mm diameter and smaller parts, is also available upon request. In this case of the bent lead type, [□] will be put at the 11th digit of type numbering system. Please ask for details.

Type numbering system (Example : 50V 330μF)



Dimensions

V (μF) Cap. Code	6.3		10		16		25		35		50	
	0J		1A		1C		1E		1V		1H	
220 221												12.5 × 13.5 450
330 331												12.5 × 13.5 520
470 471												● 16 × 16.5 740
1000 102												18 × 21.5 1150
2200 222	12.5 × 16	890	12.5 × 16	960	● 16 × 16.5	1150	Δ 18 × 16.5	1350	● 16 × 16.5	1000	18 × 21.5	1150
3300 332	● 16 × 16.5	1200	16 × 16.5	1300	Δ 18 × 16.5	1450	18 × 21.5	1700				
4700 472	16 × 16.5	1400	Δ 18 × 16.5	1500	18 × 21.5	1750						
6800 682	Δ 18 × 16.5	1650	18 × 21.5	1850								
10000 103	18 × 21.5	2000	20 × 21.5	2200								

V (μF) Cap. Code	63		100		160		200		250		400		450	
	1J		2A		2C		2D		2E		2G		2W	
4.7 4R7														
10 100														
22 220														
33 330														
47 470														
68 680														
101 101	12.5 × 13.5	370	12.5 × 16	440	● 16 × 16.5	500	Δ 18 × 16.5	590	18 × 21.5	590				
220 221	12.5 × 16	580	Δ 18 × 16.5	665										
330 331	● 16 × 16.5	680	18 × 21.5	825										
470 471	Δ 18 × 16.5	850												

Size φ12.5x21 is available for capacitors marked, "●". Size φ16x21.5L is available for capacitors marked, "Δ". Size φ20x16.5L is available for capacitors marks, "★".

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

Rated Ripple (mArms) at 85°C 120Hz

Frequency coefficient of rated ripple current

V	Cap.(μF)	Frequency				
		50Hz	120Hz	300Hz	1kHz	10kHz~
6.3 ~ 100	~ 68	0.75	1.00	1.35	1.57	2.00
	100 ~ 470	0.80	1.00	1.23	1.34	1.50
	1000 ~ 10000	0.85	1.00	1.10	1.13	1.15
160 ~ 450	4.7 ~ 100	0.80	1.00	1.25	1.40	1.60

- Taping specifications are given in page 24.
- Recommended land size, soldering by reflow are given in page 25, 26.
- Please refer to page 3 for the minimum order quantity.