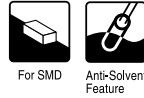
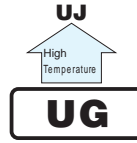


UG series Chip Type, Higher Capacitance Range



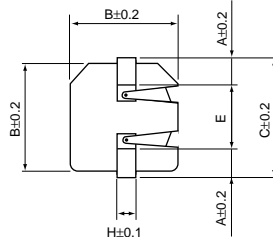
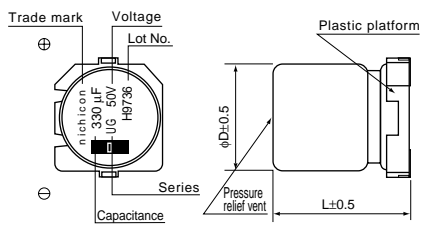
- Chip Type, higher capacitance in larger case sizes (φ12.5, φ16, φ18, φ20)
- Designed for surface mounting on high density PC board.
- Applicable to automatic mounting machine using carrier tape and tray.



Specifications

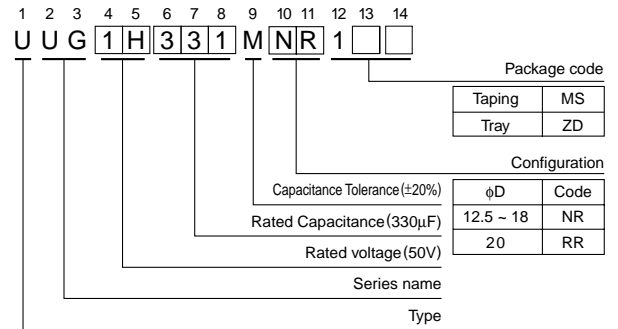
Item	Performance Characteristics													
Category Temperature Range	-40 ~ +85°C													
Rated Voltage Range	6.3 ~ 450V													
Rated Capacitance Range	4.7 ~ 10000μF													
Capacitance Tolerance	±20% at 120Hz, 20°C													
Leakage Current	Rated voltage(V)			6.3 ~ 100						160 ~ 450				
	—			After 1 minutes' application of rated voltage, leakage current is not more than 0.03CV or 4(μA), whichever is greater.						I = 0.04CV + 100 (μA) max. (1 minute's)				
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	3	6	
ZT/Z20(MAX.)			12	10	8	5	4	3	3	3	6	10		
Endurance	After 2000 hours' application of rated voltage at 85°C, capacitors meet the characteristics requirements listed at right.													
	Leakage current						Initial specified value or less							
	Capacitance change						Within ±20% of initial value							
Shelf Life	After leaving capacitors under no load at 85°C for 1000 hours, they meet the specified value for endurance characteristics listed above.													
	tan δ						200% or less of initial specified value							
	After leaving capacitors under no load at 85°C for 1000 hours, they 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	

Type numbering system (Example : 50V 330μF)



Dimensions

V (μF) Cap.	Code	D × L (mm)														
		6.3		10		16		25		35		50				
220	221	0J		1A		1C		1E		1V		1H				
330	331											12.5 × 13.5	450			
470	471							12.5 × 13.5	550	12.5 × 13.5	580	• 16 × 16.5	740			
1000	102			12.5 × 13.5	620	12.5 × 13.5	710	12.5 × 16	820	• 16 × 16.5	1000	18 × 21.5	1150			
2200	222	12.5 × 16	890	12.5 × 16	960	• 16 × 16.5	1150	Δ 18 × 16.5	1350	18 × 21.5	1550					
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		2000		2200											
V (μF) Cap.	Code	63		100		160		200		250		400		450		
		1J		2A		2C		2D		2E		2G		2W		
4.7	4R7									12.5 × 13.5	150	• 16 × 16.5	140	• 16 × 16.5	140	
10	100									12.5 × 13.5	240	Δ 18 × 16.5	280	16 × 21.5	275	
22	220						12.5 × 13.5	235	12.5 × 16	340	• 16 × 16.5	340	18 × 21.5	350	18 × 21.5	345
33	330						12.5 × 16	310	• 16 × 16.5	340	18 × 21.5	350	18 × 21.5	350	18 × 21.5	345
47	470					12.5 × 16	370	• 16 × 16.5	415	Δ 18 × 16.5	415	20 × 21.5	430			
68	680			12.5 × 13.5	350	• 16 × 16.5	500	Δ 18 × 16.5	505	★ 18 × 21.5	490					
100	101	12.5 × 13.5	370	12.5 × 16	440	Δ 18 × 16.5	590	18 × 21.5	590							
220	221	12.6 × 16	580	Δ 18 × 16.5	665											
330	331	• 16 × 16.5	680	18 × 21.5	825											
470	471	Δ	850											Case size	Rated Ripple	

Size φ12.5 × 21 is available for capacitors marked, "•". Size φ20 × 21.5L is available for capacitors marked, "Δ". Size φ20 × 16.5L is available for capacitors marked, "★".

Rated Ripple (mA rms) at 85°C 120Hz

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

Frequency coefficient of rated ripple current

V	Cap.(μF)	Frequency					
		~ 68	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 21.

Please refer to page 3 for the minimum order quantity.