

## UB Series 85°C



### Features

#### Standard capacitors

#### Applications

- ◆ Professional power supplies
- ◆ Frequency converters
- ◆ Uninterruptible power supplies
- ◆ Used for air conditioner, general-purpose inverter

#### Features

- ◆ High reliability
- ◆ Long useful life
- ◆ High ripple current capability
- ◆ Aluminum case designed explosion-proof vent
- ◆ RoHS-compatible

#### Construction

- ◆ Charge-discharge proof, polar
- ◆ Aluminum case with insulating sleeve
- ◆ Aluminum case designed explosion-proof vent
- ◆ Snap-in solder pins to hold component in place on PC-board

### Specifications

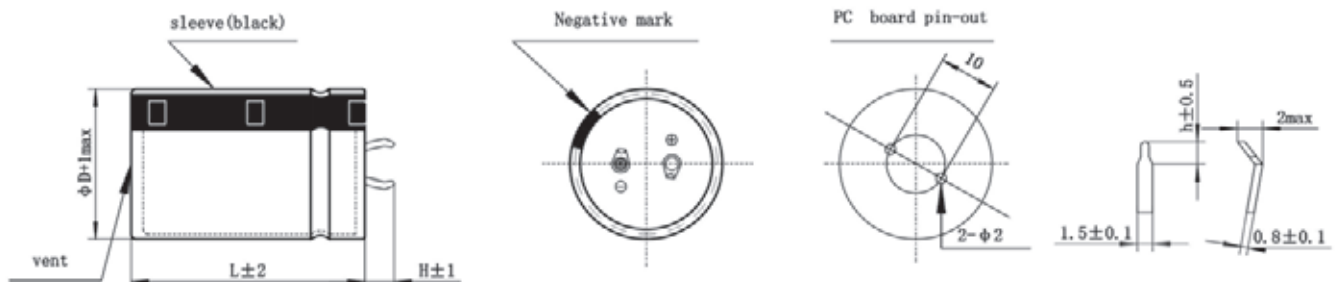
Item	Performance Characteristics			
Operating Temperature Range	-40 to +85°C		-25 to +85°C	
Rated voltage $V_R$	200 to 450 V DC		500V DC	
Surge voltage $V_S$	$V_R \leq 315V$ 1.15 $V_R$ $V_R > 315V$ 1.10 $V_R$			
Rated capacitance $C_R$	68 ~ 3300 $\mu F$		100~ 1500 $\mu F$	
Capacitance tolerance	$\pm 20\%$ (120Hz, +20°C)			
Leakage Current $I_{leak}$ (+20°C, max.)	$I \leq 3 \sqrt{CV}$ ( $\mu A$ ) After 5 minutes with rated working voltage applied			
Dissipation Factor (tan $\delta$ , at 20°C, 120Hz)	Less than the value under table(%)			
	W.V.(V)	160~420	450~550	
	D.F.(%) max	15	20	
Self-inductance ESL	approx. 20 nH			
Useful life 85°C; $V_R, I_{AC,R}$	>5000 h	Requirements:		
		$\Delta C/C$	$\leq \pm 20\%$ of initial value	
		tan $\delta$	$\leq 2$ times initial specified limit	
		$I_{leak}$	$\leq$ initial specified limit	
Voltage Endurance test 85°C; $V_R$	2000 h	Post test requirements:		
		$\Delta C/C$	$\leq \pm 10\%$ of initial value	
		tan $\delta$	$\leq 1.3$ times initial specified limit	
		$I_{leak}$	$\leq$ initial specified limit	
Shelf Life 85°C	1000 h	Post test requirements:		
		$\Delta C/C$	$\leq \pm 10\%$ of initial value	
		tan $\delta$	$\leq 1.3$ times initial specified limit	
		$I_{leak}$	$\leq$ initial specified limit	
Vibration Resistance test	To IEC 60068-2-6, test Fc:			
	Displacement amplitude 0.75 mm, frequency range 10 ... 55 Hz, acceleration max. 10 g, duration 3x2 h. Capacitor mounted by its body which is rigidly clamped to the work surface.			
Characteristics at low temperature	Max. impedance ratio at 120 Hz			
	$V_R(V)$	200-250 V	315-450 V	$\geq 500 V$
	$Z_{-25^\circ C} / Z_{20^\circ C}$	4	5	6
	$Z_{-40^\circ C} / Z_{20^\circ C}$	7	10	-
Sectional specification	IEC 60384-4 and JIS-C-5101			

### Multiplier for Ripple Current vs. Frequency

$V_R(V)/$ Frequency(Hz)	50(60)	120	300	1K	10K	50K-100K
$160 \leq V_R \leq 250$	0.81	1	1.17	1.32	1.45	1.5
$315 \leq V_R \leq 600$	0.77	1	1.16	1.30	1.41	1.43

## Dimensional drawings

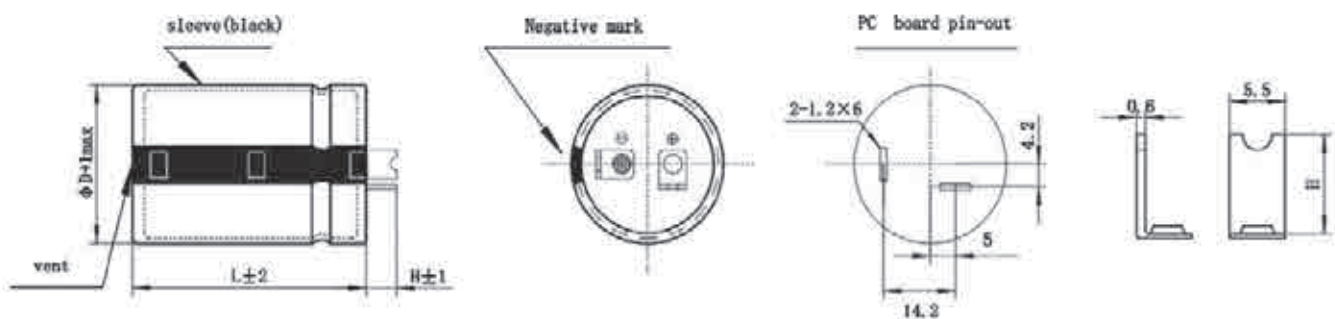
### 1. Standard 2 terminals



Standard snap-in terminals: length  $(6.0 \pm 1)$  mm  
 Also available with length of  $(4.0 \pm 1)$  mm

H	h
6	2.5
4	1.5

### 2. Vibration proof terminal T type



Standard terminals: Length  $4.5 \pm 1$  mm. Also available with length of  $5.5 \pm 1$  mm

## Packing

Capacitor diameter D(mm)	Length L(mm)	Terminal length H(mm)	Each carton packing Qty units(pcs.)	Box/carton units(pcs.)	Each box packing Qty units(pcs.)
20	all	/	720	6	120
22	< 55	/	600	6	100
22	$\geq 55$	/	400	4	100
25	< 65	/	500	5	100
25	$\geq 65$	/	400	4	100
30	$\leq 36$	< 6 (L=35、36)	400	8	50
30	$35 \leq L \leq 65$	$\geq 6$ (L=35、36)	300	6	50
30	> 65	/	200	4	50
35	$\leq 25$	/	400	8	50
35	$25 < L < 45$	/	300	6	50
35	$45 \leq L \leq 85$	/	200	4	50
35	> 85	/	100	2	50
40	35	< 6	200	5	40
40	35	$\geq 6$	160	4	40
40	$40 \leq L \leq 45$	/	160	4	40
40	$45 < L \leq 75$	/	120	3	40
40	> 75	/	80	2	40
45	$40 \leq L \leq 65$	/	140	4	35
45	$65 < L \leq 100$	/	70	2	35

## Packing of snap-in



## Case Size

WV (Vdc)	Cap (uF)	Size (mm)	Rated Ripple current (Arms/85°C /120Hz)	Typ. ESR 20°C 120Hz (mΩ)	MAX ESR 20°C 120Hz (mΩ)
200	120	22x25	1.10	980	1660
200	220	22x25	1.15	530	900
200	270	22x30	1.30	440	740
200	330	22x30	1.50	350	600
200	330	25x25	1.50	350	600
200	390	22x35	1.65	300	510
200	390	25x30	1.70	300	510
200	470	22x40	1.95	250	420
200	470	25x30	1.80	250	420
200	470	30x25	1.90	250	420
200	560	22x45	2.15	210	360
200	560	25x35	2.12	210	360
200	560	30x30	2.20	210	360
200	560	35x20	2.10	210	360
200	680	22x45	2.35	170	290
200	680	25x40	2.40	170	290
200	680	30x35	2.50	170	290
200	680	35x20	2.32	170	290
200	820	25x40	2.65	140	240
200	820	30x35	2.73	140	240
200	820	35x25	2.82	140	240
200	1000	25x40	2.72	120	200
200	1000	30x40	3.15	120	200
200	1000	35x30	3.00	120	200
200	1200	30x45	3.50	100	170
200	1200	35x35	3.50	100	170
200	1500	25x50	3.74	76	130
200	1500	30x45	3.93	76	130
200	1500	35x40	3.93	76	130
200	1800	35x40	4.10	65	110
200	2200	35x50	4.25	53	90
200	3300	35x60	4.40	35	60
250	100	22x25	0.72	1170	1990
250	180	22x25	1.00	650	1110
250	220	22x30	1.15	530	900
250	220	25x25	1.15	530	900
250	270	22x30	1.28	440	740
250	330	22x30	1.36	350	600
250	330	25x30	1.42	350	600

WV (Vdc)	Cap (uF)	Size (mm)	Rated Ripple current (Arms/85°C /120Hz)	Typ. ESR 20°C 120Hz (mΩ)	MAX ESR 20°C 120Hz (mΩ)
250	330	30x25	1.53	350	600
250	390	22x45	1.72	300	510
250	390	25x35	1.70	300	510
250	390	30x25	1.69	300	510
250	470	22x50	2.01	250	420
250	470	25x40	1.89	250	420
250	470	30x30	1.87	250	420
250	470	35x20	1.86	250	420
250	560	25x45	2.25	210	360
250	560	30x35	2.25	210	360
250	560	35x25	2.22	210	360
250	680	25x50	2.65	170	290
250	680	30x40	2.65	170	290
250	680	35x30	2.61	170	290
250	820	30x40	2.95	140	240
250	820	35x35	2.92	140	240
250	1000	30x40	3.18	120	200
250	1000	35x35	3.25	120	200
250	1200	30x45	3.58	100	170
250	1200	35x40	3.58	100	170
250	1500	30x50	3.94	76	130
250	1500	35x45	4.30	76	130
250	1800	35x45	4.46	65	110
250	2200	35x50	4.67	53	90
315	100	22x25	0.72	1170	1990
315	150	22x30	0.90	780	1330
315	150	25x25	0.90	780	1330
315	180	22x35	1.00	650	1110
315	180	25x30	1.02	650	1110
315	220	22x40	1.15	530	900
315	220	25x35	1.18	530	900
315	220	30x25	1.12	530	900
315	270	22x45	1.23	440	740
315	270	25x40	1.35	440	740
315	270	30x30	1.33	440	740
315	270	35x25	1.38	440	740
315	330	25x45	1.60	350	600
315	330	30x35	1.60	350	600
315	390	35x30	1.70	300	510

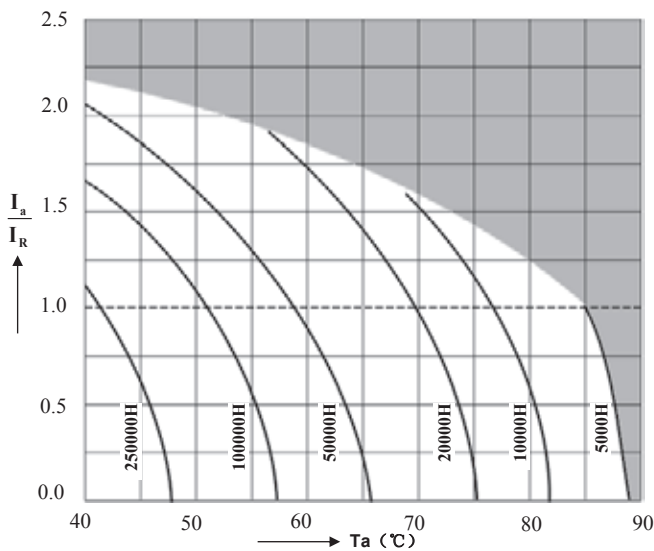
VV (Vdc)	Cap (uF)	Size (mm)	Rated Ripple current (Arms/85°C /120Hz)	Typ. ESR 20°C 120Hz (mΩ)	MAX ESR 20°C 120Hz (mΩ)
315	470	30x45	2.09	250	420
315	470	35x35	2.03	250	420
315	560	30x50	2.30	210	360
315	560	35x40	2.27	210	360
315	680	35x45	2.36	170	290
350	82	22x25	0.70	1430	2430
350	100	22x25	0.79	1170	1990
350	120	22x30	0.84	980	1660
350	120	25x25	0.84	980	1660
350	150	22x35	0.98	780	1330
350	150	25x30	1.01	780	1330
350	180	22x40	1.18	650	1110
350	180	25x35	1.15	650	1110
350	180	30x30	1.15	650	1110
350	220	22x45	1.25	530	900
350	220	25x35	1.23	530	900
350	220	30x30	1.28	530	900
350	220	35x25	1.33	530	900
350	270	25x45	1.46	440	740
350	270	30x35	1.46	440	740
350	330	25x50	1.68	350	600
350	330	35x30	1.65	350	600
350	390	30x40	1.77	300	510
350	390	35x35	1.83	300	510
350	470	30x45	2.11	250	420
350	470	35x40	2.16	250	420
350	560	35x45	2.38	210	360
350	680	35x50	2.66	170	290
350	820	35x60	2.87	140	240
400	68	22x20	0.58	1720	2930
400	82	22x25	0.72	1430	2430
400	100	22x30	0.86	1170	1990
400	100	25x25	0.86	1170	1990
400	120	22x30	0.87	980	1660
400	120	25x25	0.87	980	1660
400	150	22x30	1.03	780	1330
400	150	25x30	1.07	780	1330
400	150	30x25	1.07	780	1330
400	180	22x45	1.20	650	1110
400	180	25x35	1.19	650	1110
400	180	30x30	1.21	650	1110
400	180	35x25	1.26	650	1110
400	220	22x50	1.69	530	900
400	220	25x40	1.69	530	900
400	220	30x30	1.69	530	900
400	220	35x25	1.62	530	900
400	270	25x40	1.70	440	740
400	270	30x35	1.80	440	740
400	270	35x30	1.80	440	740
400	330	22x50	1.82	350	600
400	330	30x40	1.90	350	600
400	330	35x35	2.00	350	600
400	390	30x40	2.05	300	510
400	390	35x35	2.17	300	510
400	470	30x50	3.03	250	420
400	470	35x40	2.95	250	420
400	470	35x45	3.11	250	420
400	560	30x50	3.33	210	360
400	560	35x40	3.28	210	360
400	560	35x45	3.39	210	360

VV (Vdc)	Cap (uF)	Size (mm)	Rated Ripple current (Arms/85°C /120Hz)	Typ. ESR 20°C 120Hz (mΩ)	MAX ESR 20°C 120Hz (mΩ)
400	560	40x40	3.42	210	360
400	680	30x60	3.81	170	290
400	680	35x45	3.71	170	290
400	680	35x50	3.85	170	290
400	680	40x40	3.78	170	290
400	820	35x55	4.19	140	240
400	820	40x50	4.26	140	240
400	820	45x40	4.22	140	240
400	1000	35x55	4.89	120	200
400	1000	40x55	4.99	120	200
400	1000	45x45	4.95	120	200
400	1200	35x80	5.67	100	170
400	1200	40x60	5.63	100	170
400	1200	40x70	5.69	100	170
400	1200	45x50	5.59	100	170
400	1500	35x95	6.70	76	130
400	1500	40x75	6.40	76	130
400	1500	45x55	6.01	76	130
400	1800	40x85	7.30	65	110
400	1800	45x65	7.15	65	110
400	2200	45x80	8.42	53	90
450	68	22x30	0.63	2290	3900
450	82	22x35	0.73	1900	3230
450	100	22x35	0.89	1560	2650
450	100	25x30	0.92	1560	2650
450	120	22x40	1.20	1300	2210
450	120	25x35	1.23	1300	2210
450	120	30x30	1.15	1300	2210
450	150	22x40	1.26	1040	1770
450	150	25x35	1.32	1040	1770
450	150	30x30	1.32	1040	1770
450	150	35x20	1.26	1040	1770
450	180	25x45	1.55	860	1470
450	180	30x35	1.55	860	1470
450	180	35x25	1.41	860	1470
450	220	25x45	1.69	710	1210
450	220	30x40	1.82	710	1210
450	220	35x30	1.73	710	1210
450	270	30x40	1.90	580	980
450	270	35x35	1.90	580	980
450	330	30x40	2.03	470	800
450	330	30x45	2.09	470	800
450	330	35x35	2.07	470	800
450	330	35x40	2.15	470	800
450	390	25x55	2.55	400	680
450	390	30x45	2.59	400	680
450	390	35x35	2.55	400	680
450	390	35x40	2.63	400	680
450	390	35x45	2.70	400	680
450	470	30x50	3.25	330	560
450	470	35x40	3.21	330	560
450	470	40x40	3.31	330	560
450	560	35x50	3.63	280	470
450	560	35x55	3.69	280	470
450	560	35x60	3.73	280	470
450	560	40x45	3.70	280	470
450	680	35x50	3.93	230	390
450	680	35x60	3.99	230	390
450	680	40x50	3.99	230	390
450	680	40x60	4.05	230	390

WV (Vdc)	Cap (uF)	Size (mm)	Rated Ripple current (Arms/85°C /120Hz)	Typ. ESR 20°C 120Hz (mΩ)	MAX ESR 20°C 120Hz (mΩ)
450	680	45x40	3.96	230	390
450	820	35x60	4.44	190	320
450	820	40x55	4.53	190	320
450	820	40x60	4.58	190	320
450	820	45x45	4.49	190	320
450	1000	35x80	5.23	160	270
450	1000	40x65	5.19	160	270
450	1000	40x70	5.26	160	270
450	1000	45x50	5.15	160	270
450	1500	40x90	6.83	110	180
450	1500	45x70	6.78	110	180
450	1800	45x80	7.39	88	150
450	2200	45x95	8.61	71	120
500	100	30x25	0.93	1560	2650
500	120	30x30	1.05	1300	2210
500	120	35x25	1.07	1300	2210
500	150	30x35	1.23	1040	1770
500	180	30x40	1.46	860	1470
500	180	35x30	1.38	860	1470
500	220	30x45	1.66	710	1210
500	220	35x35	1.57	710	1210
500	270	30x50	1.85	580	980
500	270	35x40	1.77	580	980
500	330	35x40	1.79	470	800

WV (Vdc)	Cap (uF)	Size (mm)	Rated Ripple current (Arms/85°C /120Hz)	Typ. ESR 20°C 120Hz (mΩ)	MAX ESR 20°C 120Hz (mΩ)
500	330	35x45	1.88	470	800
500	330	40x40	1.88	470	800
500	390	35x45	2.12	400	680
500	390	35x50	2.36	400	680
500	390	40x45	2.41	400	680
500	470	35x50	2.42	330	560
500	470	35x55	2.56	330	560
500	470	40x50	2.60	330	560
500	470	45x40	2.58	330	560
500	560	35x55	2.56	280	470
500	560	35x70	2.82	280	470
500	560	40x55	2.73	280	470
500	560	45x45	2.70	280	470
500	680	35x65	2.70	230	390
500	680	35x70	2.82	230	390
500	680	40x65	2.89	230	390
500	680	45x50	2.82	230	390
500	820	35x95	3.30	190	320
500	820	40x65	3.00	190	320
500	820	45x60	3.20	190	320
500	1000	40x85	3.70	160	270
500	1000	45x70	3.65	160	270
500	1200	45x80	4.15	130	220
500	1500	45x100	4.95	110	180

## Useful life



depending on ambient temperature  $T_a$  versus under ripple current operating conditions  $V_R \geq 160V$