

# LBA

## +85°C Snap-Mount Aluminum Electrolytic Capacitors



For all general purpose high CV applications

### FEATURES

- High Ripple Currents Ratings
- Rugged Design
- Large Case Size Selection
- Capacitance Range: 47μF to 47,000μF
- Voltage range: 10 WVDC to 500 WVDC
- Solvent Tolerant End Seal Standard

### SPECIFICATIONS

Capacitance Tolerance		±20% at 120Hz, 20°C														
Operating Temperature Range		-40°C to +85°C										-25°C to +85°C				
Dissipation Factor 120Hz, 20°C	WVDC	10	16	25	35	50	63	80	100	160	200	250	350	400	450	500
		tan δ	.5	.4	.3	.25	.2	.15	.15	.15	.1	.1	*.1	.15	.15	.15
		*.15 for D=35 and 40mm														
Impedance Ratio 120Hz	WVDC	10	16	25	35	50	63	80	100	160	200	250	350	400	450	500
	-25°C/20°C	4	4	3	3	3	3	3	6	4	4	4	8	8	8	8
	-40°C/20°C	15	15	10	8	6	6	6	6	12	12	12	-	-	-	-
Leakage Current	WVDC	≤500 WVDC														
	Time	5 minutes														
		.02CV or 2000μA whichever is smaller														
Load Life	2,000 hours at 85°C with rated voltage and ripple current															
		Capacitance change Dissipation factor Leakage current								≤ 20% of initial measured value ≤200% of initial specified value 100% < Initial specified value						
Shelf life	500 hours at +85°C with no voltage applied. Units will meet load life specifications															
Ripple Current Multipliers	Frequency (Hz)															
	WVDC	60	120	300	1K	10K	100K	Temperature (°C)								
								+85°C	+70°C	+60°C	+45°C					
	6.3-50	.95	1.0	1.07	1.13	1.19	1.2	1.0	1.15	1.3	1.48					
	63-100	.92	1.0	1.17	1.32	1.45	1.5	1.0	1.15	1.3	1.48					
160-250	.81	1.0	1.16	1.31	1.41	1.43	1.0	1.15	1.3	1.48						
350-500	.77	1.0	1.03	1.05	1.08	1.08	1.0	1.15	1.3	1.48						

Aluminum Electrolytic

### SPECIAL ORDER OPTIONS

(See Page 33 to 37)

- Special tolerances: ±10% (K), -10% + 30% (Q)
- Epoxy end seal



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## PHYSICAL DIMENSIONS

WVDC (SV) μF	10 (13)	16 (20)	25 (32)	35 (44)	50 (63)	63 (79)	80 (100)	100 (125)	160 (200)	200 (250)	250 (300)	350 (400)	400 (450)	450 (500)	500 (550)
47														22x25	
68														25x25	
100												22x30 25x25	22x30	22x35	22x40 25x30 30x25
150											25x20	25x30	22x40 25x30	25x40	22x50 25x40 30x35 35x30
220									22x20	22x25 25x20	22x30 25x25 30x20	30x30	22x50 25x40	30x40	25x50 30x45 35x35
330									22x25	22x30 25x25	22x40 25x30 30x25	30x40 35x30	30x45	35x40	35x45
470									25x25	22x40 25x30 25x35 30x25	22x50 25x40	30x30 35x40	35x45 40x35	35x50	
560										25x35	30x35				
680								22x25	30x25	25x40 35x25	30x35 30x40 35x30				
820										30x40	30x45 35x35				
1000							22x25	22x35 25x25	30x30 30x35 35x25	30x45 35x30 35x35	30x45 30x50 35x40				
1200									30x35 35x30	30x45 30x50 35x35 35x40	35x45 35x50				
1500						22x25	25x25	25x35	35x35	35x40 35x45	35x50				
1800										30x50 35x40	35x45 35x50				
2200			25x20	22x25	25x25	22x40	25x45	35x50	35x50	30x35 40x40					
3300			22x25	22x30 25x25	22x40 25x35	25x45 35x30	22x35	35x45		35x35 40x30					
4700		22x25	22x30 25x25	22x40 25x35 30x25	25x45 25x45 35x25	22x35	35x30	40x35							
5600			22x30												
6800		22x35	22x35 25x25	22x40 25x30 30x25	25x45 35x30	35x35	35x45								
8200	22x25	22x30	22x35	25x35	30x40										
10000	22x30	22x45	25x40	35x35	35x45										
15000	25x25	22x40	25x45	30x40	35x35										
22000	30x25	22x50	35x35	35x45											
33000	30x40	35x50													
47000	30x50	35x40													

Convert to inches, divide by 25.4.

DxL(mm)

## STANDARD PART LISTING

Capacitance (µF)	VVDC	ic PART NUMBER	Maximum ESR mΩ 120Hz, +20°C	Maximum RMS Ripple Current (A) 120Hz, +85°C	Dimensions DxL (mm)
47	450	476LBA450M2BC	5291.055	0.46	22x25
68	450	686LBA450M2CC	3657.053	0.6	25x25
100	350	107LBA350M2BD	3315.728	0.65	22x30
100	350	107LBA350M2CC	3315.728	0.63	25x25
100	400	107LBA400M2BD	3315.728	0.68	22x30
100	450	107LBA450M2BE	3315.728	0.77	22x35
100	500	107LBA500M2BF	2486.796	0.85	22x40
100	500	107LBA500M2CD	2486.796	0.81	25x30
100	500	107LBA500M2DC	2486.796	0.84	30x25
150	250	157LBA250M2CA	1105.243	0.85	25x20
150	350	157LBA350M2CD	1657.864	0.97	25x30
150	400	157LBA400M2BF	1657.864	0.94	22x40
150	400	157LBA400M2CD	1657.864	0.89	25x30
150	450	157LBA450M2CF	1657.864	1.08	25x40
150	500	157LBA500M2BH	1657.864	1.15	22x50
150	500	157LBA500M2CF	1657.864	1.12	25x40
150	500	157LBA500M2DE	1657.864	1.18	30x35
150	500	157LBA500M2ED	1657.864	1.22	35x30
220	160	227LBA160M2BA	753.575	1	22x20
220	200	227LBA200M2BC	753.575	1.14	22x25
220	200	227LBA200M2CA	753.575	1.1	25x20
220	250	227LBA250M2BD	753.575	1.2	22x30
220	250	227LBA250M2CC	753.575	1.15	25x25
220	250	227LBA250M2DA	753.575	1.1	30x20
220	350	227LBA350M2DD	1130.362	1.29	30x30
220	400	227LBA400M2BH	1130.362	1.26	22x50
220	400	227LBA400M2CF	1130.362	1.22	25x40
220	450	227LBA450M2DF	1130.362	1.44	30x40
220	500	227LBA500M2CH	1130.362	1.5	25x50
220	500	227LBA500M2DG	1130.362	1.59	30x45
220	500	227LBA500M2EE	1130.362	1.57	35x35
330	160	337LBA160M2BC	502.383	1.2	22x25
330	200	337LBA200M2BD	502.383	1.48	22x30
330	200	337LBA200M2CC	502.383	1.48	25x25
330	250	337LBA250M2BF	502.383	1.72	22x40
330	250	337LBA250M2CD	502.383	1.67	25x30
330	250	337LBA250M2DC	502.383	1.61	30x25
330	350	337LBA350M2DF	753.575	1.72	30x40

Capacitance (µF)	VVDC	ic PART NUMBER	Maximum ESR mΩ 120Hz, +20°C	Maximum RMS Ripple Current (A) 120Hz, +85°C	Dimensions DxL (mm)
330	350	337LBA350M2ED	753.575	1.88	35x30
330	400	337LBA400M2DG	753.575	1.74	30x45
330	450	337LBA450M2EF	753.575	1.92	35x40
330	500	337LBA500M2EG	753.575	2.13	35x45
470	160	477LBA160M2CC	352.737	1.52	25x25
470	200	477LBA200M2BF	352.737	2.02	22x40
470	200	477LBA200M2CD	352.737	1.91	25x30
470	200	477LBA200M2CE	352.737	1.8	25x35
470	200	477LBA200M2DC	352.737	1.97	30x25
470	250	477LBA250M2BH	352.737	2.08	22x50
470	250	477LBA250M2CF	352.737	2.03	25x40
470	250	477LBA250M2DD	352.737	1.97	30x30
470	350	477LBA350M2EF	529.106	2.3	35x40
470	400	477LBA400M2EG	529.106	2.23	35x45
470	400	477LBA400M2FE	529.106	2.16	40x35
470	450	477LBA450M2EH	529.106	2.5	35x50
560	200	567LBA200M2CE	296.047	2.22	25x35
560	250	567LBA250M2DE	296.047	2.3	30x35
680	100	687LBA100M2BC	365.705	1.85	22x25
680	160	687LBA160M2DC	243.804	2.1	30x25
680	200	687LBA200M2CF	243.804	2.43	25x40
680	200	687LBA200M2EC	365.705	2.3	35x25
680	250	687LBA250M2DE	243.804	2.4	30x35
680	250	687LBA250M2DF	243.804	2.55	30x40
680	250	687LBA250M2ED	365.705	2.48	35x30
820	200	827LBA200M2DF	202.179	2.85	30x40
820	250	827LBA250M2DG	202.179	2.9	30x45
820	250	827LBA250M2EE	303.268	2.83	35x35
1000	80	108LBA080M2BC	248.680	1.65	22x25
1000	100	108LBA100M2BE	248.680	2.08	22x35
1000	100	108LBA100M2CC	248.680	2.03	25x25
1000	160	108LBA160M2DD	165.786	2.8	30x30
1000	160	108LBA160M2DE	165.786	2.77	30x35
1000	160	108LBA160M2EC	248.680	2.8	35x25
1000	200	108LBA200M2DG	165.786	3.42	30x45
1000	200	108LBA200M2ED	248.680	3.42	35x30
1000	200	108LBA200M2EE	248.680	3.35	35x35
1000	250	108LBA250M2DG	165.786	3	30x45

## STANDARD PART LISTING

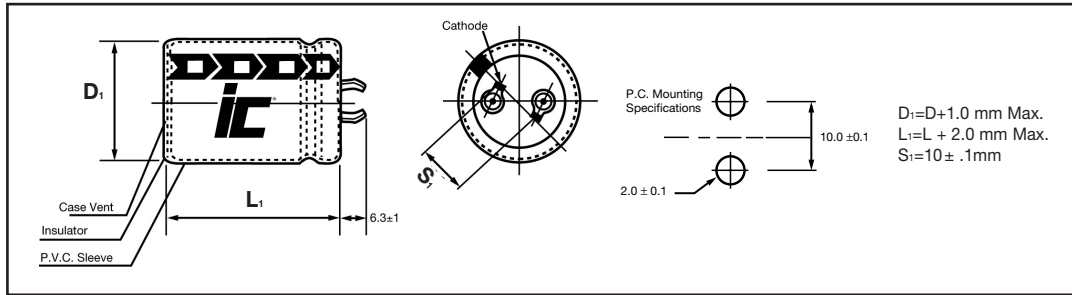
Capacitance (μF)	WVDC	IC <sup>®</sup> PART NUMBER	Maximum ESR mΩ 120Hz,+20°C	Maximum RMS Ripple Current (A) 120Hz,+85°C	Dimensions DxL (mm)
1000	250	108LBA250M2DH	165.786	3.65	30x50
1000	250	108LBA250M2EF	248.680	3.58	35x40
1200	160	128LBA160M2DE	138.155	3.2	30x35
1200	160	128LBA160M2ED	207.233	3.2	35x30
1200	200	128LBA200M2DG	138.155	3.4	30x45
1200	200	128LBA200M2DH	138.155	3.4	30x50
1200	200	128LBA200M2EE	207.233	3.54	35x35
1200	200	128LBA200M2EF	207.233	3.47	35x40
1200	250	128LBA250M2EG	207.233	3.5	35x45
1500	63	158LBA063M2BC	165.786	2	22x25
1500	80	158LBA080M2CC	165.786	2.15	25x25
1500	100	158LBA100M2CE	165.786	2.76	25x35
1500	160	158LBA160M2EE	165.786	3.48	35x35
1500	200	158LBA200M2EF	165.786	3.8	35x40
1500	200	158LBA200M2EG	165.786	4.1	35x45
1500	250	158LBA250M2EH	165.786	4	35x50
1800	160	188LBA160M2DH	92.104	4.1	30x50
1800	160	188LBA160M2EF	138.155	4.1	35x40
1800	200	188LBA200M2EG	138.155	4.2	35x45
1800	200	188LBA200M2EH	138.155	4.38	35x50
2200	35	228LBA035M3CA	188.394	1.7	25x20
2200	50	228LBA050M2BC	150.715	2	22x25
2200	63	228LBA063M2CC	113.036	2.3	25x25
2200	80	228LBA080M2BF	113.036	2.71	22x40
2200	80	228LBA080M2CE	113.036	2.66	25x35
2200	100	228LBA100M2CG	113.036	3.41	25x45
2200	100	228LBA100M2DE	113.036	3.35	30x35
2200	100	228LBA100M2ED	113.036	3.28	35x30
2200	160	228LBA160M2EH	113.036	4.97	35x50
2200	160	228LBA160M4FF	113.036	4.57	40x40
2200	200	228LBA200M2EH	113.036	4.7	35x50
3300	35	338LBA035M2BC	125.596	2.2	22x25
3300	50	338LBA050M2BD	100.477	2.4	22x30
3300	50	338LBA050M2CC	100.477	2.35	25x25
3300	63	338LBA063M2CE	75.357	2.81	25x35
3300	80	338LBA080M2CG	75.357	3.41	25x45
3300	80	338LBA080M2ED	75.357	3.28	35x30
3300	100	338LBA100M2EE	75.357	3.58	35x35

Capacitance (μF)	WVDC	IC <sup>®</sup> PART NUMBER	Maximum ESR mΩ 120Hz,+20°C	Maximum RMS Ripple Current (A) 120Hz,+85°C	Dimensions DxL (mm)
3300	100	338LBA100M2FD	75.357	3.5	40x30
4700	25	478LBA025M2BC	105.821	2.2	22x25
4700	35	478LBA035M2BD	88.184	2.4	22x30
4700	35	478LBA035M2CC	88.184	2.35	25x25
4700	50	478LBA050M2BF	70.547	2.91	22x40
4700	50	478LBA050M2CE	70.547	2.86	25x35
4700	50	478LBA050M2DC	70.547	2.8	30x25
4700	63	478LBA063M2CE	52.911	3.59	25x35
4700	63	478LBA063M2CG	52.911	3.25	25x45
4700	63	478LBA063M2DD	52.911	3.2	30x30
4700	63	478LBA063M2EC	52.911	3.13	35x25
4700	80	478LBA080M2BE	52.911	3.5	22x35
4700	80	478LBA080M2ED	52.911	3.3	35x30
4700	80	478LBA080M2EE	52.911	3.73	35x35
4700	100	478LBA100M2EG	52.911	4.3	35x45
4700	100	478LBA100M2FE	52.911	4.22	40x35
5600	25	568LBA025M2BD	88.814	2.4	22x30
6800	25	688LBA025M2BE	73.141	2.6	22x35
6800	25	688LBA025M2CC	73.141	2.55	25x25
6800	35	688LBA035M2BE	60.951	2.9	22x35
6800	35	688LBA035M2BF	60.951	3.06	22x40
6800	35	688LBA035M2CD	60.951	3.01	25x30
6800	35	688LBA035M2DC	60.951	2.95	30x25
6800	50	688LBA050M2CG	60.951	3.86	25x45
6800	50	688LBA050M2ED	60.951	3.73	35x30
6800	63	688LBA063M2EE	36.571	4.15	35x35
6800	80	688LBA080M2EG	36.571	4.8	35x45
8200	16	828LBA016M2BC	80.871	2.37	22x25
8200	25	828LBA025M2BE	60.654	3.31	22x35
8200	35	828LBA035M2CE	50.545	3.45	25x35
8200	50	828LBA050M2DF	40.436	4.35	30x40
10000	16	109LBA016M2BD	66.315	2.84	22x30
10000	16	109LBA016M2CC	66.315	2.76	25x25
10000	25	109LBA025M2BG	49.736	3.4	22x45
10000	25	109LBA025M2CE	49.736	3.32	25x35
10000	25	109LBA025M2DC	49.736	3.31	30x25
10000	35	109LBA035M2CF	41.447	4.06	25x40
10000	35	109LBA035M2DD	41.447	4	30x30

## STANDARD PART LISTING

Capacitance (μF)	WVDC	ic PART NUMBER	Maximum ESR mΩ 120Hz, +20°C	Maximum RMS Ripple Current (A) 120Hz, +85°C	Dimensions DxL (mm)
10000	35	109LBA035M2EC	41.447	3.93	35x25
10000	50	109LBA050M2EE	33.157	4.7	35x35
10000	63	109LBA063M2EG	24.868	5.2	35x45
15000	10	159LBA010M2CC	55.262	2.76	25x25
15000	16	159LBA016M2BF	44.210	3.94	22x40
15000	16	159LBA016M2DC	44.210	3.51	30x25
15000	25	159LBA025M2CG	33.157	4.5	25x45
15000	25	159LBA025M2ED	33.157	4.39	35x30
15000	35	159LBA035M2DF	27.631	5.07	30x40
15000	35	159LBA035M2EE	27.631	5	35x35
15000	50	159LBA050M2EG	22.105	5.9	35x45
22000	10	229LBA010M2DC	37.679	3.49	30x25

Capacitance (μF)	WVDC	ic PART NUMBER	Maximum ESR mΩ 120Hz, +20°C	Maximum RMS Ripple Current (A) 120Hz, +85°C	Dimensions DxL (mm)
22000	16	229LBA016M2BH	30.143	5.23	22x50
22000	16	229LBA016M2DD	30.143	4.45	30x30
22000	16	229LBA016M2EC	30.143	4.13	35x25
22000	25	229LBA025M2EE	22.607	5.73	35x35
22000	25	229LBA025M2FD	22.607	5.65	40x30
22000	35	229LBA035M2EG	18.839	6.25	35x45
33000	16	339LBA016M2DF	20.095	5.8	30x40
33000	16	339LBA016M2ED	20.095	5.15	35x30
33000	25	339LBA025M2EH	15.071	7.2	35x50
47000	16	479LBA016M2DH	14.109	6.78	30x50
47000	16	479LBA016M2EF	14.109	6.71	35x40



CASE DIMENSIONS CODE LAST TWO LETTERS OF PART NUMBERS (DxL)mm	Letter Group							
	A	B	C	D	E	F	G	H
	20	22	25	30	35	40	45	50