

## 系列:LHB

### 产品特点

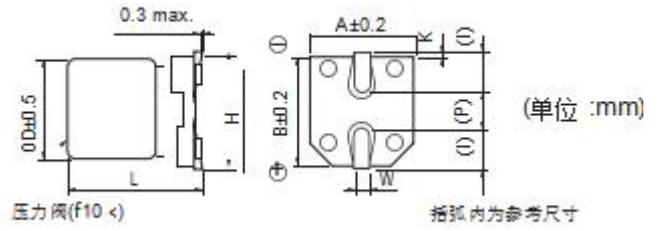
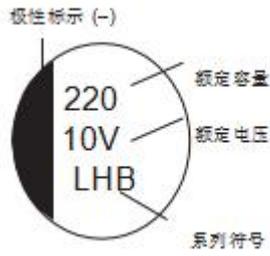
- 高温无铅回流焊产品
- 保证时间：105℃ 2000 小时
- 可满足耐振要求
- 符合 RoHS 标准

项目	Items	特性 Characteristics												
工作温度范围	Operating Temperature Range	-40℃ ~ +105℃												
额定电压范围	Rated Voltage Range	4V ~ 100V												
标称容量范围	Nominal Capacitance Range	1 ~ 8200μF												
标称容量允许偏差	Nominal Capacitance Tolerance	±20% (20℃, 120Hz)												
漏电流	Leakage Current	$I \leq 0.01C_R U_R$ or 3(μA), 取较大者 (2 分钟) $C_R$ : 标称容量 (μF) $U_R$ : 额定电压 (V) $I \leq 0.01C_R U_R$ or 3(μA) Whichever is greater (at 20℃, After 2 minutes) $C_R$ : Nominal Capacitance (μF) $U_R$ : Rated voltages (V)												
损耗角正切 (tgδ)	Dissipation Factor (Max)	20℃, 120Hz	$U_R$ (V)	4	6.3	10	16	25	35	50	63	80	100	
			tgδ	0.45	0.40	0.35	0.28	0.18	0.16	0.14	0.12	0.12	0.12	
			容量大于 1000uF 者, 每增加 1000uF, 其损耗角正切值增加 0.02 When nominal capacitance exceeds 1000uF, add 0.02 to the value above for each 1000uF increase											
耐久性	Load Life	+105℃施加额定电压 2000 小时后, 电容器应满足以下要求: After 2000 hours' application of rated voltage at 105℃, the capacitor shall meet the following requirement:												
		电容量变化率	D ≥ 8mm: ±20%初始值以内, D ≤ 6.3mm: ±25%初始值以内 Within D ≥ 8mm: ±20% of the initial value, Within D ≤ 6.3mm: ±25% of the initial value											
		损耗角正切	D ≥ 8mm: 200%初始规定值, D ≤ 6.3mm: 300%初始规定值 Not more than D ≥ 8mm: 200% of the initial specified value Not more than D ≤ 6.3mm: 300% of the initial specified value											
		漏电流	≤ 初始规定值 Not more than the initial specified value											
高温贮存	Shelf Life	+105℃贮存 1000 小时后, 电容器应满足以上耐久性要求 After storage for 1000 hours at +105℃, the capacitors shall meet the requirement of load life above												
低温特性	Low Temperature Stability	阻抗比	Impedance Ratio (120Hz)	$U_R$ (V)	4	6.3	10	16	25	35	50	63	80	100
				Z(-25℃)/Z(+20℃)	5	5	4	3	2	2	2	2	2	3
				Z(-55℃)/Z(+20℃)	12	12	8	6	4	4	4	4	4	4
耐焊接热	Resistance to Soldering Heat	在 250℃的条件下, 电容器在热板上保持 30 秒, 然后从热板上取出电容器, 让其在室温下恢复, 电容器应满足以下要求: The capacitors shall be kept on the hot plate maintained at 250℃ for 30 seconds. After removing from the hot plate and restored at room temperature, they meet the following requirement.												
		电容量变化率	±10%初始值以内 Within ±10% of the initial value											
		损耗角正切 (tgδ)	≤ 初始规定值 Not more than the initial specified value											
		漏电流	≤ 初始规定值 Not more than the initial specified value											
AEC-Q200		符合 AEC-Q200												

## 标示

## 外观尺寸

例: 10V.DC 220uF LHB系列



φ D	L	A, B	H.	I	W	P	K
4	5.4±0.3	4.3	5.5	1.8	0.5~0.8	1.0	0.35 <sup>+0.15</sup> -0.20
5	5.4±0.3	5.3	6.5	2.1	0.5~0.8	1.3	
6.3	5.4±0.3	6.6	7.8	2.4	0.5~0.8	2.2	
6.3	7.7±0.3	6.6	7.8	2.4	0.5~0.8	2.2	
8	6.2±0.3	6.6	9.5	3.4	0.5~0.8	2.2	
8	10.5±0.5	8.3	10	3.4	0.8~1.1	3.1	0.70±0.20
8	12.5±0.5	8.3	10	3.4	0.8~1.1	3.1	0.70±0.20
10	7.7±0.3	10.3	12	3.5	0.7~1.3	4.5	0.70±0.20
10	10.5±0.5	10.3	12	3.5	0.7~1.3	4.5	0.70±0.20
10	12.5±0.5	10.3	12	3.5	0.8~1.1	4.5	0.70±0.20
12.5	13.5±0.5	13.5	15	4.7	1.1~1.4	4.4	0.70±0.20
12.5	16.5±0.5	13.5	15	4.7	1.1~1.4	4.4	0.70±0.20
16	16.5±0.5	17	19	5.5	1.1~1.4	6.4	0.70±0.20
16	21.5±0.5	17	19	5.5	1.1~1.4	6.4	0.70±0.20
18	16.5±0.5	19	21	6.7	1.1~1.4	6.4	0.70±0.20
18	21.5±0.5	19	21	6.7	1.1~1.4	6.4	0.70±0.20

特性一览表 1

额定电压 (V.DC)	静电容量 (±20%) (uF)	产品尺寸(mm)		电气特性		料号	最小包装 数量 (PCS)
		φ D	L	额定纹波电流 (120Hz) (+105℃)	tan δ (120HZ) (+20℃)		
4	22	4	5.4	22	0.40	LHB0Q220MB05400LP0	2000
	33	5	5.4	30	0.40	LHB0Q330MC05400LP0	1000
	47	5	5.4	36	0.40	LHB0Q470MC05400LP0	1000
	100	6.3	5.4	60	0.40	LHB0Q101ME05400LP0	1000
	150	6.3	5.4	86	0.40	LHB0Q151ME05400LP0	1000
	220	6.3	7.7	102	0.40	LHB0Q221ME07700LP0	1000
	330	6.3	7.7	105	0.40	LHB0Q331ME07700LP0	1000
	470	8	10.5	210	0.40	LHB0Q471MF10500LP0	500
	680	8	10.5	210	0.40	LHB0Q681MF10500LP0	500
6.3	22	4	5.4	22	0.30	LHB0J220MB05400LP0	2000
	33	5	5.4	30	0.30	LHB0J330MC05400LP0	1000
	47	5	5.4	36	0.30	LHB0J470MC05400LP0	1000
	100	6.3	5.4	60	0.30	LHB0J101ME05400LP0	1000
	150	6.3	7.7	86	0.30	LHB0J151ME07700LP0	1000
	220	6.3	7.7	102	0.30	LHB0J221ME07700LP0	1000
	220	8	6.2	120	0.30	LHB0J221MF06200LP0	1000
	330	8	6.2	190	0.30	LHB0J331MG06200LP0	1000
	330	8	10.5	290	0.30	LHB0J331MF10500LP0	500

特性一览表 2

额定电压 (V.DC)	静电容量 (±20%) (uF)	产品尺寸(mm)		电气特性		料号	最小包装 数量 (PCS)	
		φ D	L	额定纹波电流 (120Hz) (+105℃)	tan δ (120HZ) (+20℃)			
6.3	470	8	10.5	340	0.30	LHB0J471MF10500LP0	500	
	680	8	10.5	340	0.30	LHB0J681MF10500LP0	500	
	1000	10	10.5	495	0.30	LHB0J102MG10500LP0	500	
	2200	12.5	13.5	680	0.30	LHB0J222MI13500LP0	200	
	3300	12.5	16.5	850	0.30	LHB0J332MI16500LP0	200	
	4700	16	16.5	1000	0.30	LHB0J472MJ16500LP0	125	
	6800	18	16.5	1290	0.30	LHB0J682MK16500LP0	125	
	8200	18	21.5	1450	0.30	LHB0J822MK21500LP0	125	
10	22	5	5.4	27	0.24	LHB1A220MC05400LP0	1000	
	33	5	5.4	35	0.24	LHB1A330MC05400LP0	1000	
	47	6.3	5.4	46	0.24	LHB1A470ME05400LP0	1000	
	100	6.3	5.4	60	0.24	LHB1A101ME05400LP0	1000	
	100	8	6.2	90	0.24	LHB1A101MF06200LP0	1000	
	150	6.3	7.7	86	0.24	LHB1A151ME07700LP0	1000	
	220	6.3	7.7	105	0.24	LHB1A221ME07700LP0	1000	
	220	8	6.2	105	0.24	LHB1A221MF06200LP0	1000	
	330	8	10.5	290	0.24	LHB1A331MF10500LP0	500	
	470	8	10.5	320	0.24	LHB1A471MF10500LP0	500	
	470	10	7.7	320	0.24	LHB1A471MG07700LP0	500	
	680	10	10.5	392	0.24	LHB1A681MG10500LP0	500	
	1000	10	10.5	450	0.24	LHB1A102MG10500LP0	500	
	2200	12.5	13.5	680	0.24	LHB 1A222MI13500LP0	200	
	3300	16	16.5	950	0.24	LHB1A332MJ16500LP0	125	
	4700	16	16.5	1000	0.24	LHB1A472MJ16500LP0	125	
	6800	18	16.5	1290	0.24	LHB1A682MK16500LP0	125	
	8200	18	21.5	1450	0.24	LHB1A822MK21500LP0	125	
16	10	4	5.4	18	0.20	LHB1C100MB05400LP0	2000	
	22	5	5.4	30	0.20	LHB1C220MC05400LP0	1000	
	33	6.3	5.4	40	0.20	LHB1C330ME05400LP0	1000	
	47	6.3	5.4	50	0.20	LHB1C470ME05400LP0	1000	
	100	6.3	5.4	60	0.20	LHB1C101ME05400LP0	1000	
	100	8	6.2	125	0.20	LHB1C101MF06200LP0	1000	
	150	6.3	7.7	95	0.20	LHB1C151ME07700LP0	1000	
	220	6.3	7.7	105	0.20	LHB1C221MF10500LP0	1000	
	330	8	10.5	290	0.20	LHB1C331MF10500LP0	500	
	330	10	7.7	290	0.20	LHB1C331MG07700LP0	500	
	470	8	10.5	320	0.20	LHB1C471MF10500LP0	500	
	680	10	10.5	470	0.20	LHB1C681MG10500LP0	500	
	1000	10	10.5	550	0.20	LHB1C102MG10500LP0	500	
	2200	16	16.5	900	0.20	LHB1C222MJ16500LP0	500	
	3300	16	16.5	950	0.20	LHB1C332MJ16500LP0	500	
	4700	18	16.5	1225	0.20	LHB1C472MK16500LP0	500	
	25	10	4	5.4	13	0.16	LHB1E100MB05400LP0	2000
		22	5	5.4	23	0.16	LHB1E220MC05400LP0	1000
33		6.3	5.4	38	0.16	LHB1E330ME05400LP0	1000	
47		6.3	5.4	48	0.16	LHB1E470ME05400LP0	1000	
47		8	6.2	79	0.16	LHB1E470MF06500LP0	1000	

特性一览表 3

额定电压 (V. DC)	静电容量 (±20%) (uF)	产品尺寸(mm)		电气特性		料号	最小包装 数量 (PCS)
		φD	L	额定纹波电流 (120Hz) (+105°C)	tan δ (120HZ) (+20°C)		
25	100	6.3	7.7	100	0.16	LHB1E101ME07700LP0	1000
	100	8	6.2	145	0.16	LHB1E101MF06200LP0	1000
	150	6.3	7.7	91	0.16	LHB1E151ME07700LP0	1000
	220	8	10.5	240	0.16	LHB1E221MF10500LP0	500
	220	10	7.7	240	0.16	LHB1E221MG07700LP0	500
	330	8	10.5	320	0.16	LHB1E331MF10500LP0	500
	470	10	10.5	450	0.16	LHB1E471MG10500LP0	500
	680	10	10.5	490	0.16	LHB1E681MG10500LP0	500
	1000	12.5	16.5	550	0.16	LHB1E102MI16500LP0	200
	2200	16	16.5	900	0.16	LHB1E222MJ16500LP0	125
	3300	18	16.5	1150	0.16	LHB1E332MK16500LP0	125
	4700	18	21.5	1300	0.16	LHB1E472MK21500LP0	125
35	4.7	4	5.4	16	0.14	LHB1V4R7MB05400LP0	2000
	10	5	5.4	27	0.14	LHB1V100MC05400LP0	1000
	22	6.3	5.4	44	0.14	LHB1V220ME05400LP0	1000
	33	6.3	7.7	59	0.14	LHB1V330ME07700LP0	1000
	33	8	6.2	76	0.14	LHB1V330MF06500LP0	1000
	47	6.3	7.7	80	0.14	LHB1V470ME07700LP0	1000
	47	8	6.2	105	0.14	LHB1V470MF06200LP0	1000
	100	6.3	7.7	100	0.14	LHB1V101ME07700LP0	1000
	150	8	10.5	260	0.14	LHB1V151MF10500LP0	500
	150	10	7.7	260	0.14	LHB1V151MG07700LP0	500
	220	10	10.5	450	0.14	LHB1V221MG10500LP0	500
	330	10	10.5	450	0.14	LHB1V331MG10500LP0	500
	470	10	10.5	480	0.14	LHB1V471MG10500LP0	500
	680	12.5	13.5	600	0.14	LHB1V681MI13500LP0	200
	1000	16	16.5	800	0.14	LHB1V102MJ16500LP0	125
	2200	18	16.5	1050	0.14	LHB1V222MK16500LP0	125
50	1	4	5.4	6.3	0.12	LHB1H1ROMB05400LP0	2000
	2.2	4	5.4	11	0.12	LHB1H2R2MB05400LP0	2000
	3.3	4	5.4	14	0.12	LHB1H3R3MB05400LP0	2000
	4.7	5	5.4	19	0.12	LHB1H4R7MC05400LP0	1000
	10	6.3	5.4	30	0.12	LHB1H100MC07700LP0	1000
	22	6.3	7.7	51	0.12	LHB1H220MC07700LP0	1000
	22	8	6.2	67	0.12	LHB1H220MF06200LP0	1000
	33	6.3	7.7	60	0.12	LHB1H330ME07700LP0	1000
	47	6.3	7.7	63	0.12	LHB1H470ME07700LP0	1000
	100	8	10.5	230	0.12	LHB1H101MF10500LP0	500
	150	10	10.5	250	0.12	LHB1H151MG10500LP0	500
	220	10	10.5	375	0.12	LHB1H221MG10500LP0	500
	330	10	10.5	400	0.12	LHB1H331MG10500LP0	500
	470	12.5	13.5	490	0.12	LHB1H471MI13500LP0	200
	680	16	16.5	700	0.12	LHB1H681MJ16500LP0	125
	1000	18	16.5	990	0.12	LHB1H102MK16500LP0	125

特性一览表 4

额定电压 (V.DC)	静电容量 (±20%) (uF)	产品尺寸(mm)		电气特性		料号	最小包装 数量 (PCS)
		φ D	L	额定纹波电流 (120Hz) (+105℃) ( mA r.m.s)	tan δ (120HZ) (+20℃)		
63	0.1	4	5.4	1	0.12	LHB1J0R1MB05400LP0	2000
	0.22	4	5.4	2.3	0.12	LHB1JR22MB05400LP0	2000
	0.33	4	5.4	3.5	0.12	LHB1JR33MB05400LP0	2000
	0.47	4	5.4	5	0.12	LHB1JR47MB05400LP0	2000
	1	4	5.4	8	0.12	LHB1JR10MB05400LP0	2000
	2.2	4	5.4	12	0.12	LHB1J2R2MB05400LP0	2000
	3.3	4	5.4	20	0.12	LHB1J3R3MB05400LP0	2000
	4.7	5	5.4	25	0.12	LHB1J4R7MC05400LP0	1000
	10	6.3	5.4	42	0.12	LHB1J100ME05400LP0	1000
	10	8	6.2	51	0.12	LHB1J220MF06500LP0	1000
	22	6.3	7.7	50	0.12	LHB1J220ME07700LP0	1000
	33	8	10.5	90	0.12	LHB1J330MF10500LP0	500
	47	8	10.5	100	0.12	LHB1J470MF10500LP0	500
	100	10	10.5	150	0.12	LHB1J101MG10500LP0	500
	150	10	10.5	170	0.12	LHB1J151MG10500LP0	500
	220	10	10.5	205	0.12	LHB1J221MG10500LP0	500
	220	12.5	13.5	250	0.12	LHB1J221MI13500LP0	200
	330	12.5	16.5	300	0.12	LHB1J331MI16500LP0	200
	470	16	16.5	450	0.12	LHB1J471MJ16500LP0	125
680	18	16.5	600	0.12	LHB1J681MK16500LP0	125	
1000	18	21.5	800	0.12	LHB1J102MK21500LP0	125	
80	22	8	10.5	100	0.12	LHB1K220MF10500LP0	500
	33	8	10.5	100	0.12	LHB1K330MF10500LP0	500
	47	10	10.5	150	0.12	LHB1K470MG10500LP0	500
	100	10	10.5	180	0.12	LHB1K101MG10500LP0	500
	150	12.5	13.5	280	0.12	LHB1K151MI13500LP0	200
	220	16	16.5	410	0.12	LHB1K221MJ16500LP0	125
	330	16	16.5	510	0.12	LHB1K331MJ16500LP0	125
	470	18	16.5	560	0.12	LHB1K471MK16500LP0	125
100	1	4	5.4	10	0.12	LHB2D010MB05400LP0	2000
	2.2	5	5.4	32	0.12	LHB2D2R2MC05400LP0	1000
	3.3	5	5.4	35	0.12	LHB2D3R3MB05400LP0	1000
	4.7	5	5.4	40	0.12	LHB2D4R7MB05400LP0	1000
	4.7	6.3	5.4	45	0.12	LHB2D4R7MF05400LP0	1000
	10	6.3	5.4	47	0.12	LHB2D100ME05400LP0	1000
	10	6.3	7.7	60	0.12	LHB2D100ME07700LP0	1000
	22	6.3	7.7	62	0.12	LHB2D220ME07700LP0	1000
	22	8	10.5	80	0.12	LHB2D220MF10500LP0	500
	33	8	10.5	90	0.12	LHB2D330MF10500LP0	500
	47	8	10.5	100	0.12	LHB2D470MF10500LP0	500
	47	10	10.5	130	0.12	LHB2D470MG10500LP0	500
	68	10	10.5	133	0.12	LHB2D680MG10500LP0	500
	100	12.5	13.5	220	0.12	LHB2D101MI13500LP0	200
	150	16	16.5	240	0.12	LHB2D151MJ16500LP0	125
	220	16	16.5	410	0.12	LHB2D221MJ16500LP0	125
330	18	16.5	520	0.12	LHB2D331MK16500LP0	125	

■ Frequency coefficient of ripple current

Frequency	50Hz	120Hz	1KHz	10K~100KHz
Coefficient	0.80	1.00	1.25	1.40