

## 系列:LHL

### 产品特点

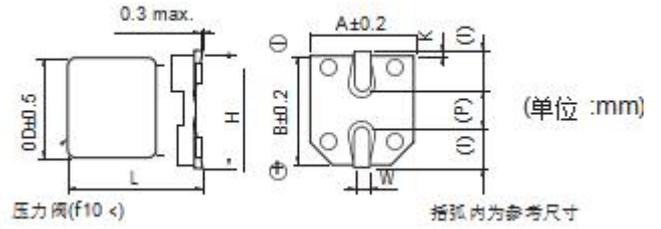
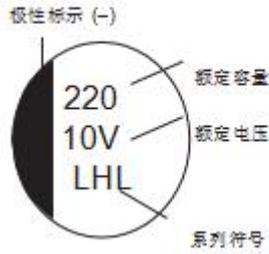
- 高温无铅回流焊产品
- 保证时间：105℃ 3000~5000 小时
- 可满足耐振要求
- 符合 RoHS 标准

项目 Items	特性 Characteristics									
工作温度范围 Operating Temperature Range	-55℃ ~ +105℃									
额定电压范围 Rated Voltage Range	6.3V ~ 100V									
标称电容量范围 Nominal Capacitance Range	1 ~ 1500 μF									
标称电容量允许偏差 Nominal Capacitance Tolerance	±20% (20℃, 120Hz)									
漏电流 Leakage Current	$I \leq 0.01C_r U_r$ or $3(\mu A)$ , 取较大者 (2分钟) $C_r$ : 标称电容量 (μF) $U_r$ : 额定电压 (V) $I \leq 0.01C_r U_r$ or $3(\mu A)$ Whichever is greater (at 20℃, After 2 minutes) $C_r$ : Nominal Capacitance (μF) $U_r$ : Rated voltages (V)									
损耗角正切 (tg δ) Dissipation Factor (Max) 20℃, 120Hz	$U_r$ (V)	6.3	10	16	25	35	50	63	80	100
	tg δ	0.30	0.24	0.20	0.16	0.13	0.12	0.09	0.08	0.07
	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 3000 小时 $\Phi D \leq 10mm$ 后 5000 $\Phi D \geq 12.5mm$ 小时, 电容器应满足以下要求: After 3000 小时 $\Phi D \leq 10mm$ 后 5000 $\Phi D \geq 12.5mm$ application of rated voltage t 105℃, the capacitor shall meet the following requirement:									
	电容量变化率 Capacitance Change	±30%初始值以内 Within ±30% of the initial value								
	损耗角正切 Dissipation Factor	≤ 300%初始规定值 Not more than 300% of the initial specified value								
	漏电流 Leakage Current	≤ 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)	6.3	10	16	25	35	50	63	80	100
	$Z(-25^\circ C)/Z(+20^\circ C)$	4	3	2	2	2	2	2	2	2
	$Z(-55^\circ C)/Z(+20^\circ C)$	10	7	5	3	3	3	3	3	3
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 Capacitance Change	±10%初始值以内 Within ±10% of the initial value								
	损耗角正切 (tg δ) Dissipation Factor	≤ 初始规定值 Not more than the initial specified value								
	漏电流 Leakage Current	≤ 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 LHL系列



φD	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 + 0.15/-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	8.3	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	10.5±0.5	10.3	12	3.5	0.8~1.1	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)
		φD	L	额定纹波电流 (120HZ) (+105℃) (mA r.m.s)	tan δ (120HZ) (+20℃)		
6.3	22	4	5.4	22	0.30	LHLOJ220MB05400LP0	2000
	33	5	5.4	35	0.30	LHLOJ330MC05400LP0	1000
	47	5	5.4	38	0.30	LHLOJ470MC05400LP0	1000
	100	6.3	5.4	69	0.30	LHLOJ101ME05400LP0	1000
	220	6.3	7.7	120	0.30	LHLOJ221ME07700LP0	1000
	330	8	10.5	141	0.30	LHLOJ331MF10500LP0	500
	470	10	10.5	320	0.30	LHLOJ471MG10500LP0	500
	1000	10	10.5	410	0.30	LHLOJ102MG10500LP0	500
10	22	4	5.4	30	0.24	LHL1A220MB05400LP0	2000
	33	5	5.4	35	0.24	LHL1A330MC05400LP0	1000
	47	6.3	5.4	50	0.24	LHL1A470ME05400LP0	1000
	100	6.3	7.7	81	0.24	LHL1A101ME07700LP0	1000
	220	8	10.5	141	0.24	LHL1A221MF10500LP0	500
	330	10	10.5	290	0.24	LHL1A331MG10500LP0	500
	470	10	10.5	320	0.24	LHL1A471MG10500LP0	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)
		φD	L	额定纹波电流 (120HZ) (+105℃)	tan δ (120HZ) (+20℃)		
16	10	4	5.4	18	0.20	LHL1C100MB05400LP0	2000
	22	5	5.4	30	0.20	LHL1C220MC05400LP0	1000
	33	6.3	5.4	48	0.20	LHL1C330ME05400LP0	1000
	47	6.3	5.4	50	0.20	LHL1C470ME05400LP0	1000
	100	6.3	7.7	81	0.20	LHL1C101ME07700LP0	1000
	220	8	10.5	141	0.20	LHL1C221MF10500LP0	500
	330	10	10.5	290	0.20	LHL1C331MG10500LP0	500
	470	10	10.5	320	0.20	LHL1C471MG10500LP0	500
25	10	5	5.4	27	0.16	LHL1E100MC05400LP0	1000
	22	6.3	5.4	44	0.16	LHL1E220ME05400LP0	1000
	33	6.3	5.4	50	0.16	LHL1E330ME05400LP0	1000
	47	6.3	7.7	63	0.16	LHL1E470ME07700LP0	1000
	100	8	10.5	116	0.16	LHL1E101MF10500LP0	500
	220	10	10.5	290	0.16	LHL1E221MG10500LP0	500
	330	10	10.5	320	0.16	LHL1E331MG10500LP0	500
35	4.7	4	5.4	16	0.13	LHL1V4R7MB05400LP0	2000
	10	5	5.4	27	0.13	LHL1V100MC05400LP0	1000
	22	6.3	5.4	44	0.13	LHL1V220ME05400LP0	1000
	33	6.3	7.7	57	0.13	LHL1V330ME07700LP0	1000
	47	8	10.5	92	0.13	LHL1V470MF10500LP0	500
	100	10	10.5	151	0.13	LHL1V101MG10500LP0	500
	220	10	10.5	320	0.13	LHL1V221MG10500LP0	500
	330	12.5	13.5	320	0.13	LHL1V331MI13500LP0	200
	470	12.5	16.5	410	0.13	LHL1V471MI16500LP0	200
	1000	16	16.5	690	0.13	LHL1V152MJ16500LP0	125
1500	18	16.5	900	0.13	LHL1V152MK16500LP0	125	
50	1	4	5.4	8	0.12	LHL1H1R0MB05400LP0	2000
	2.2	4	5.4	12	0.12	LHL1H2R2MB05400LP0	2000
	3.3	4	5.4	17	0.12	LHL1H3R3MB05400LP0	2000
	4.7	5	5.4	22	0.12	LHL1H4R7MB05400LP0	1000
	10	6.3	5.4	32	0.12	LHL1H100ME05400LP0	1000
	22	6.3	7.7	58	0.12	LHL1H220ME07700LP0	1000
	33	8	10.5	130	0.12	LHL1H330MF10500LP0	500
	47	8	10.5	141	0.12	LHL1H470MF10500LP0	500
	100	10	10.5	310	0.12	LHL1H101MF10500LP0	500
	220	12.5	13.5	280	0.12	LHL1H221MI13500LP0	200
	330	12.5	16	360	0.12	LHL1H331MI16500LP0	200
	470	16	16.5	510	0.12	LHL1H471MJ16500LP0	125
	1000	18	16.5	780	0.12	LHL1H102MK16500LP0	125

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)
		φ D	L	额定纹波电流 (120HZ) (+105°C)	tan δ (120HZ) (+20°C)		
63	150	12.5	13.5	240	0.09	LHL1J151MI13500LP0	200
	220	12.5	16.5	320	0.09	LHL1J221MI16500LP0	200
	330	16	16.5	450	0.09	LHL1J331MJ16500LP0	125
	470	16	16.5	540	0.09	LHL1J471MJ16500LP0	125
80	100	12.5	13.5	220	0.08	LHL1K101MI13500LP0	200
	150	12.5	16.5	290	0.08	LHL1K151MI16500LP0	200
	220	16	16.5	410	0.08	LHL1K221MJ16500LP0	125
	330	16	16.5	510	0.08	LHL1K331MJ16500LP0	125
	470	18	16.5	650	0.08	LHL1K471MN16500LP0	125
100	68	12.5	13.5	180	0.07	LHL2A680MI13500LP0	200
	100	12.5	16.5	240	0.07	LHL2A101MI16500LP0	200
	150	16	16.5	340	0.07	LHL2A151MJ16500LP0	125
	220	16	16.5	410	0.07	LHL2A221MJ16500LP0	125
	330	18	16.5	540	0.07	LHL2A331MK16500LP0	125

■ Frequency coefficient of ripple current

Frequency Cap. (uF)	50Hz	120Hz	1KHz	10K~100KHz
Under 1000	0.70	1.00	1.30	1.40
1000<C≤1500	0.85	1.00	1.13	1.15