

# 系列：LHD

## 产品特点

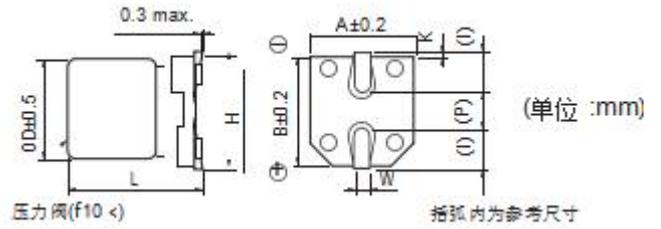
- 高温无铅回流焊产品
- 保证时间：105℃，2000~5000 小时
- Low impedance 30~50% Less than LHZ series
- Designed for surface mounting on high density PC board
- 符合 RoHS 标准

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 ~ 50V									
标称电容量范围 Nominal Capacitance Range		10 ~ 2200μF									
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(μA), 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(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)	6.3	10	16	25	35	50	63	80	100	
	tgδ	0.26	0.19	0.16	0.14	0.12	0.10	0.10	0.10	0.08	
		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 2000-5000 小时后, ΦD8-ΦD10: 16V to 50V is 5000hours 电容器应满足以下要求: After applying the rated voltage at +105℃ for 2000-5000 hours, ΦD8-ΦD10: 16V to 50V is 5000hours Capacitors should meet the following requirements:										
	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	≤ 200%初始规定值 Not more than 200% 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	
	$Z(-25℃)/Z(+20℃)$	4	3	2	2	2	2	2	2	2	
	$Z(-55℃)/Z(+20℃)$	8	5	4	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 (tgδ) 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 LHD系列



φD	L	A, B	H.	I	W	P	K
4	5.8±0.3	4.3	5.5	1.8	0.5~0.8	1.0	0.35 <sup>+0.15</sup> -0.20
5	5.8±0.3	5.3	6.5	2.1	0.5~0.8	1.3	
6.3	5.8±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	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	0.7~1.3	4.5	0.70±0.20
10	12.5±0.5	10.3	12	3.5	0.7~1.3	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 (100KHZ) (+105℃)	tan δ (120HZ) (+20℃)	Impedance (100KHZ) (+20℃)		
6.3	100	4	5.8	160	0.26	0.85	LHD0J101MB05800LP0	2000
	220	5	5.8	240	0.26	0.36	LHD0J221MB05800LP0	1000
	330	6.3	5.8	300	0.26	0.26	LHD0J331ME05800LP0	1000
	470	6.3	7.7	600	0.26	0.16	LHD0J471ME07700LP0	1000
	680	6.3	7.7	600	0.26	0.16	LHD0J681ME07700LP0	1000
	1500	8	10.5	850	0.26	0.08	LHD0J152MF10500LP0	500
	2200	10	10.5	1190	0.28	0.06	LHD0J222MG10500LP0	500
10	68	4	5.8	160	0.19	0.85	LHD1A680MB05800LP0	2000
	15	5	5.8	240	0.19	0.36	LHD1A680MB05800LP0	1000
	220	6.3	5.8	300	0.19	0.26	LHD1A221ME05800LP0	1000
	330	6.3	7.7	600	0.19	0.16	LHD1A331ME07700LP0	1000
	470	6.3	7.7	600	0.19	0.16	LHD1A471ME10500LP0	1000
	1000	8	10.5	850	0.19	0.08	LHD1A102MF10500LP0	500
	1500	10	10.5	1190	0.19	0.06	LHD1A152MG10500LP0	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 (100KHZ) (+105℃)	tan δ (120HZ) (+20℃)	Impedance (100KHZ) (+20℃)		
16	47	4	5.8	160	0.16	0.85	LHD1C470MB05800LP0	2000
	68	5	5.8	240	0.16	0.36	LHD1C680MC05800LP0	1000
	100	5	5.8	240	0.16	0.36	LHD1C101MC05800LP0	1000
	150	6.3	5.8	300	0.16	0.26	LHD1C151ME05800LP0	1000
	220	6.3	5.8	300	0.16	0.26	LHD1C221ME05800LP0	1000
	330	6.3	7.7	600	0.16	0.16	LHD1C331ME07700LP0	1000
	680	8	10.5	850	0.16	0.08	LHD1C681MF10500LP0	500
	820	8	10.5	850	0.16	0.08	LHD1C821MF10500LP0	500
	1000	10	10.5	1190	0.16	0.06	LHD1C102MG10500LP0	500
25	22	4	5.8	160	0.14	0.85	LHD1E220MB05800LP0	2000
	33	4	5.8	160	0.14	0.85	LHD1E330MB05800LP0	2000
	47	5	5.8	240	0.14	0.36	LHD1E470MC05800LP0	1000
	68	5	5.8	240	0.14	0.36	LHD1E680MC05800LP0	1000
	100	6.3	5.8	300	0.14	0.26	LHD1E101ME05800LP0	1000
	150	6.3	7.7	600	0.14	0.16	LHD1E151ME07700LP0	1000
	220	6.3	7.7	600	0.14	0.16	LHD1E221ME07700LP0	1000
	470	8	10.5	850	0.14	0.08	LHD1E471MF10500LP0	500
	560	8	10.5	850	0.14	0.08	LHD1F561MF10500LP0	500
	820	10	10.5	1190	0.14	0.06	LHD1E821MG10500LP0	500
1000	10	10.5	1190	0.14	0.06	LHD1E102MG10500LP0	500	
35	22	4	5.8	160	0.12	0.85	LHD1V220MB05800LP0	2000
	33	5	5.8	240	0.12	0.36	LHD1V330MC05800LP0	1000
	47	5	5.8	240	0.12	0.36	LHD1V470MC05800LP0	1000
	68	6.3	5.8	300	0.12	0.26	LHD1V680ME05800LP0	1000
	100	6.3	5.8	300	0.12	0.26	LHD1V101ME05800LP0	1000
	150	6.3	7.7	600	0.12	0.16	LHD1V151ME07700LP0	1000
	330	8	10.5	850	0.12	0.08	LHD1V331MF10500LP0	500
	390	8	10.5	850	0.12	0.08	LHD1V391MF10500LP0	500
	560	10	10.5	1190	0.12	0.06	LHD1V561MG10500LP0	500
50	10	4	5.8	85	0.10	2.30	LHD1H100MB05800LP0	2000
	10	5	5.8	165	0.10	0.88	LHD1H100MC05800LP0	1000
	22	5	5.8	165	0.10	0.88	LHD1H220MC05800LP0	1000
	47	6.3	5.8	195	0.10	0.68	LHD1H470ME05800LP0	1000
	100	6.3	7.7	350	0.10	0.34	LHD1H101ME07700LP0	1000
	220	8	10.5	670	0.10	0.18	LHD1H221MF10500LP0	500
	330	10	10.5	900	0.10	0.12	LHD1H331MG10500LP0	500
63	22	6.3	5.8	185	0.10	0.78	LHD1J220ME05800LP0	1000
	33	6.3	5.8	185	0.10	0.78	LHD1J330ME05800LP0	1000
	47	6.3	7.7	210	0.10	0.65	LHD1J470ME07700LP0	1000
	100	8	10.5	260	0.10	0.25	LHD1J101MF10500LP0	500
80	68	8	10.5	220	0.10	0.30	LHD1K680MF10500LP0	500
100	22	6.3	7.7	100	0.08	2.0	LHD2A220ME07700LP0	1000

### Frequency coefficient of ripple current

Cap.(uF)	Frequency (HZ)			
	120HZ	1K	10K	100K up
Under 470	0.65	0.85	0.95	1.00
560 ≦ C < 2200	0.70	0.90	0.95	1.00