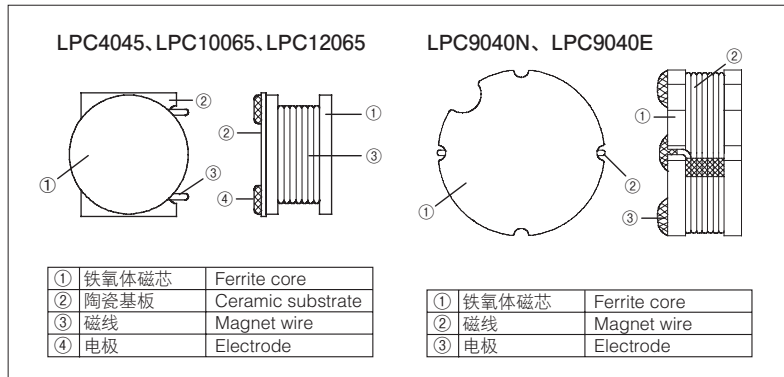


LPC 功率片式电感器 Power Chip Inductors



■ 结构图 Construction

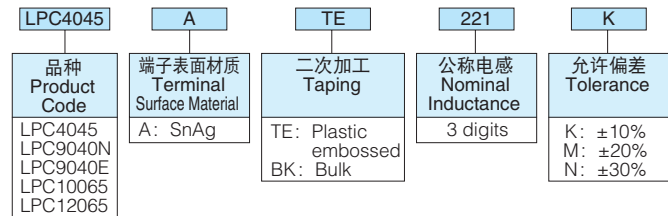


■ 特点 Features

- 通过独特的结构、卷线技术，实现了低直流电阻、高允许电流。
- 表面封装型，对应自动装裁。
- 焊接性、耐环境性优异。
- 对应回流焊接。
- 端子无铅品，符合欧盟RoHS。
- AEC-Q200相关数据已取得。(LPC4045)
- Low DC resistance and high allowable current are realized by the original construction and high wiring technology.
- Automatic surface mounting is applicable.
- Excellent solderability and endurance environment.
- Suitable for reflow soldering.
- Products with lead free termination meet EU-RoHS requirements.
- AEC-Q200 qualified. (LPC4045)

■ 品名构成 Type Designation

实例 Example



端子表面材质以无铅品为标准。

欲知关于此产品含有的环境负荷物质详情(除EU-RoHS以外)，请与我们联系。附带细节参照卷末的附录C。

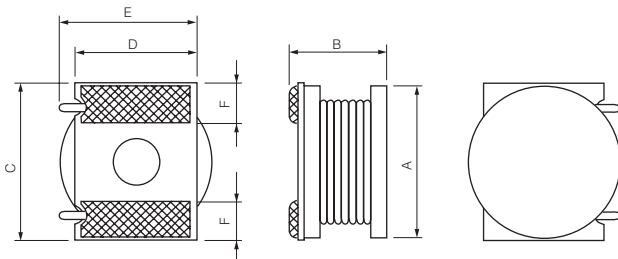
The terminal surface material lead free is standard.

Contact us when you have control request for environmental hazardous material other than the substance specified by EU-RoHS.

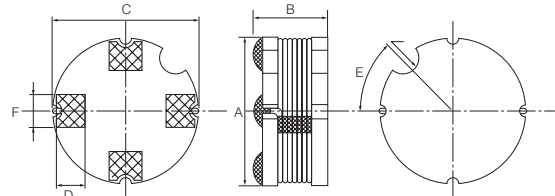
For further information on taping, please refer to APPENDIX C on the back pages.

■ 外形尺寸 Dimensions [mm]

LPC4045, LPC10065, LPC12065



LPC9040N, LPC9040E



型号 Type	A	B	C±0.2	D±0.2	E	F
LPC4045	φ 4.0±0.2	4.3±0.2	4.5	3	(3.5)	1.0±0.3
LPC10065	φ 10.0±0.2	7.5 Max.	10.4	8	(9.0)	2.5±0.2
LPC12065	φ 12.0±0.2	7.5 Max.	12.4	10	(11.0)	3.7±0.3

型号 Type	A	B	C	D	E	F
LPC9040N	9.0±0.1	4.9Max.	10.2Max.	1.8±0.2	45° ±6°	2.0±0.2
LPC9040E						

■ 性能 Performance

试验项目 Test Items	标准值 Performance Requirements		试验方法 Test Methods
	保证值 Limit	代表值 Typical	
热冲击 Heat shock	±5%	±1.3%	-40°C (30min.) / +85°C (30min.) 100 cycles -40°C (30min.) / +125°C (30min.) 100 cycles LPC4045, LPC9040N, LPC10065, LPC12065, LPC9040E
低温放置 Low temperature exposure	±5%	±1.3%	-40°C ±2°C, 500h
高温放置 High temperature exposure	±5%	±1.3%	85°C ±2°C, 500h 125°C ±2°C, 500h LPC4045, LPC9040N, LPC10065, LPC12065, LPC9040E
耐湿性 Moisture endurance	±5%	±1.6%	40°C ±2°C, 90%~95%RH, 500h

■ 使用注意事项 Precautions for Use

- 对电感器上施加强力、过度冲击时，电、磁特性会发生变化，因此在装裁时和装裁后应不要施加过度冲击。
- 由于在线圈架上使用了铁氧体，通过转换频率，发热量会不同，因此使用时温度应在使用温度范围以下。
- Avoid strong pressure or excessive shock at mounting or after mounting because electric/magnetic characteristics may change if it is applied to the inductors.
- Due to the products using ferrite for coil bobbins, use them 85 °C or under of inductor temperature because the volume of generating heat varies depending on switching frequency.

■ 额定值 Ratings

LPC4045 包装数/卷 Q'ty/Reel : 2500pcs

型号 Type	公称电感 Nominal Inductance (μH)	直流阻抗 DC Resistance (Ω) Max.	允许直流电流 Allowable DC Current (A) Max.	自共振频率 Self Resonant Frequency (MHz)
LPC4045ATE 1R0M	1.0	0.015	3.10	90.0
LPC4045ATE 1R5M	1.5	0.020	2.80	70.0
LPC4045ATE 2R2M	2.2	0.023	2.50	55.0
LPC4045ATE 3R3M	3.3	0.044	1.80	45.0
LPC4045ATE 4R7M	4.7	0.062	1.45	35.0
LPC4045ATE 6R8M	6.8	0.075	1.30	25.0
LPC4045ATE 100K	10	0.10	1.02	23.5
LPC4045ATE 150K	15	0.15	0.84	18.5
LPC4045ATE 220K	22	0.21	0.70	14.0
LPC4045ATE 330K	33	0.41	0.52	12.0
LPC4045ATE 470K	47	0.52	0.46	10.5
LPC4045ATE 680K	68	0.67	0.40	8.0
LPC4045ATE 101K	100	0.92	0.28	6.3
LPC4045ATE 151K	150	1.80	0.25	5.2
LPC4045ATE 221K	220	2.25	0.18	3.9
LPC4045ATE 331K	330	4.27	0.15	3.0
LPC4045ATE 471K	470	5.23	0.14	2.7
LPC4045ATE 681K	680	6.67	0.12	2.2

LPC10065 包装数/卷 Q'ty/Reel : 500pcs

型号 Type	公称电感 Nominal Inductance (μH)	直流阻抗 DC Resistance (Ω) Max.	允许直流电流 Allowable DC Current (A) Max.	自共振频率 Self Resonant Frequency (MHz)
LPC10065ATE R68M	0.68	6.0(mΩ)	9.50	75.0
LPC10065ATE 1R0M	1.0	7.0(mΩ)	9.00	65.0
LPC10065ATE 1R5M	1.5	8.0(mΩ)	8.50	50.0
LPC10065ATE 2R2M	2.2	9.0(mΩ)	7.50	40.0
LPC10065ATE 3R3M	3.3	0.012	6.80	30.0
LPC10065ATE 4R7M	4.7	0.017	5.70	25.0
LPC10065ATE 6R8M	6.8	0.024	4.70	20.0
LPC10065ATE 100K	10	0.036	3.90	15.0
LPC10065ATE 150K	15	0.054	3.15	12.0
LPC10065ATE 220K	22	0.080	2.60	9.00
LPC10065ATE 330K	33	0.120	2.30	8.00
LPC10065ATE 470K	47	0.175	1.79	6.00
LPC10065ATE 680K	68	0.255	1.48	5.00
LPC10065ATE 101K	100	0.380	1.22	4.00
LPC10065ATE 151K	150	0.580	1.00	3.00
LPC10065ATE 221K	220	0.850	0.82	2.50
LPC10065ATE 331K	330	1.30	0.67	2.00
LPC10065ATE 471K	470	1.85	0.57	1.50
LPC10065ATE 681K	680	2.70	0.47	1.00
LPC10065ATE 102K	1.0(mH)	4.00	0.38	0.95
LPC10065ATE 152K	1.5(mH)	6.10	0.31	0.85
LPC10065ATE 222K	2.2(mH)	9.00	0.26	0.70
LPC10065ATE 332K	3.3(mH)	13.5	0.21	0.55

LPC9040N 包装数/卷 Q'ty/Reel : 1500pcs

型号 Type	公称电感 Nominal Inductance (μH)	直流阻抗 DC Resistance (Ω) Max.	允许直流电流 Allowable DC Current (A) Max.	自共振频率 Self Resonant Frequency (MHz)
LPC9040NATE 100M	10	0.07	1.55	25.0
LPC9040NATE 150K	15	0.09	1.40	21.0
LPC9040NATE 220K	22	0.11	1.25	15.0
LPC9040NATE 330K	33	0.14	1.10	13.5
LPC9040NATE 470K	47	0.20	0.99	11.5
LPC9040NATE 680K	68	0.27	0.91	10.0
LPC9040NATE 101K	100	0.41	0.70	8.0
LPC9040NATE 151K	150	0.55	0.60	7.0
LPC9040NATE 221K	220	0.81	0.50	5.0
LPC9040NATE 331K	330	1.86	0.29	3.3
LPC9040NATE 471K	470	2.07	0.22	2.8
LPC9040NATE 681K	680	2.65	0.14	1.2

LPC12065 包装数/卷 Q'ty/Reel : 500pcs

型号 Type	公称电感 Nominal Inductance (μH)	直流阻抗 DC Resistance (Ω) Max.	允许直流电流 Allowable DC Current (A) Max.	自共振频率 Self Resonant Frequency (MHz)
LPC12065ATE R68N	0.68	5.0(mΩ)	10.0	77.0
LPC12065ATE 1R0N	1.0	7.0(mΩ)	9.50	60.0
LPC12065ATE 1R5N	1.5	8.0(mΩ)	9.00	47.0
LPC12065ATE 2R2N	2.2	10.0(mΩ)	8.00	38.0
LPC12065ATE 3R3M	3.3	0.012	7.00	30.0
LPC12065ATE 4R7M	4.7	0.016	6.50	24.0
LPC12065ATE 6R8M	6.8	0.022	5.40	19.0
LPC12065ATE 100K	10	0.031	4.50	15.0
LPC12065ATE 150K	15	0.046	3.63	12.0
LPC12065ATE 220K	22	0.065	3.00	9.50
LPC12065ATE 330K	33	0.093	2.40	7.50
LPC12065ATE 470K	47	0.130	2.05	6.20
LPC12065ATE 680K	68	0.182	1.70	4.90
LPC12065ATE 101K	100	0.260	1.38	4.00
LPC12065ATE 151K	150	0.380	1.14	3.20
LPC12065ATE 221K	220	0.540	0.94	2.50
LPC12065ATE 331K	330	0.790	0.77	2.00
LPC12065ATE 471K	470	1.08	0.65	1.60
LPC12065ATE 681K	680	1.55	0.53	1.30
LPC12065ATE 102K	1.0(mH)	2.21	0.44	1.00
LPC12065ATE 152K	1.5(mH)	3.20	0.35	0.83
LPC12065ATE 222K	2.2(mH)	4.60	0.29	0.67
LPC12065ATE 332K	3.3(mH)	6.60	0.23	0.53
LPC12065ATE 472K	4.7(mH)	9.30	0.19	0.43
LPC12065ATE 682K	6.8(mH)	13.2	0.16	0.34

LPC9040E 包装数/卷 Q'ty/Reel : 1500pcs

型号 Type	公称电感 Nominal Inductance (μH)	直流阻抗 DC Resistance (Ω) Max.	允许直流电流 Allowable DC Current (A) Max.	自共振频率 Self Resonant Frequency (MHz)
LPC9040EATE 100M	10	0.07	2.40	25.0
LPC9040EATE 150K	15	0.09	2.20	21.0
LPC9040EATE 220K	22	0.11	2.00	15.0
LPC9040EATE 330K	33	0.14	1.80	13.5
LPC9040EATE 470K	47	0.20	1.40	11.5
LPC9040EATE 680K	68	0.27	1.20	10.0
LPC9040EATE 101K	100	0.41	1.00	8.0
LPC9040EATE 151K	150	0.55	0.80	7.0
LPC9040EATE 221K	220	0.81	0.60	5.0
LPC9040EATE 331K	330	1.86	0.45	3.3
LPC9040EATE 471K	470	2.07	0.40	2.8
LPC9040EATE 681K	680	2.65	0.35	1.2

型号 Type	电感允许偏差 Inductance Tolerance			使用温度范围 Operating Temp. Range	编带和包装数/卷 Taping & Q'ty/Reel (pcs)	重量 Weight (g/1000pcs)
	K: ±10%	M: ±20%	N: ±30%			
LPC4045	10 μH~680 μH	1.0 μH~6.8 μH	—	-40°C~+85°C	TE 2500	210
LPC9040N	15 μH~680 μH	10 μH	—	-40°C~+85°C	1500	1150
LPC9040E				-40°C~+125°C*		
LPC10065	10 μH~3.3mH	0.68 μH~6.8 μH	—	-40°C~+85°C	500	2100
LPC12065	10 μH~6.8mH	3.3 μH ~6.8 μH	0.68 μH~2.2 μH	-40°C~+85°C	500	2950

- ※包含自身的温升。 Self-heating is included.
线圈绕组部分的温度 (环境温度+自身发热) 须在工作温度上限 (+85或+125°C) 以下。
That the operating temperature upper limit temperature of the coil winding portions (ambient temperature + self-heating) is (+85°C or +125°C) or less.
- 允许直流电流值: 线圈温度上升及电感变化率的各标准值以内的直流电流的较小的值。
Allowable DC Current: DC Current value which coil temperature raise is within spec., or which inductance change ratio is within spec., whichever is smaller.

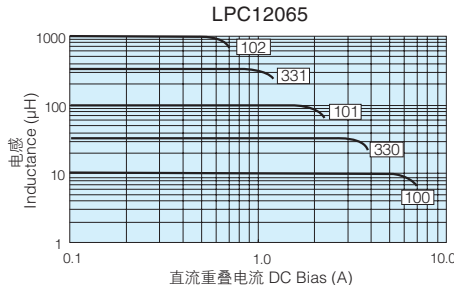
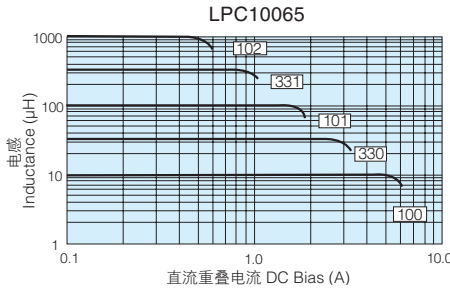
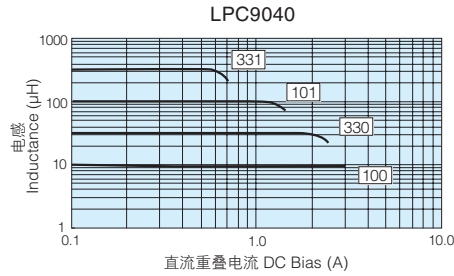
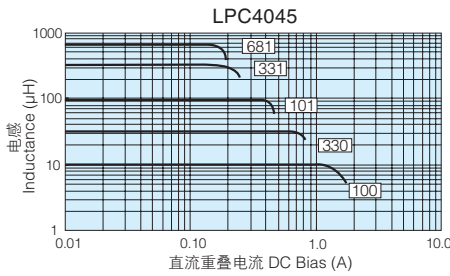
	LPC4045/LPC9040N LPC10065/LPC12065	LPC9040E
线圈温度上升 ΔT = Coil temperature rise ΔT =	+20°C	+40°C
电感变化率 ΔL/L = Inductance change ratio ΔL/L =	-10%	-10%

本样本手册中记载的产品规格如有变更，恕不一一奉告。订购以及使用之前，请仔细确认规格表的内容。
用于车载设备、医疗设备、航空设备以及其他涉及人身安全、或可能引起重大损失的设备上时，请务必先与我公司联系。这些产品在这类用途中出现故障或失灵可能导致人身事故或严重损坏。
Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.
Contact our sales representatives before you use our products for applications including automobiles, medical equipment and aerospace equipment.
Malfunction or failure of the products in such applications may cause loss of human life or serious damage.

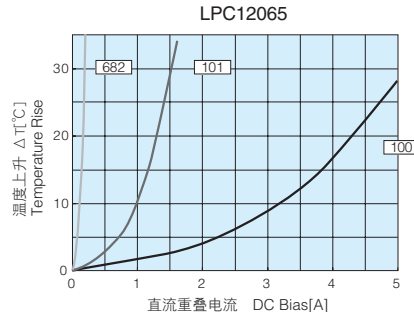
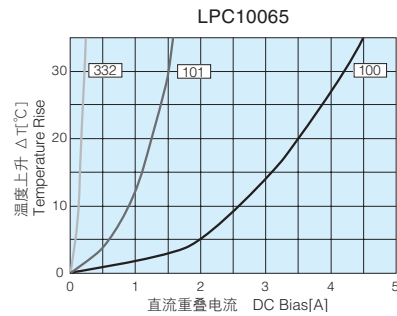
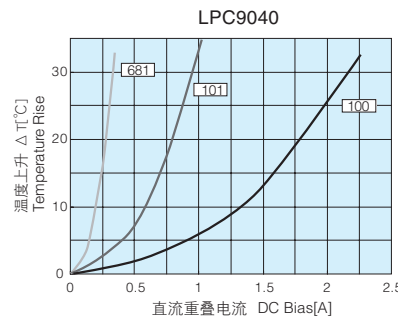
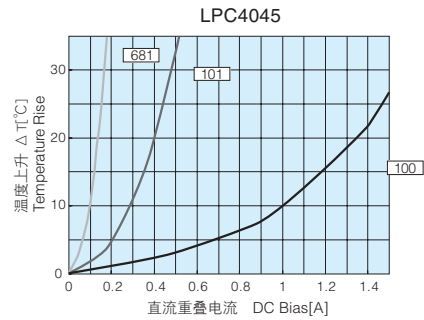
LPC 功率片式电感器 Power Chip Inductors

■ 直流重叠特性 DC Bias Characteristics

电感器 Inductor



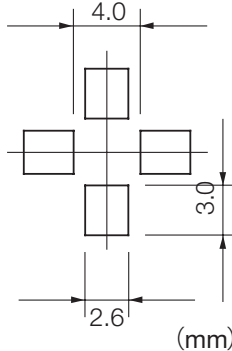
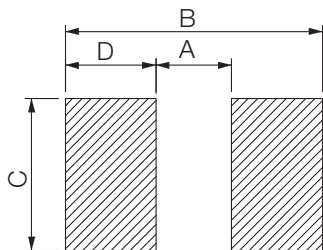
■ 表面温度上升 Surface Temperature Rise



■ 推荐焊接区尺寸 Recommended Pad Dimensions

LPC4045, 4235, 10065, 12065

LPC9040



型号 Type	焊接区尺寸 Pad Dimensions (mm)			
	A	B	C	D
LPC4045	1.5	5.1	3.5	1.8
LPC10065	5.0	13.0	6.0	4.0
LPC12065	5.0	15.0	7.5	5.0

※这些推荐焊接区尺寸是标准模式，不是保证特性的。应在事前经确认后使用。

These pad dimensions are only for standard pattern and the characteristics are not guaranteed, which you are suggested to confirm before use.