

## 承认书

## SPECIFICATION FOR APPROVAL

客户名称:

Customer Name:

(请填写贵司全名)

客户品名:

Customer Part No.:

(请填写客户物料编码)

大立品名:

DALI Part No.:

(请填写大立品名)

大立规格书编号:

Specification No.:

Spec-CPQ Series Rev.02


变更履历/Revised record:

Rev.	Effective Date	Changed Contents	Change Reasons	Approved By
01	2012-09-01	New released		Paul
02	2019-01-01	Format update		Paul

客户承认栏(请签名盖章并签署日期后回传)

Customer's Approval Chop: 客户承认盖章:
Approved By: 承认人:
Approved Date: 承认日期:

广州大立电子有限公司

Confirmed	Checked	Prepared
 Paul	Amy	Steven
Date: 2019-01-01		

Add: 广州市南沙区进港大道

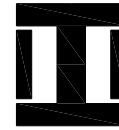
Tel: 020-39075998 Fax: 020-39075978

Type Name: CPQ/PPQ Series

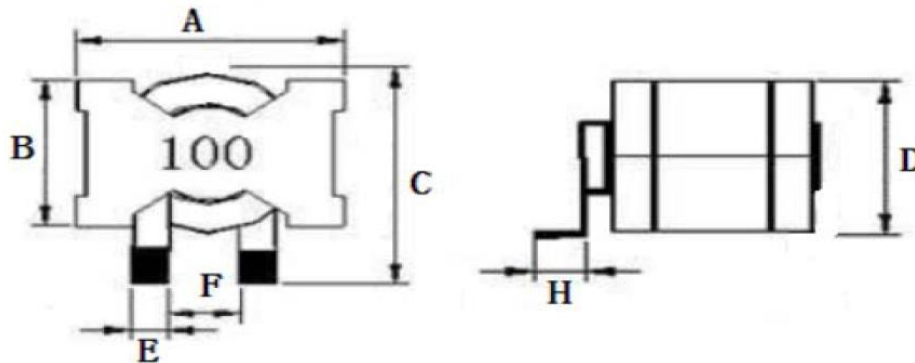
Construction/磁气构造图

CPQ (SMD Type)

PPQ (Pin Type)



Dimensions/外形尺寸图(Unit: mm)



Shape and Size: (Dimensions are in mm)

Type Name/型名	A	B	C	D	E	F	H	MPQ(Pcs/Reel) 最小包装数(个/盘)
CPQ2012	20.8±1.0	14.0±0.5	23.0max.	13.0max.	3.5±0.3	4.5±0.5	2.0min.	-
CPQ2014	20.8±1.0	14.0±0.5	23.0max.	15.0max.	3.5±0.3	4.5±0.5	2.0min.	-
CPQ2016	20.8±1.0	14.0±0.5	23.0max.	17.0max.	3.5±0.3	4.5±0.5	2.0min.	-
CPQ2712	27.0±1.0	19.0±1.0	26.0max.	13.0max.	3.8±0.3	6.6±0.5	3.8min.	-
CPQ2715	27.0±1.0	19.0±1.0	26.0max.	16.0max.	3.8±0.3	6.6±0.5	3.8min.	-
CPQ2718	27.0±1.0	19.0±1.0	26.0max.	19.0max.	3.8±0.3	6.6±0.5	3.8min.	-
CPQ2720	27.0±1.0	19.0±1.0	26.0max.	21.0max.	3.8±0.3	6.6±0.5	3.8min.	-
CPQ3218	32.0±1.0	24.0±1.0	33.0max.	19.0max.	6.0±0.3	6.0±0.5	3.8min.	-

Product Identification/品名注释

C PQ 2715 - 100 M C  
(1) (2) (3) (4) (5) (6)

(1) C=SMD Type, P=Pin Type/C:表面安装制品, P:插件制品

(2) PQ core used/使用 PQ 型磁芯

(3) Dimension symbol/尺寸表示:

2715=27 x 15 mm (W x H)

(4) Inductance value/电感值:

4R7=4.7μH, 100=10μH, 101=100μH

(5) Tolerance/公差: M=±20%

(6) Packing Style/包装形态: C=Carrier taping/编带包装

**CPQ2012/PPQ2012 Electrical Characteristics**

Part Number	Inductance ( $\mu\text{H}$ ) ①	DCR max. ( $\text{m}\Omega$ ) ② (Typ.)	Saturation Current (A) ③	Temperature Rise Current(A) ④
CPQ2012-R50MC	0.5 $\pm$ 20%	0.8(0.5)	70	35
CPQ2012-1R5MC	1.5 $\pm$ 20%	2.5(1.5)	55	30
CPQ2012-2R0MC	2.0 $\pm$ 20%	4.0(2.5)	50	28
CPQ2012-2R2MC	2.2 $\pm$ 20%	4.0(2.5)	45	28
CPQ2012-3R3MC	3.3 $\pm$ 20%	7.0(4.6)	40	20
CPQ2012-4R7MC	4.7 $\pm$ 20%	7.0(4.6)	35	20
CPQ2012-6R8MC	6.8 $\pm$ 20%	7.0(4.6)	25	20
CPQ2012-8R2MC	8.2 $\pm$ 20%	7.0(4.6)	20	20
CPQ2012-100MC	10 $\pm$ 20%	10(6.8)	18	16
CPQ2012-150MC	15 $\pm$ 20%	10(6.8)	15	16
CPQ2012-220MC	22 $\pm$ 20%	10(6.8)	11	16
CPQ2012-330MC	33 $\pm$ 20%	10(6.8)	7.0	16

**CPQ2014/PPQ2014 Electrical Characteristics**

Part Number	Inductance ( $\mu\text{H}$ ) ①	DCR max. ( $\text{m}\Omega$ ) ② (Typ.)	Saturation Current (A) ③	Temperature Rise Current(A) ④
CPQ2014-2R2MC	2.2 $\pm$ 20%	2.2(1.5)	50	28
CPQ2014-3R3MC	3.3 $\pm$ 20%	3.0(2.0)	40	26
CPQ2014-4R7MC	4.7 $\pm$ 20%	4.5(3.0)	35	24
CPQ2014-5R6MC	5.6 $\pm$ 20%	6.0(4.0)	30	22
CPQ2014-6R8MC	6.8 $\pm$ 20%	8.0(5.6)	28	21
CPQ2014-8R2MC	8.2 $\pm$ 20%	9.5(7.2)	23	17
CPQ2014-100MC	10 $\pm$ 20%	10.5(8.0)	20	16
CPQ2014-150MC	15 $\pm$ 20%	11.2(8.7)	16	14
CPQ2014-220MC	22 $\pm$ 20%	11.2(8.7)	12	14
CPQ2014-330MC	33 $\pm$ 20%	11.2(8.7)	9.0	14

**CPQ2016/PPQ2016 Electrical Characteristics**

Part Number	Inductance ( $\mu\text{H}$ ) ①	DCR max. ( $\text{m}\Omega$ ) ② (Typ.)	Saturation Current (A) ③	Temperature Rise Current(A) ④
CPQ2016-6R8MC	6.8 $\pm$ 20%	6.0(4.0)	30	22
CPQ2016-8R2MC	8.2 $\pm$ 20%	6.0(4.0)	30	22
CPQ2016-100MC	10 $\pm$ 20%	8.0(5.5)	22	16
CPQ2016-150MC	15 $\pm$ 20%	8.0(5.5)	18	16
CPQ2016-220MC	22 $\pm$ 20%	8.0(5.5)	12	16
CPQ2016-330MC	33 $\pm$ 20%	17(13)	9.0	12
CPQ2016-470MC	47 $\pm$ 20%	17(13)	6.0	12

**CPQ2712/PPQ2712 Electrical Characteristics**

Part Number	Inductance ( $\mu\text{H}$ ) ①	DCR max. ( $\text{m}\Omega$ ) ② (Typ.)	Saturation Current (A) ③	Temperature Rise Current(A) ④
CPQ2712-1R5MC	1.5 $\pm$ 20%	1.5(1.0)	60	40
CPQ2712-2R2MC	2.2 $\pm$ 20%	3.0(2.0)	50	30
CPQ2712-3R3MC	3.3 $\pm$ 20%	6.0(4.0)	40	22
CPQ2712-4R7MC	4.7 $\pm$ 20%	6.0(4.0)	35	22
CPQ2712-6R8MC	6.8 $\pm$ 20%	6.0(4.0)	28	22
CPQ2712-8R2MC	8.2 $\pm$ 20%	6.0(4.0)	22	22
CPQ2712-100MC	10 $\pm$ 20%	9.0(6.0)	20	18
CPQ2712-150MC	15 $\pm$ 20%	9.0(6.0)	16	18
CPQ2712-220MC	22 $\pm$ 20%	9.0(6.0)	12	18
CPQ2712-330MC	33 $\pm$ 20%	9.0(6.0)	8.0	18

**CPQ2715/PPQ2715 Electrical Characteristics**

Part Number	Inductance ( $\mu\text{H}$ ) ①	DCR max. ( $\text{m}\Omega$ ) ② (Typ.)	Saturation Current (A) ③	Temperature Rise Current(A) ④
CPQ2715-1R5MC	1.5 $\pm$ 20%	2.5(1.6)	100	30
CPQ2715-2R2MC	2.2 $\pm$ 20%	2.5(1.6)	84	30
CPQ2715-3R3MC	3.3 $\pm$ 20%	2.5(1.6)	54	30
CPQ2715-4R7MC	4.7 $\pm$ 20%	2.5(1.6)	37	30
CPQ2715-6R8MC	6.8 $\pm$ 20%	2.5(1.6)	26	30
CPQ2715-100MC	10 $\pm$ 20%	2.5(1.6)	16	30
CPQ2715-150MC	15 $\pm$ 20%	2.5(1.6)	9.8	30
CPQ2715-220MC	22 $\pm$ 20%	2.5(1.6)	6.0	30
CPQ2715-330MC	33 $\pm$ 20%	2.5(1.6)	2.6	30

**CPQ2718/PPQ2718 Electrical Characteristics**

Part Number	Inductance ( $\mu\text{H}$ ) ①	DCR max. ( $\text{m}\Omega$ ) ② (Typ.)	Saturation Current (A) ③	Temperature Rise Current(A) ④
CPQ2718-3R3MC	3.3 $\pm$ 20%	4.0(2.6)	92	28
CPQ2718-4R7MC	4.7 $\pm$ 20%	4.0(2.6)	61	28
CPQ2718-6R8MC	6.8 $\pm$ 20%	4.0(2.6)	45	28
CPQ2718-100MC	10 $\pm$ 20%	4.0(2.6)	31	28
CPQ2718-150MC	15 $\pm$ 20%	4.0(2.6)	21	28
CPQ2718-220MC	22 $\pm$ 20%	4.0(2.6)	14	28
CPQ2718-330MC	33 $\pm$ 20%	4.0(2.6)	8.5	28

**CPQ2720/PPQ2720 Electrical Characteristics**

Part Number	Inductance ( $\mu\text{H}$ ) ①	DCR max. ( $\text{m}\Omega$ ) ② (Typ.)	Saturation Current (A) ③	Temperature Rise Current(A) ④
CPQ2720-100MC	10 $\pm$ 20%	5.0(3.5)	41	28

## CPQ3218/PPQ3218 Electrical Characteristics

Part Number	Inductance ( $\mu\text{H}$ ) ①	DCR max. ( $\text{m}\Omega$ ) ② (Typ.)	Saturation Current (A) ③	Temperature Rise Current(A) ④
CPQ3218-3R3MC	3.3 $\pm$ 20%	1.0(0.6)	80	55
CPQ3218-6R0MC	6.0 $\pm$ 20%	2.5(1.5)	55	45

① Inductance tested at 100 KHz, 1 Vrms using an Agilent/HP 4192A or equivalent.

② DCR measured on a micro-ohmmeter.

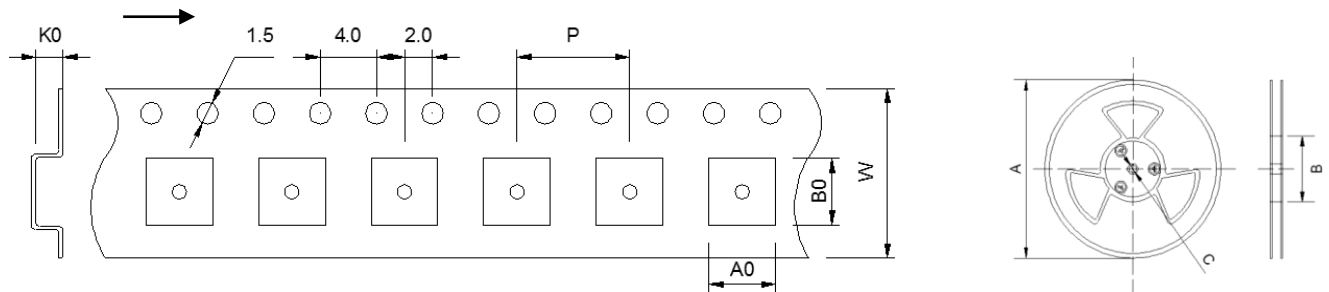
③ Saturation current: The DC current at which the inductance decreases by approximately 35% of initial value. ( $T_a=25^\circ\text{C}$ )

④ Temperature rise current: The DC current at which the temperature rise is  $\Delta t=50^\circ\text{C}$ (approximately). ( $T_a=25^\circ\text{C}$ )

**Note: All test data is referenced to 25°C ambient.**

## Packing: Dimensions for embossed tape &amp; reel with packing quantity /包装尺寸及数量

The force to tear off cover tape is 0.1-1.3N in the arrow direction.



Type	Tape Dimensions(mm)					Reel Dimensions(mm)			MPQ(Pcs/Reel) 最小包装数(个/盘)
	W	P	A0	B0	K0	A	B	C	
CPQ2012						330	100	13	
CPQ2014						330	100	13	
CPQ2016						330	100	13	
CPQ2712						330	100	13	
CPQ2715						330	100	13	
CPQ2718						330	100	13	
CPQ2720						330	100	13	
CPQ3218						330	100	13	

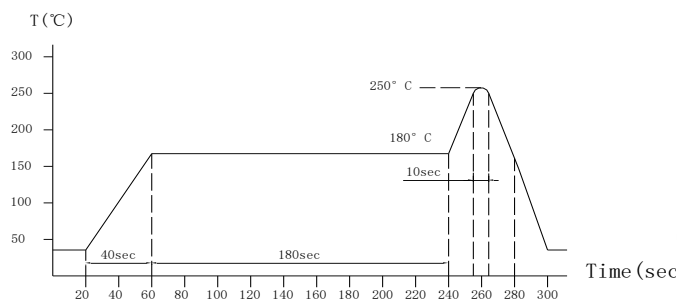
Dimensions without tolerance are reference. /无公差尺寸为参考尺寸。

## General Characteristics/一般特性

Operation Temperature Range /使用温度范围	-40~+125°C(Includes temperature when the coil is heated) / -40~+125°C(包含线圈自身发热)
Storage Conditions /保存条件(产品安装基板前)	To maintain the solderability of terminal electrodes: / 为了保持电极的可焊性, 请按以下保存条件存储: 1. Temperature and humidity conditions: 5~40°C and 30~70% RH; / 温度、湿度条件: 5~40°C、相对湿度 30~70%; 2. Recommended products should be used within 6 months form the time of delivery; / 产品应在交货后 6 个月内使用; 3. The products Should be stored in the complete package provided by the supplier; The packaging material should be kept where no chlorine or sulfur exists in the air; The packaging should be placed on the shelf. / 产品须存储在供方提供的完整的包装内; 产品包装应存放在空气中不含氯或硫的地方; 产品包装应放在货架上。
Transport Attentions /搬运注意事项	1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils; / 1. 产品搬运时应小心处理, 避免因出汗和皮肤油渍而造成损坏或污染; 2. The use of tweezers or vacuum pick up is strongly recommended for individual components; / 2. 强烈建议对单个部件使用镊子或真空吸嘴; 3. Bulk handling should ensure that abrasion and mechanical shock are minimized. / 3. 散货搬运应确保磨损和机械冲击最小化。
External Appearance/外观	On visual inspection, the coil has no external defects. / 目视检查时, 外观没有明显的缺陷。
Solderability Test/可焊性测试	The terminal shall be at least 90% covered with solder. Test condition: after fluxing, inductor shall be dipped in a melted solder bath at 245 ± 5°C for 5 Sec. / 电极应至少覆盖 90% 的焊料。测试条件: 电极涂上助焊剂后在 245±5°C 的熔化焊槽中浸泡 5 秒。
Humidity Characteristics /耐湿度特性	Inductance deviation within ±10%, after 96 hours in 90~95% relative humidity at 40±2°C and 1 hour drying under normal condition. / 温度在 40±2°C, 相对湿度在 90~95% 条件下存放 96 小时后取出, 用布擦干, 然后在常温常湿中放置 1 小时, 电感值变化率±10%以内。
Thermal shock test /冷热冲击特性	Inductance deviation within ±10%, after 20 cycles of -40°C for 30 minutes, +125°C for 30 minutes. Characteristics are measured after the ambient air exposure of 1 hour. / -40°C 放置 30 分钟后转换为+125°C 放置 30 分钟, 20 次循环, 然后在常温常湿中放置 1 小时, 电感值变化率±10%以内。
High temperature storage test /高温保存测试	Inductance deviation within ±10%, after 96 hours in +125°C±2°C characteristics are measured after ambient are exposure of 1 hour. / +125°C±2°C 放置 96 小时, 然后在常温常湿中放置 1 小时, 电感值变化率±10%以内。
Low temperature storage test /低温保存测试	Inductance deviation within ±10%, after 96 hours in -40°C±2°C characteristics are measured after ambient are exposure of 1 hour. / -40°C±2°C 放置 96 小时, 然后在常温常湿中放置 1 小时, 电感值变化率±10%以内。

## Recommended Reflow Conditions (Lead-free)

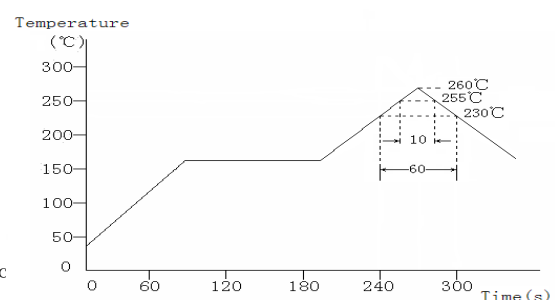
## /推荐回流焊条件(无铅)



The reflow condition recommended above is according to the machine used by our company. Big differences will arise as a result of the type of machine, reflow conditions, method, used etc. Hence, before setting up your reflow conditions, please confirm with the above. / 上面推荐的回流焊试验条件是根据本公司的回流焊设备测试结果得到。不同的试验设备、试验条件和试验方法及试验结果不同, 因此回流焊试验条件的设定需要仔细地确认。

## Reflow Soldering Heat Endurance

## /回流焊耐热



No mechanical and electrical defects are found after testing based on the above profile and keeping under the conditions of room temperature and humidity for 2 hours. / 在该条件下进行回流焊, 常温常湿条件下放置 2 个小时后, 无机械、电气特性缺陷发生。

Twice reflow test is acceptable with the test interval remaining 1 hour under the normal conditions. / 在常温常湿条件下, 间隔 1 小时可进行两次回流焊。The reflow test profile may vary with the testing instruments. / 回流焊曲线图会因设备的不同有所差异。