

製品規格書

SPECIFICATION FOR APPROVAL



產品編碼 P/N	PDPMAA series	測試設備 TEST INSTRUMENT	Chroma:3302 16502
產品系列 Series	一体插件电感	測試頻率 TEST FREQUENCY	100KHZ / 1V

客戶名稱 :  
 Customer :  
 客戶編碼 :  
 Customer P/N :  
 產品系列 : 一体插件电感  
 Series : DIP Molding Power Inductor  
 產品編碼 : PDPMAA series  
 Supply P/N :  
 發版號 : A2.0  
 Version :  
 承認日期 : 2022-11-17  
 Endorsement Date :  
 備註 :  
 Note :

譜羅德電子科技（深圳）有限公司 PROD Electronic Technology (Shenzhen) Co. LTD	
製作 APPROVED	Ben
審查 CHECKED	Yuki
確認 PREPARED	Peter

客戶承認 Customer Approval

客戶簽章



A2.0

# 修訂記錄

## REVISION RECORD



產品編碼 P/N	PDPMAA series	測試設備 TEST INSTRUMENT	Chroma:3302 16502
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Version	REVISION ITEM	BEFORE REVISION	AFTER REVISION	DATE
A2.0	First Version			2022-11-17



譜羅德電子科技（深圳）有限公司  
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產品編碼 P/N	PSPMAA201610~2213 Series	測試設備 TEST INSTRUMENT	Chroma 3302 16502
產品系列 Series	一体成型电感	測試頻率 TEST FREQUENCY	201610~252012: 1MHZ / 1V 0302~2213: 100KHZ / 1V

## 产品特点

## Features

- ☐ 更低的直流阻抗 (DCR) , 更高的额定电流  
Low DCR High rated current
- ☐ 一体式结构有效避免电感啸叫  
No gap structure to avoid inductor noise
- ☐ 闭磁结构有效降低电磁干扰  
Closed magnetic circuit design reduces leakage flux and Electro Magnetic Interference (EMI)
- ☐ 可适用于严苛的使用环境  
Can be used in harsh environments



## 編碼解釋

## Code interpretation

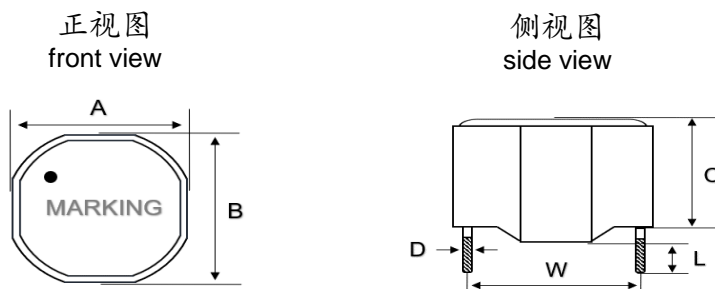
<b>P D P M A A</b>	<b>1 7 1 2</b>	-	<b>1 0 1</b>	-	<b>M</b>	-	<b>P</b>
<u>类别码</u>	<u>尺寸系列</u>		<u>系列码</u>		<u>公差</u>		<u>谱罗德标识</u>
Category code	Dimension		Inductance		Tolerance		PROD

- ◎ 规格参数基於环境温度25℃取得  
All test Data is referenced to 25℃ ambient
- ◎ 电感工作环境温度：-40℃ ~ 125℃  
Operating temperature range -40 °C to +125 °C
- ◎ 加载温升电流 (I<sub>rms</sub>) 會使电感温度上升大約 40℃ (电感初始温度+上升温度=电感最终温度)  
Typical I<sub>rms</sub> would cause an approximately ΔT of 40℃
- ◎ 加载饱和电流 (ISAT) 會使感量下降大約30%  
Typical ISAT would cause L<sub>o</sub> to drop approximately 30%.
- ◎ 请从温升电流 (IRMS) 和饱和电流 (ISAT) 中选取一个最小值作为额定电流  
Choose a minimum of IRMS and ISAT as the rated current
- ◎ 務必考慮最終的產品設計，元器件佈局，線路板走線，以及使用環境過程中，电感最终温度不得超過125℃  
The operating temperature of inductance do not exceed 125℃
- ◎ 使用电感時，請查閱第10頁注意事項  
The announcements is on page 11



產品編碼 P/N	PDPMAA series	測試設備 TEST INSTRUMENT	Chroma:3302 16502
產品系列 Series	一体插件电感	測試頻率 TEST FREQUENCY	100KHZ / 1V

### 封裝尺寸 Dimension (mm)



系列	封裝尺寸 Dimension						MPQ
Series	A	B	C	D	L	W	pcs/托盘
1712	17.8 Max	17.8 Max	12 Max	见下列电气参数“D”	3.0 Min	见下列电气参数“W”	120

### 編碼解釋

Code interpretation

<b>PDPMAA</b>	<b>1712</b>	<b>100</b>	<b>M</b>	<b>P</b>
類別碼	尺寸系列	感值	精度	帶PROD印字
Category code	Dimension	Inductance	Tolerance	PROD

### 電氣參數

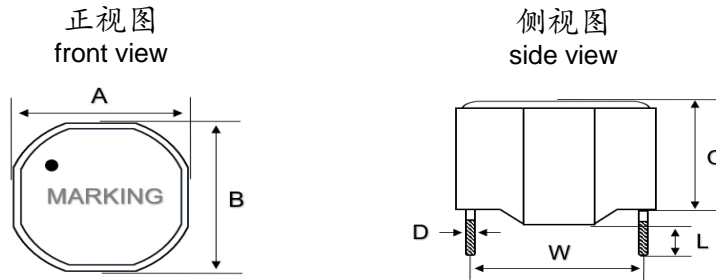
Electrical Characteristics

產品編碼 P/N	@ 25 °C Ambient Temperature						
	感值	精度	DCR	温升电流	饱和电流	D	W
	Inductance	Tolerance	mΩ	IRMS	ISAT	mm	mm
	μH	±	Max	ΔT≈40°C	L0drop≈30%	±0.1	±0.5
PDPMAA1712-1R0MP	1	20%	1.2	55	56	1.8	13
PDPMAA1712-1R5MP	1.5	20%	1.6	50	51	1.8	13
PDPMAA1712-2R2MP	2.2	20%	2.2	45	46	1.5	13
PDPMAA1712-3R3MP	3.3	20%	2.5	37	40	1.5	13
PDPMAA1712-4R7MP	4.7	20%	3.3	32	33	1.5	13
PDPMAA1712-5R6MP	5.6	20%	3.7	29	32	1.5	13
PDPMAA1712-6R8MP	6.8	20%	4.5	27	29	1.5	13
PDPMAA1712-100MP	10	20%	5.5	24	25	1.4	13
PDPMAA1712-150MP	15	20%	10	16	23	1.1	13
PDPMAA1712-220MP	22	20%	15	13	19	1.1	13
PDPMAA1712-330MP	33	20%	25	10	16	0.8	13
PDPMAA1712-470MP	47	20%	32	8	14	0.8	13
PDPMAA1712-680MP	68	20%	50	6.5	12	0.65	13
PDPMAA1712-101MP	100	20%	85	5	10	0.6	13



產品編碼 P/N	PDPMAA series	測試設備 TEST INSTRUMENT	Chroma:3302 16502
產品系列 Series	一体插件电感	測試頻率 TEST FREQUENCY	100KHZ / 1V

### 封裝尺寸 Dimension (mm)



系列	封裝尺寸 Dimension						MPQ
Series	A	B	C	D	L	W	pcs/托盤
2212	22.5 Max	22.5 Max	12 Max	见下列电气参数“D”	3.0 Min	见下列电气参数“D”	90

### 編碼解釋

Code interpretation

<b>PDPMAA</b>	<b>2212</b>	<b>100</b>	<b>M</b>	<b>P</b>
類別碼	尺寸系列	感值	精度	帶PROD印字
Category code	Dimension	Inductance	Tolerance	PROD

### 電氣參數

Electrical Characteristics

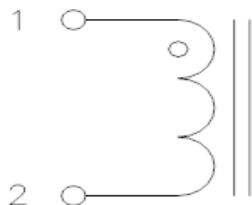
產品編碼 P/N	@ 25 °C Ambient Temperature						
	感值 Inductance	精度 Tolerance	DCR	温升电流 IRMS	饱和电流 ISAT	D	W
	μH	±	mΩ Max	A ΔT≈40°C	A L0drop≈30%	mm ±0.1	mm ±0.5
PDPMAA2212-1R0MP	1	20%	0.88	65	75	1.8	14.5
PDPMAA2212-2R2MP	2.2	20%	1.25	54	62	1.7	14.5
PDPMAA2212-3R3MP	3.3	20%	1.7	45	51	1.7	14.5
PDPMAA2212-4R7MP	4.7	20%	2.3	39	40	1.7	14.5
PDPMAA2212-5R6MP	5.6	20%	2.3	39	36	1.7	14.5
PDPMAA2212-100MP	10	20%	4.7	28.5	28	1.5	14.5
PDPMAA2212-150MP	15	20%	8	20	25	1.2	14.5
PDPMAA2212-220MP	22	20%	8.6	17	19	1.1	14.5
PDPMAA2212-330MP	33	20%	18	13.5	19	1	14.5
PDPMAA2212-470MP	47	20%	26	11	16.5	0.85	14.5
PDPMAA2212-680MP	68	20%	40	8.5	16	0.75	14.5
PDPMAA2212-101MP	100	20%	60	6.5	14	0.7	14.5



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### 電路結構

#### Connections



- ◎ 电感内置两组线圈  
Inductor Contents Two (2) Set(s) of Coil

### 印字方式

#### Marking

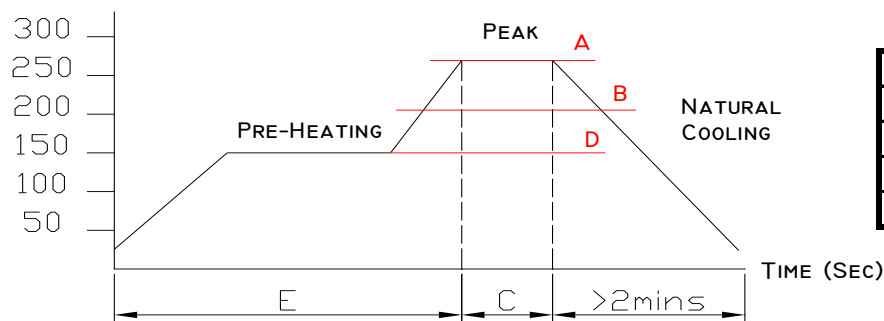


- ◎ 电感激光刻字：“PROD+感值代码”  
Marking:Laser Inscription PROD+ Inductance code

### 焊接溫度（推荐）

#### Recommended Soldering Temperature Graph

TEMPERATURE (°C)



A	260°C
B	230°C
C	10 Sec
D	150°C
E	60~240 Sec



產品編碼 P/N	PDPMAA2212-MP	測試設備 TEST INSTRUMENT	Chroma:3302 16502
產品系列 Series	插件一体成型电感	測試頻率 TEST FREQUENCY	100KHZ / 1V

## 机械可靠性测试

## Mechanical Reliability

實驗名稱 ITEM	試驗要求 Specification & Requirement	試驗方法 Method Used
可焊性實驗 Solderability	The surface of terminal/pin tested shall be covered with new solder by 95%	Solder heat proof: Preheating: 180 ±10°C 90 seconds Soldering: 255 ±5°C for 3 ±1 sec
機械衝擊 Shock	Inductance change within ± 5% Without mechanical damage	Drop down with 981m/s <sup>2</sup> (100G) shock Attitude upon a rubber block method shock testing machinem, 3 tests.
振動實驗 Vibration	Inductance change within ± 5% Without mechanical damage	Vibration frequency: 10Hz to 55Hz to 10Hz 60 seconds cycle Vibration time: 2 hours

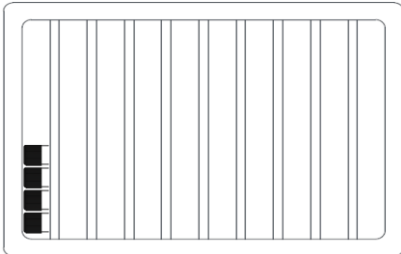
## 老化测试

## Aging Reliability

實驗名稱 ITEM	試驗要求 Specification & Requirement	試驗方法 Method Used
冷熱衝擊 Thermal Shock	Inductance change within ± 5% Without mechanical damage	-40°C, (30 mins) -> room temp. (5 mins) -> 125°C, (30 mins) -> room temp. (5 mins) 100 cycles
耐熱性 Heat Resistance	Inductance change within ± 5% Without mechanical damage	Apply IDC current @ 85°C ambient Duration: 1000 hrs
耐濕性 Humidity Resistance	Inductance change within ± 5% Without mechanical damage	Apply IDC current @ 60°C ambient Humidity: 90~95% Duration: 1000 hrs
低溫存儲實驗 Low Temp. Storing	Inductance change within ± 5% Without mechanical damage	Storing Temp. -40 ±2 °C for total 1,000 +4/-0 hours
高溫存儲實驗 High Temp. Storing	Inductance change within ± 5% Without mechanical damage	Storing Temp. 125 ±2 °C for total 1,000 +4/-0 hours

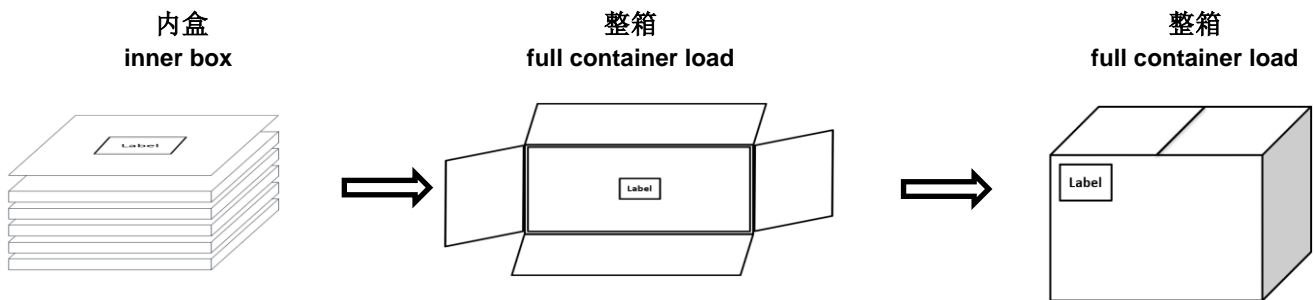
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内盒包装  
MPQ packaging



使用吸塑盒包装，吸塑盒上下各包一片纸板  
Packaging in plastic trays, Place a piece of cardboard on top and bottom of the plastic tray

外箱  
full container load



每箱内装8小盒，每箱数量960pcs  
8 little boxes fill a whole case, 960pcs/full container load

包装数量  
Package Quantity

系列 Series	1712	2212	3222
最小包装 MPQ	120	90	50
整箱包装 FCL	960	540	150







## 注意事項

### 使用本產品時，請注意以下事項

- ◎ 規格參數基於環境溫度25℃取得
- ◎ 產品保存期限為12個月，保存條件：溫度5~40℃，濕度10~75%RH以內，超過保存期限可能會使產品端子電極發生氧化。
- ◎ 請勿在極端環境下使用和保存（高鹽，強酸，強鹼，強輻射等）。
- ◎ 產品焊接前，請進行預熱；預熱溫度與焊接溫度之間溫差建議控制在150℃以內。
- ◎ 產品焊接後需重新拆卸焊接修正時，請遵循規格書規定的條件範圍；過高的加熱溫度以及反復的拆卸可能會導致產品失效。
- ◎ 產品請勿接觸清洗劑，酒精等液體，這會侵蝕產品本體，從而導致產品失效。
- ◎ 產品焊接到線路板後，請注意不可因線路板整體變形或局部變形而施加給電感剩餘應力，這可能會導致電感發生破裂，脫落，以致失效。
- ◎ 產品通電後溫度會隨電流的增大而上升，設計時請務必考慮留有餘量。
- ◎ 過高的靜電會對產品產生永久性損害，請注意靜電防護。
- ◎ 產品通電過程請勿觸摸產品任何部位，防止觸電。
- ◎ 本產品作為磁性產品，設計時請務必考慮周邊元器件與本產品可能產生的相互影響。
- ◎ 本產品適用於一般電子設備，如：AV設備，通信設備，家電產品，娛樂設備，電腦設備，個人設備，辦公設備，計測設備，工業機器人等。且該一般電子設備需在常規的操作和使用方法環境下使用。  
對於需要高度安全性和可靠性的，或者因本產品失效造成設備故障，誤操作，運轉不良等危及到人的生命身體及財產安全，以及對社會產生較大不良影響的特殊用途，設計使用前務必同本公司溝通，設計使用者如在未取得我司書面同意狀況下使用造成任何後果，我司不予承擔。特殊用途包含但不限定如下清單：

- |                       |                 |
|-----------------------|-----------------|
| 1 軍用設備                | 8 關係到國防安全的設備    |
| 2 運輸設備（汽車，軌道交通產品，船舶等） | 9 其他被認定為特殊用途的設備 |
| 3 航空，航太設備             |                 |
| 4 發電控制設備              |                 |
| 5 核動力相關設備             |                 |
| 6 爆炸引燃控制設備            |                 |
| 7 交通控制設備              |                 |





## ANNOUNCEMENTS

Please read this before using the product.

- © All test Data is referenced to 25°C ambient
- © The product storage life is 12 months, Storage Temperature: TEMP.5~40°C; RH10%~75%. Please use the product within the warranty period
- © Do not use or store in locations where there are conditions such as gas corrosion (salt, acid, alkali, radiation etc.) .
- © Before soldering, be sure to preheat components:The preheating temperature should be set so that The temperature difference between the solder temperature and chip temperature does not exceed 150° C.
- © Soldering corrections after mounting should be within the range of the conditions determined in the specifications.If overheated, a short circuit, performance deterioration, or lifespan shortening may occur. Repeated disassembly may invalidate the inductance
- © The cleaning agent can not be used for these products. This may corrode the inductor
- © When embedding a printed circuit board where a chip is mounted to a set, be sure that residual stress is not given to the chip due to the overall distortion of the printed circuit board and partial distortion such as at screw tightening portions.
- © Self heating (Rated Current or Irms) occurs when the power is turned ON, so the tolerance should be sufficient for the set thermal design.
- © Too high static electricity will cause permanent damage to the product, please pay attention to electrostatic protection.
- © As a magnetic product, the design must consider the possible interaction between peripheral components and the product.
- © The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.

The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.

If you intend to use the products in the applications listed below or if you have special requirements exceeding the range or conditions set forth in the each catalog, please contact PROD. Otherwise, PROD will not bear the serious consequences caused by product quality problems

- |  |   |
|--|---|
| 1 Military equipment                                   | 6 Explosive ignition control equipment                                    |
| 2 Transportation equipment (cars, trains, ships, etc.) | 7 Transportation control equipment  |
| 3 Aerospace/aviation equipment                         | 8 Medical equipment   |
| 4 Power-generation control equipment                   | 9 Other applications that are not considered general-purpose applications |
| 5 Atomic energy-related equipment                      |   |

Page 11 / 11



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