

產品編碼 P/N	PSPMAA0603-4R7M-ANF	測試設備 TEST INSTRUMENT	Zentech-3305 / Zentech502BC
產品系列 Series	貼片電感 SMD INDUCTOR	測試頻率 TEST FREQUENCY	100KHZ / 1.0V

客戶名稱

Customer

:

客戶編碼

Customer P/N

:

產品系列

Series

:

貼片電感

SMD INDUCTOR

產品編碼

Supply P/N

:

PSPMAA0603-4R7M-ANF

發版號

Version

:

A2.0

承認日期

Endorsement Date

:

2017-4-19

備註

Note

:

譜羅德電子科技（深圳）有限公司

PuLuoDe Electronic Technology (Shenzhen) Co. LTD

製作

APPROVED

Ben

審查

CHECKED

Yuki

確認

PREPARED

Peter

客戶承認

Customer Approval

* 煩請貴司在正式订单下达前确认回签本承认书，否则敝司默认贵司认可本承认书内的参数与条款，并以此参数生产交货

Please confirm and sign this acknowledgement letter before placing the formal order, otherwise PROD will acquiesce that your company recognizes the parameters and terms in this acknowledgement letter, and will produce and deliver according to these parameters.

客戶簽章



修訂記錄

REVISION RECORD



產品編碼 P/N	PSPMAA0603-4R7M-ANF	測試設備 TEST INSTRUMENT	Zentech-3305 / Zentech502BC
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Version	REVISION ITEM	BEFORE REVISION	AFTER REVISION	DATE
A1.0	First Version			2016-1-13
A2.0	First Version	PSPAE-0603-4R7M	PSPMAA0603-4R7M-ANF	2017-4-19

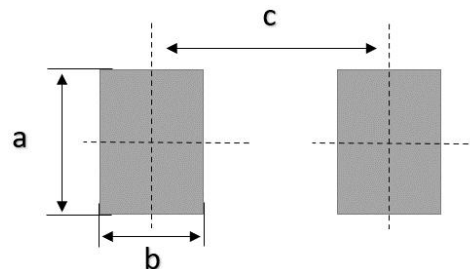
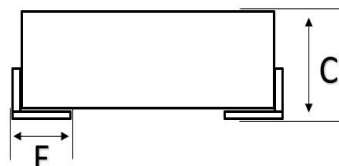
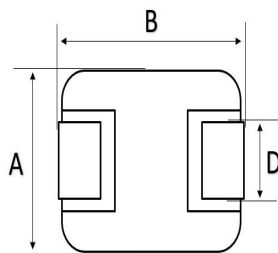


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封裝尺寸

Dimension

(mm)



系列	封裝尺寸 Dimension					焊盤尺寸 Land Pattern		
Series	A	B	C	D	E	a	b	c
0603	6.6±0.3	7.1±0.3	3.0MAX	3.0±0.5	1.6±0.5	3.5Typ	2.1Typ	5.8Typ

編碼解釋

Code interpretation

PSPMAA	-	0603	-	4R7	-	M	-	ANF
類別碼		尺寸系列		感值		精度		標識碼
Serial Codes		Size		Inductance Code		TOLERANCE		Description

電氣參數

Electrical Characteristics

產品編碼 P/N	@ 25 °C Ambient Temperature					
	感值	精度	DCR		溫升電流 (IRMS)	飽和電流 (ISAT)
	Inductance	Tolerance	mΩ		A	A
	μH	±	Typ	Max	ΔT≈40℃	L0 drop≈30%
PSPMAA0603-4R7M-ANF	4.70	20%	37.00	40.00	5.5	10.0

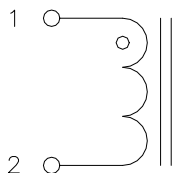
- ◎ 規格參數基於環境溫度25℃取得
All test Data is referenced to 25℃ ambient
- ◎ 電感工作環境溫度：-40℃ ~ 125℃
Operating temperature range -40 ° C to +125 ° C
- ◎ 加載溫升電流（Irms）會使電感溫度上升大約 40℃（電感初始溫度+上升溫度=電感最終溫度）
Typical Irms would cause an approximately ΔT of 40℃
- ◎ 加載飽和電流（ISAT）會使感量下降大約30%
Typical ISAT would cause Lo to drop approximately 30%.
- ◎ 額定電流取值溫升電流與飽和電流二者最小值
The rated current is determined by the minimum value between IRMS and ISAT
- ◎ 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，電感最終溫度不得超過125℃
The operating temperature of inductance do not exceed 125℃
- ◎ 參考產品開發設計實測尺寸，感值，DCR等數據，請參考規格書第7頁
The Dimension, Inductance, DCR test data is on page 7
- ◎ 使用電感時，請查閱第8頁注意事項
The announcements is on page 9



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電路結構

Connections



表面印字

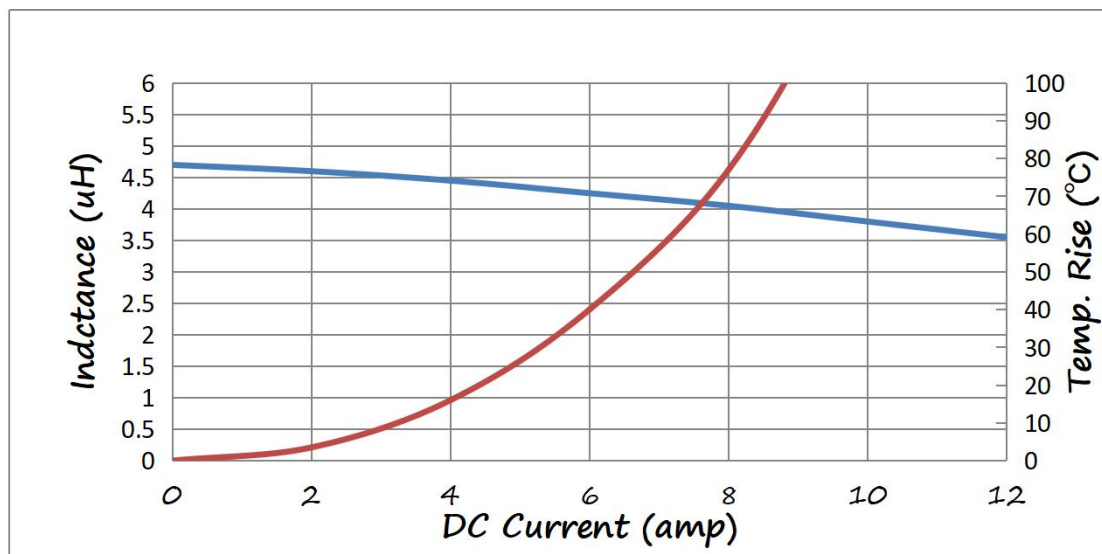
MARKING



© 電感內置一組線圈 Inductor Contents ONE (1) Set(s) of Coil

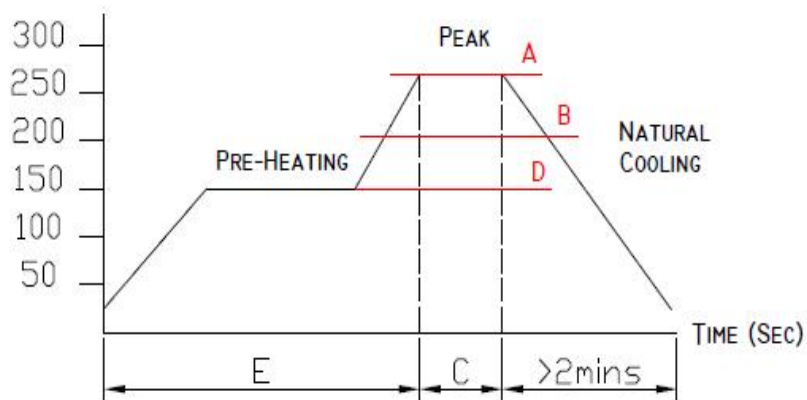
特性曲線

Performance Curves



焊接溫度（推荐）

Recommended Soldering Temperature Graph



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



信賴性實驗

RELIABILITY TEST



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機械可靠性測試

Mechanical Reliability

測試項目	測試條件	測試手法
Solderability 引腳可焊性	The surface of terminal/pin tested shall be covered with new solder by 95% 產品引腳焊錫面=>上錫面積涵蓋95%以上	Solder heat proof: Preheating: 180 ±10℃ 90 seconds Soldering: 255 ±5℃ for 3 ±1 sec
Shock 落下衝擊測試	Inductance change within ± 5% Without mechanical damage 外觀無異常，電感值變化在5%以內	Drop down with 981m/s2 (100G) shock Attitude upon a rubber block method shock testing machinem, 3 tests.
Vibration 振動測試	Inductance change within ± 5% Without mechanical damage 外觀無異常，電感值變化在5%以內	Vibration frequency: 10Hz to 55Hz to 10Hz 60 seconds cycle Vibration time: 2 hours

老化測試

ENDURANCE RELIABILITY

測試項目	測試條件	測試手法
Thermal Shock 冷熱循環測試	Inductance change within ± 5% Without mechanical damage 外觀無異常，電感值變化在5%以內	-25℃, (30 mins) -> room temp. (5 mins) -> 125℃, (30 mins) -> room temp. (5 mins) 100 cycles
Heat Resistance 耐溫測試	Inductance change within ± 5% Without mechanical damage 外觀無異常，電感值變化在5%以內	Apply IDC current @ 85℃ ambient Duration: 1000 hrs
Humidity Resistance 耐濕測試	Inductance change within ± 5% Without mechanical damage 外觀無異常，電感值變化在5%以內	Apply IDC current @ 60℃ ambient Humidity: 90~95% Duration: 1000 hrs
Low Temp. Storing 低溫儲藏測試	Inductance change within ± 5% Without mechanical damage 外觀無異常，電感值變化在5%以內	Storing Temp. -25 ±2 ℃ for total 1,000 +4/-0 hours
High Temp. Storing 高溫儲藏測試	Inductance change within ± 5% Without mechanical damage 外觀無異常，電感值變化在5%以內	Storing Temp. 125 ±2 ℃ for total 1,000 +4/-0 hours



包裝方式

PACKING FOR SMD

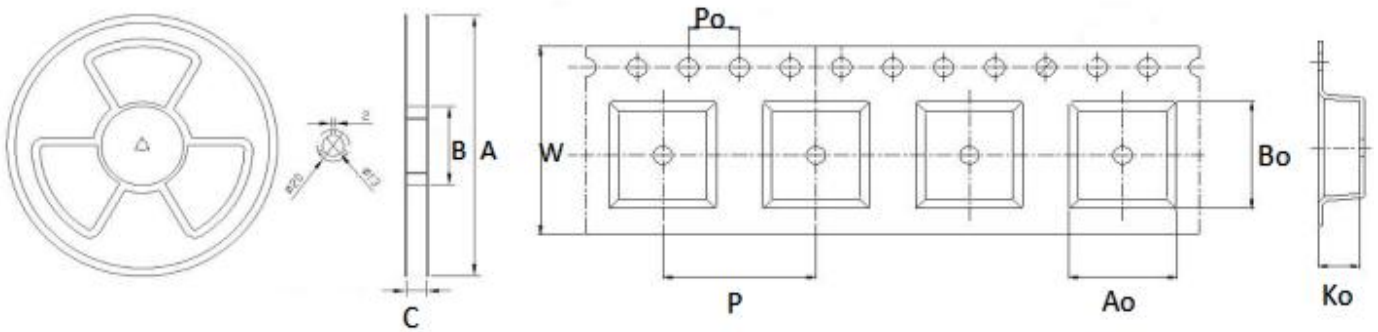


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載帶卷盤尺寸 : (mm)

Packing Dimension

系列 Series	A	B	C	W	P	Po	Ao	Bo	Ko
0603	330	100	17	16	12	4	6.9 Typ	7.6 Typ	3.2 Typ

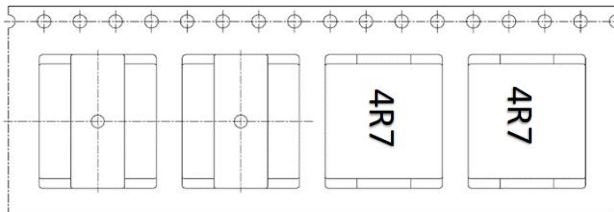


載帶內產品排列方式:

Inductance Packing Method

首字對孔

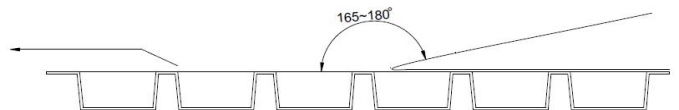
The first mark is on the side of the gear hole



載帶剝離力:

Typical Pulling Force

20~120 gf

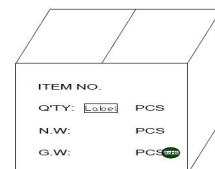
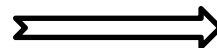
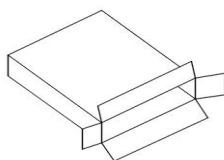
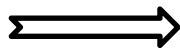
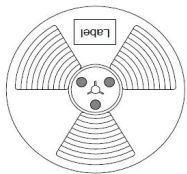


Package Quantity

1000pcs/卷盤
1000pcs/Reel

3000pcs/每盒
3000pcs/ Middle box

9000pcs/每箱
9000pcs/ Outer box



© 實際出貨過程，依據客戶需求狀況的不同，包裝數量會有變化，最終的包裝數量請參照實際出貨包裝

In the actual delivery process, the package quantity will change according to the different customer demands. Please refer to the actual shipment quantity for the final package quantity



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測試數據

Test Date

序號	尺寸測試數據 Dimension Test Date					特性測試數據 Characteristics Test Date			
	A	B	C	D	E	DCR	Lo	ISAT	
	mm	mm	mm	mm	mm	mΩ Max	μH±20%	10.0	A
	6.6±0.3	7.1±0.3	3.0MAX	3.0±0.5	1.6±0.5	40	4.70	L0 drop≈30%	
1	6.57	7.08	2.82	2.95	1.68	38.1	4.47	PASS	
2	6.59	7.15	2.86	2.96	1.61	38.5	4.52	PASS	
3	6.62	7.18	2.88	2.98	1.54	38.6	4.81	PASS	
4	6.58	7.15	2.85	2.99	1.59	38.6	4.66	PASS	
5	6.57	7.04	2.87	2.97	1.59	38.5	4.45	PASS	
6	6.63	7.18	2.85	2.95	1.56	38.6	4.61	PASS	
7	6.56	7.16	2.83	2.96	1.60	38.8	4.65	PASS	
8	6.59	7.09	2.89	2.95	1.51	39.1	4.88	PASS	
9	6.59	7.15	2.85	2.96	1.53	38.7	4.92	PASS	
10	6.58	7.19	2.86	2.87	1.57	39.2	4.71	PASS	
一 平均值	6.59	7.14	2.86	2.95	1.58	38.67	4.67		
R	0.07	0.15	0.07	0.12	0.17	1.10	0.47		

◎ 所有测试数据基于环境温度25℃取得

All test Data is referenced to 25℃ ambient





注意事項

使用本產品時，請注意以下事項

- ◎ 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
 - 2 運輸設備（汽車，軌道交通產品，船舶等）
 - 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
 - 8 關係到國防安全的設備
 - 9 其他被認定為特殊用途的設備





ANNOUNCEMENTS

Please read this before using the product.

- © 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

8 Medical equipment

2 Transportation equipment (cars, trains, ships, etc.)

9 Other applications that are not considered general-purpose applications

3 Aerospace/aviation equipment

4 Power-generation control equipment

5 Atomic energy-related equipment

6 Explosive ignition control equipment

7 Transportation control equipment

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