

製品規格書

SPECIFICATION FOR APPROVAL



產品編碼 P/N	PSPMAC1040-2R2M-ITF	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

PSPMAC1040-2R2M-ITF

發版號

Version

A2.0

承認日期

Endorsement Date

2017-4-12

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

* 煩請貴司在正式訂單下達前確認回簽本承認書，否則敝司默認貴司認可本承認書內的參數與條款，並以此參數生產交貨

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.

客戶承認

Customer Approval

客戶簽章



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Version	REVISION ITEM	BEFORE REVISION	AFTER REVISION	DATE
A1.0	First Version			2016-2-11
A2.0	Second Version	PSPAC-1040-2R2M	PSPMAC1040-2R2M-ITF	2017-4-12

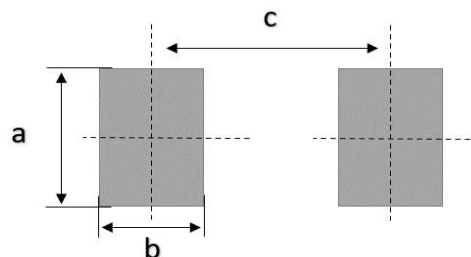
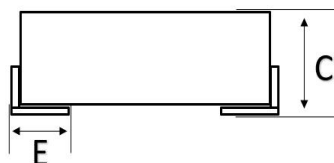
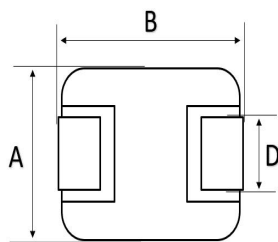


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封裝尺寸

Dimension

(mm)



系列	封裝尺寸 Dimension					焊盤尺寸 Land Pattern		
Series	A	B	C	D	E	a	b	c
1040	10.0±0.5	11.0±0.5	4.0MAX	3.0±0.5	2.0 ± 0.5	4.0 Typ	3.5Typ	9.5Typ

編碼解釋

Code interpretation

PSPMAC	-	1040	-	XXX	-	M	-	ITF
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 Temperture					
	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%
PSPMAC1040-2R2M-ITF	2.20	20%	6.6	8.3	12.5	25.0

◎ 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 8



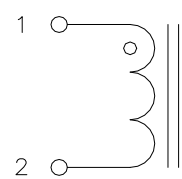
特性
CHARACTERISTICS



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電路結構

Connections



◎ 電感內置一組線圈

Inductor Contents ONE (1) Set(s) of Coil

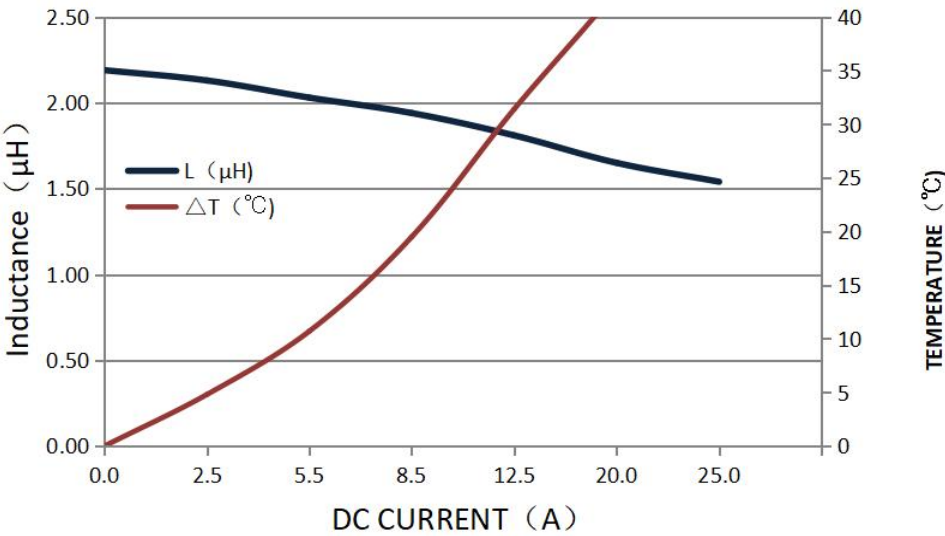
表面印字

MARKING



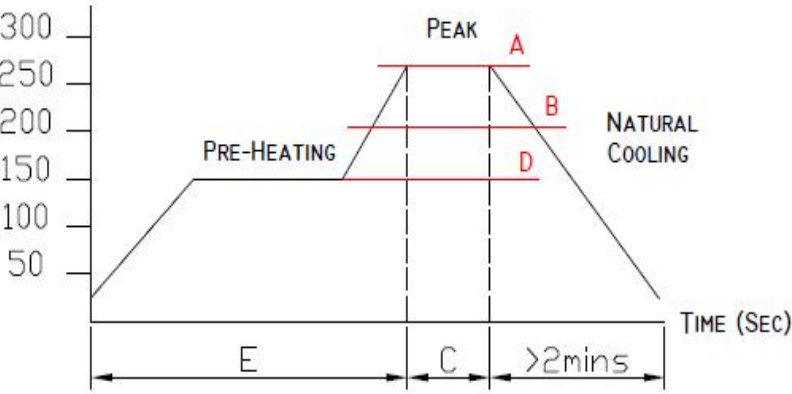
特性曲線

Performance Curves



焊接溫度（推荐）

Recommended Soldering Temperature Graph



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



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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/s ² (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

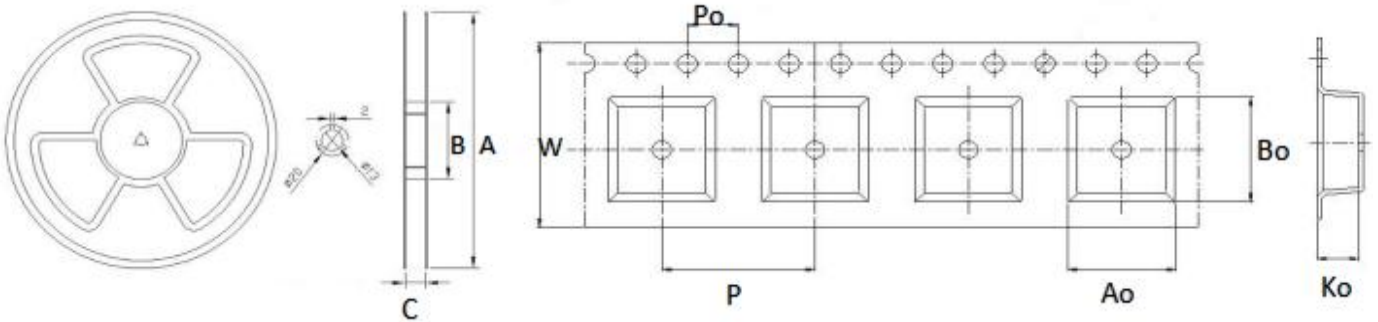


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載帶卷盤尺寸 : (mm)

Packing Dimension

系列 Series	A	B	C	W	P	Po	Ao	Bo	Ko
1040	330	100	25	24	16	4	11 Typ	12.6 Typ	4.2 Typ

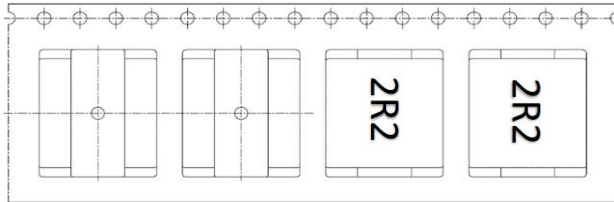


載帶內產品排列方式:

Inductance Packing Method

首字對孔

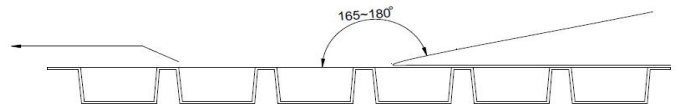
The first mark is on the side of the gear hole



載帶剝離力:

Typical Pulling Force

20~120 gf



Package Quantity

800pcs/卷盤

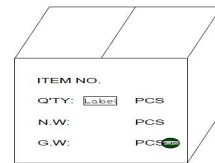
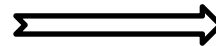
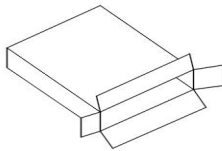
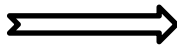
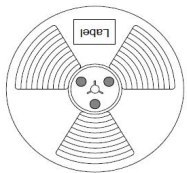
800pcs/Reel

1600pcs/每盒

1600pcs/ Middle box

4800pcs/每箱

4800pcs/ 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%	25.0	A
	10.0±0.5	11.0±0.5	4.0MAX	3.0±0.5	2.0 ± 0.5	8.3	2.20	L0 drop≈30%	
1	10.17	11.15	3.89	3.03	2.38	6.40	2.21	PASS	
2	10.21	11.23	3.92	3.01	2.36	6.30	2.23	PASS	
3	10.16	11.18	3.83	3.04	2.37	6.20	2.13	PASS	
4	10.13	11.16	3.85	3.01	2.36	6.40	2.16	PASS	
5	10.19	11.23	3.87	3.03	2.34	6.30	2.15	PASS	
6	10.23	11.21	3.93	3.01	2.36	6.20	2.14	PASS	
7	10.18	11.23	3.87	3.03	2.35	6.30	2.13	PASS	
8	10.20	11.18	3.89	3.01	2.34	6.30	2.15	PASS	
9	10.23	11.21	3.92	3.02	2.36	6.10	2.16	PASS	
10	10.19	11.23	3.87	3.03	2.34	6.20	2.15	PASS	
— 平均值	10.19	11.20	3.88	3.02	2.36	6.27	2.16		
R	0.10	0.08	0.10	0.03	0.04	0.30	0.10		

◎ 所有测试数据基于环境温度25℃取得

All test Data is referenced to 25℃ ambient





注意事项

使用本产品时，请注意以下事项

- ◎ 产品保存期限为12个月，保存条件：温度5~40℃，湿度10~75%RH以内，超过保存期限可能会使元器件电极发生氧化，存储标准可参照：IEC_61760-2-2021
This components storage life is 12 months, Storage Temperature: TEMP.5~40℃; RH10~75%. Please use this components within the warranty period. refer standard to: IEC_61760-2-2021
- ◎ 请勿在极端环境下使用和保存（高盐，强酸，强碱，强辐射等）。
Do not use this component in special environments, such as high salt content, strong acid, strong alkali, strong corrosion and other special environments.
- ◎ 元器件焊接前,请进行预热,预热与焊接温度之间温差建议控制在150℃以内;焊接标准参考：EN61760-1:2006
Please preheat the product before welding; it is recommended to control the preheating temperature and welding temperature within 150℃. refer standard to: EN61760-1:2006
- ◎ 元器件焊接后需重新拆卸焊接修正时，请遵循规格书规定的条件范围；过高的加热温度以及反复的拆卸可能会导致元器件失效。
When repairing this component, the temperature used for disassembly should not exceed the datasheet limit and do not disassemble it frequently to prevent damage to the component.
- ◎ 请勿用清洗剂、丙酮等腐蚀性液体接触该元器件，这可能会侵蚀元器件本体以至于失效。
Do not use acetone or other corrosive liquids to contact this component or it will cause it to fail.
- ◎ 元器件焊接到线路板后，请注意不可因线路板整体变形或局部变形而施加给电感剩余应力，这可能会导致元器件脱落、破损失效。
When this component is soldered to the circuit board, you need to pay attention to the stress applied to it by the PCB, which may cause it to fall off or damaged fail.
- ◎ 元器件通电后温度会随电流的增大而上升，设计时请务必考虑留有余量。
Self heating (Rated Current or Irms) occurs when the power is turned ON, so the tolerance should be sufficient for the set thermal design.
- ◎ 过高的静电会损坏该元器件，请注意静电防护。
Too high static electricity will cause permanent damage to the product, please pay attention to electrostatic protection.
- ◎ 本元器件作为磁性产品，设计时请务必考虑周边元器件与本产品可能产生的耦合效应影响。
This magnetic component needs to be considered for coupling effects in the application.
- ◎ 谱罗德并不能完全掌握或熟悉客户的特定应用以及要求，贵司有责任和义务验证此元器件以及元器件规格书中的描述是否满足于贵司的设计要求；需要指出是：即使按照现有的技术标准操作，该元器件依然有几率在典型寿命结束前发生故障，谱罗德强烈建议贵司对于该元器件在一些典型的严苛应用中，例如安规产品，工业产品、医疗产品、车载产品、航空/航天等产品应用，对于该元器件可能存在的失效情况做适当的冗余设计，以此避免该元器件在失效时造成严重后果；特别提醒：对于特定的应用对象谱罗德强烈要求贵司同谱罗德取得书面的许可，否则谱罗德不予承担元器件失效带来的任何责任，特定对象包括且不限于：车用，航空航天，安规产品，军用以及贵司对元器件有严苛要求的产品。

PROD cannot fully understand and be familiar with customers' specific applications and requirements. Your company has the responsibility and obligation to verify whether the components and the description in the component specification meet your design requirements. Special reminder: Even if operated in accordance with existing technical standards, this component still has a chance of failure before the end of its typical life. PROD strongly recommends that your company make appropriate redundant designs for possible failure situations of this component in some typical harsh applications, such as safety products, industrial products, medical products, automotive products, aviation/aerospace products, etc., so as to avoid serious consequences when the component fails.

PROD Requirements: For specific application item, PROD strongly requires your (or company) to obtain written permission from PROD, otherwise PROD will not bear any responsibility for component failure. Specific item list include but are not limited to: automotive, aerospace, safety products, military and products that your company has strict requirements on components.

