

產品編碼 P/N	PCAQ4520series	測試設備 TEST INSTRUMENT	Keysight:E4991B Chroma:16502 3302
產品系列 Series	贴片共模电感	測試頻率 TEST FREQUENCY	100MHZ / 0.1V

客戶名稱  
Customer

:

客戶編碼  
Customer P/N

:

產品系列  
Series

:

贴片共模电感  
Common mode choke

產品編碼  
Supply P/N

:

PCAQ4520series

發版號  
Version

:

A2.1

承認日期  
Endorsement Date

:

2021-10-26

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

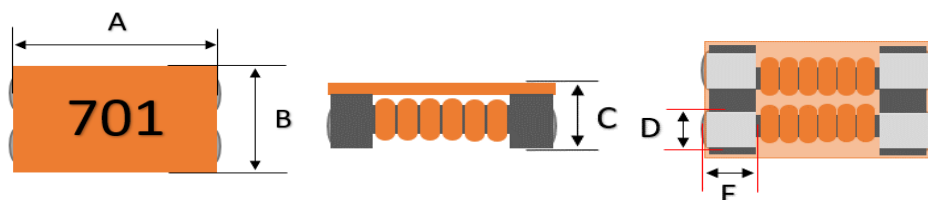
Customer Approval

客戶簽章

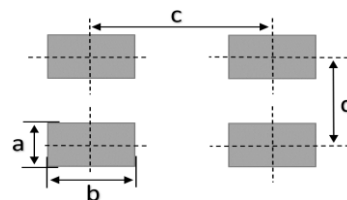


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封裝尺寸  
Dimension (mm)



推薦的焊盤尺寸  
Recommened Land Pattern



4520	封裝尺寸 Dimension					焊盤尺寸 Land Pattern			
	A	B	C	D	E	a	b	c	d
	4.75±0.5	4.5±0.5	2.0MAX	0.8 Typ	1.0 Typ	1.3	1.5	3.5	2.0

### 編碼解釋

Code interpretation

<b>PCAQ</b>	<b>4520</b>	<b>MB</b>	-	<b>231</b>
類別碼	尺寸系列	系列碼		阻抗值
Category code	Dimension	Series Code		Impedance

### 電氣參數

Electrical Characteristics

產品編碼 P/N	@ 25 °C Ambient Temperture					
	阻抗值 (Z)		DCR	絕緣性 (IR)	額定電流 (Rated Current)	額定電壓 (Rated Voltage)
	Ω		mΩ	MΩ	mA	V
	Min	Typ	Max	Min	Max	Max
PCAQ4520MB-900	30	90	35	10	3200	50
PCAQ4520MB-151	80	150	38	10	3100	50
PCAQ4520MB-231	180	230	39	10	3000	50
PCAQ4520MB-301	180	300	39	10	3000	50
PCAQ4520MB-401	200	400	50	10	2500	50
PCAQ4520MB-501	300	500	55	10	2400	50
PCAQ4520MB-701	500	700	59	10	2200	50
PCAQ4520MB-901	700	900	68	10	2100	50
PCAQ4520MB-102	800	1000	68	10	2100	50
PCAQ4520MB-122	1000	1200	74	10	2000	50
PCAQ4520MB-142	1200	1400	81	10	1900	50

- ◎ 規格參數基於環境溫度25°C取得  
All test Data is referenced to 25°C ambient
- ◎ 電感工作環境溫度：-25°C ~ 125°C  
Operating temperature range -25 °C to +125 °C
- ◎ 加載額定電流會使電感溫度上升大約 40°C (電感初始溫度+上升溫度=電感最終溫度)  
Typical Heat Rating DC Current would cause an approximately ΔT of 40°C
- ◎ 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°C  
The operating temperature of inductance do not exceed 125°C
- ◎ 使用電感時，請查閱第8頁注意事項  
The announcements is on page 9



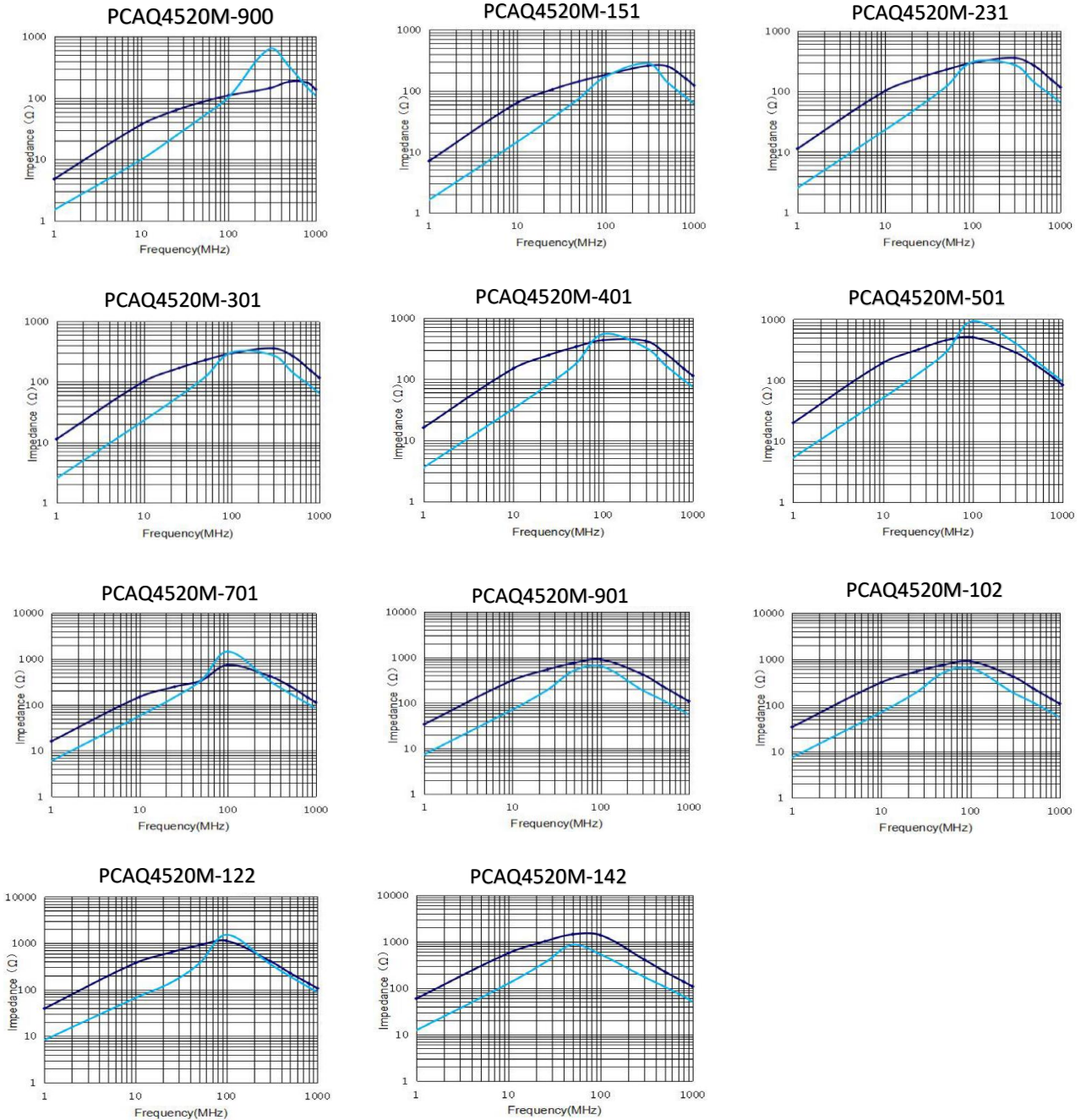


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特性曲線  
Performance Curves

共模特性 (Common Mode)

差模特性 (Differential Mode)

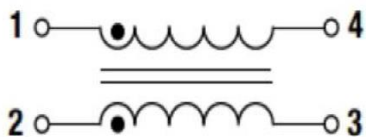


# 特性 CHARACTERISTICS



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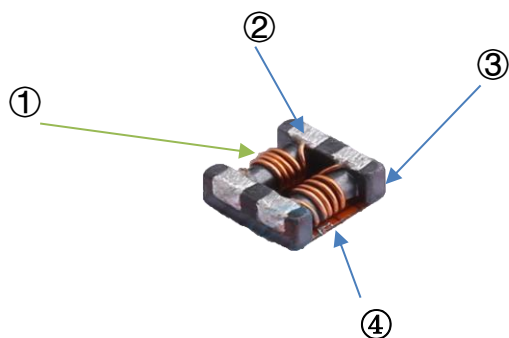
## 電路結構 Connections



◎ 電感內置兩組線圈  
Inductor Contents Two (2) Set(s) of Coil

◎ 电感顶部使用黑色油墨喷码印字  
Mark color: black

## 內部構造 Internal Structure

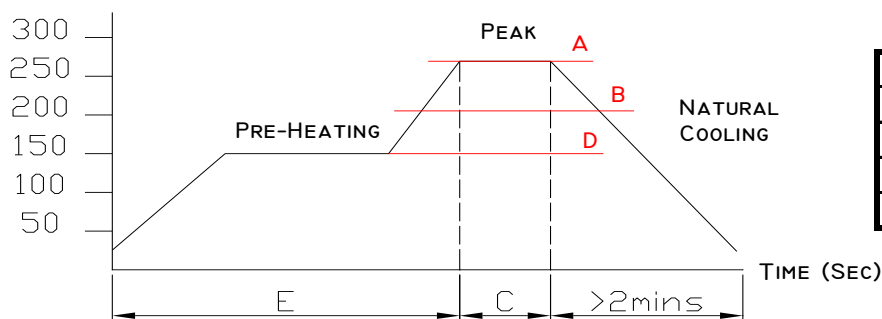


- 1: 磁芯 / Core
- 2: 電極 / Electrode
- 3: 線圈 / Coil
- 4: 頂蓋 / Base

## 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



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### 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

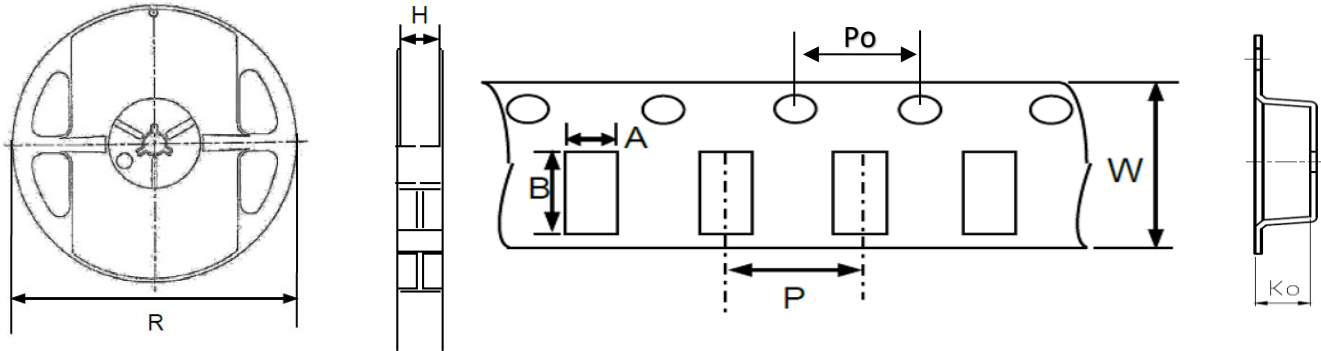
實驗名稱 ITEM	試驗要求 Specification & Requirement	試驗方法 Method Used
冷熱衝擊 Thermal Shock	Inductance change within ± 5% Without mechanical damage	-25°C, (30 mins) -> room temp. (5 mins) -> 100°C, (30 mins) -> room temp. (5 mins) 100 cycles
耐熱性 Heat Resistance	Inductance change within ± 5% Without mechanical damage	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. -25 ±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. 100 ±2 °C for total 1,000 +4/-0 hours

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載帶卷盤尺寸 : (mm)

Packing Dimension

MPQ	R	H	A	B	P	Po	W	Ko
1000pcs/卷盤	178	18	5.0Typ	5.2 Typ	8	4	16	2.3

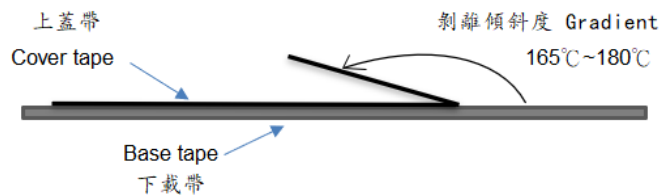


載帶剝離力:

Typical Pulling Force

對上蓋帶施加力: 20g~120g內即可與下載帶剝離

Tape Peeling off force: 20g~120g



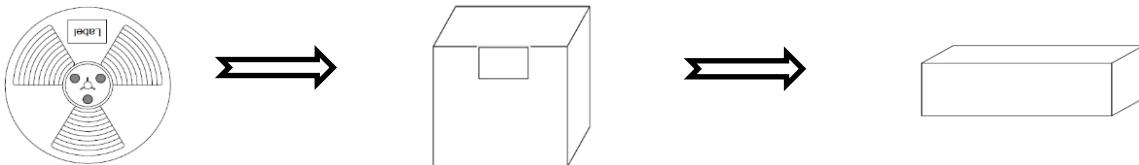
裝箱數量:

Package Quantity

1000pcs/卷盤  
1000pcs/Reel

5000pcs/每盒  
5000pcs/ Middle box

50000pcs/每箱  
50000pcs/ 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





## 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 us. Otherwise, our

- |  |   |
|--|---|
| 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                     |   |

