

ITEM P/N	PSPNAQ4020-4R7M	TEST INSTRUMENT	LCZ1068/1310BIAS/502AC
PRODUCT	SMD INDUCTOR	TEST FREQUENCY	1KHz / 0.25V

**CUSTOMER :****CUSTOMER P/N :****DESCRIPTION :** SMD INDUCTOR**P/N :** PSPNAQ4020-4R7M**REVISION NO. :** Version:1.0**DATE :** 2017-4-9**NOTES :** STANDARD

<b>DOCUMENTED</b>	
<b>APPROVED</b>	<b>Yuki</b>
<b>CHECKED</b>	<b>Ben</b>
<b>PREPARED</b>	<b>Peter</b>

**CUSTOMER APPROVAL**

company seals



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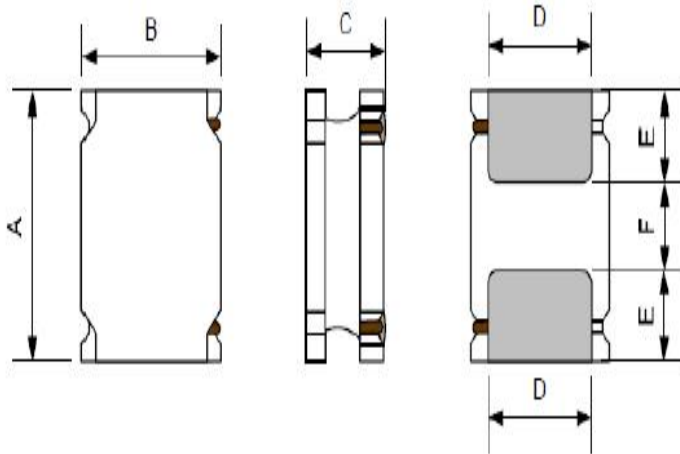


# COIL SPECIFICATION

RoHS  
COMPLIANT

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## PACKING DIMENSIONS (mm)



4020	Dimensions
A	4.00±0.2
B	4.00±0.2
C	2.00Max.
D	3.30±0.2
E	0.95±0.2
F	2.10±0.2

## EXPLANATION OF PART NUMBERS

<b>PSPNAQ</b> <u>Serial Codes</u>	<b>4020</b> <u>Size</u>	-	<b>4R7M</b> <u>Inductance Code</u>
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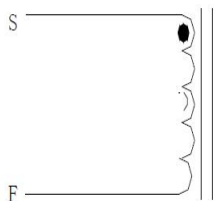
## ELECTRICAL CHARACTERISTICS

ITEM P/N	@ 25 °C Ambient Temperature				
	INDUCTANCE		I <sub>rms</sub> (A) Max.	I <sub>sat</sub> (A) Max.	DCR (mΩ) ±30%.
	Lo (μH)	TOLERANCE			
PSPNAQ40 20-4R7M	4.70	±20%	1.27	2.35	85.0

- ⊙ All test Data is referenced to 25°C ambient
- ⊙ Typical Heat Rating DC Current would cause an approximately ΔT of 40°C
- ⊙ Typical Saturation DC Current would cause Lo to drop approximately 35%
- ⊙ Operation Temperature Range : -40°C ~ 125°C
- ⊙ The Part temperature (ambient + ΔT) should not exceed 125°C under worst case operating conditions.
- ⊙ Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all effect the part temperature. Part temperature should be verified in the end application.

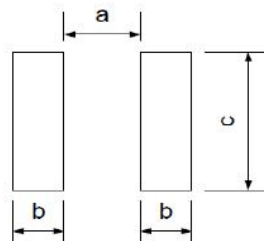
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## SCHEMATIC



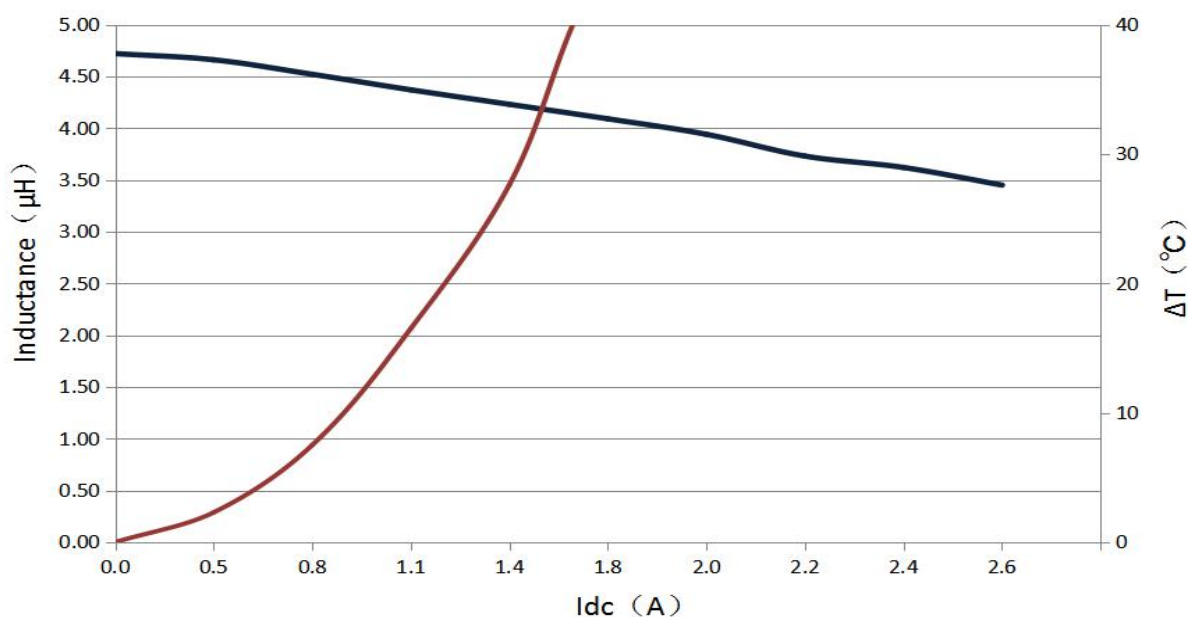
"●" 表示起线

## Recommended Land Pattern

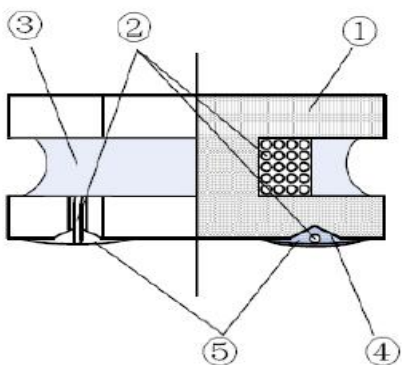


a.	1.9Typ.
b.	1.1Typ.
c.	3.7Typ.

## PERFORMANCE CURVES



## Construction and materials

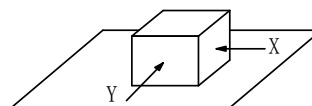


Code	Part Name	Material Name
1	Ferrite Core	Ni-Zn Ferrite
2	Wire	Polyurethane system enameled copper wire
3	Magnetic Glue	Epoxy resin and magnetic powder
4	Plating Electrodes	Ag
		Ni
		Sn
5	Outer Electrodes	Top surface solder coating Sn, Ag, Cu

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**RELIABILITY TEST:**

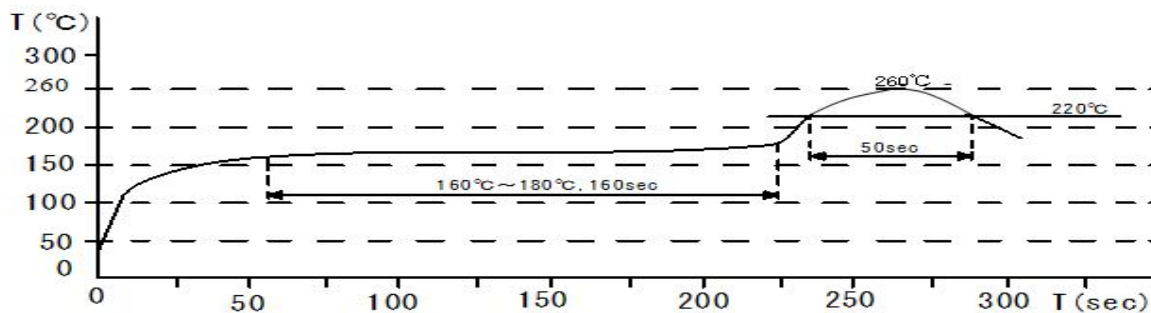
- 1.Storage Temperature range :  $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$
- 2.Operating temperature range:  $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$  (Including coil's self temperature rise)
- 3.External appearance : No external defects can be found in the visual inspection.
- 4.Electrode strength : No electrode detachment should be found when the device is pushed in two directions of X and Y with the force of 10.0N for  $10 \pm 2$  seconds after soldering between copper plate and the electrodes.



(Refer to figure at right)

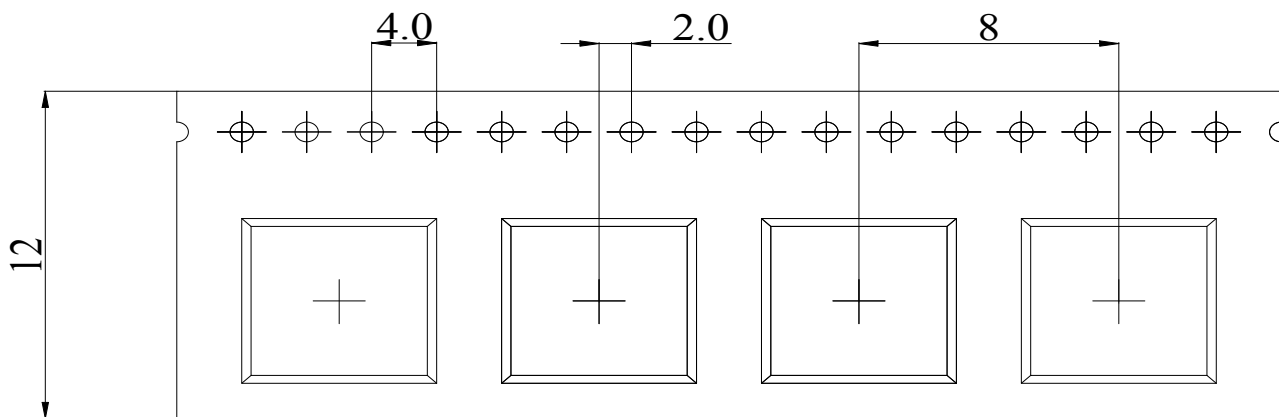
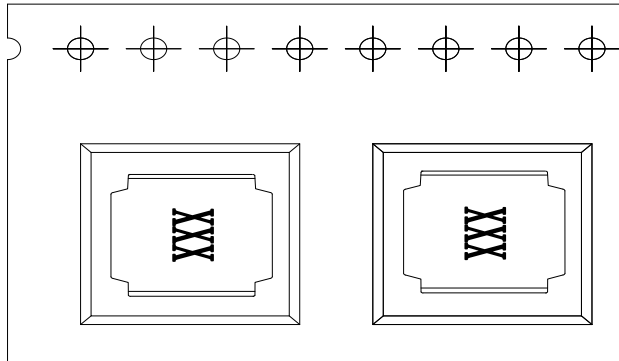
- 5.Vibration test : Inductance deviation is within  $\pm 3.0\%$  after 1 hour sweeping vibration in each three directions, namely, forward and backward, up and down, right and left. The frequency is  $10 \sim 55 \sim 10\text{Hz}$  and the amplitude of 1 minute cycle is 1.5mm PP.

- 6.Recommended reflow condition:

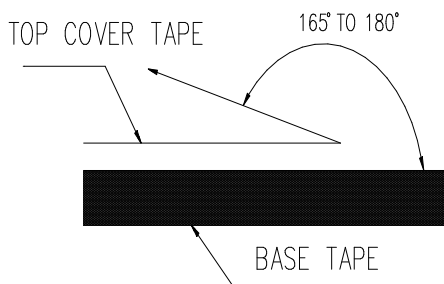


- 7.Humidity test : Inductance deviation is within  $\pm 5.0\%$  after  $96 \pm 4$  hours test under the condition of relative humidity of  $90 \sim 95\%$  and temperature of  $40 \pm 2^{\circ}\text{C}$ , and 1 hour storage under room ambient conditions after the device is wiped with dry cloth.

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**CARRIERTAPEING REEL & CARRIER MATERIALS (PAPER PLASTICS) UNIT : (mm)**

carrier tape(W)	carrier tape(P)	Reel spec (W)	Reel QTY (PCS/R)	inner box QTY (PCS)	outer box QTY (PCS)	封袋方式
12mm	8mm	13inch	3000	9000	27000	热封上带



Room Temp (°C)	Room Humidity (%)	Room atm (hPa)	Tearing Speed (mm/min)
5~35	45~85	860~1060	300

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## TEST DATA

SPEC No.	A (mm)	B (mm)	C (mm)					DCR ±30%(Ω)	INDUCTANCE	
	4.00±0.2	4.00±0.2	2.00Max.						L(0)±20%	2.35 A ≈65% L(0)
1	4.01	4.01	1.90					76.0	4.92	PASS
2	4.00	4.00	1.92					78.0	4.63	PASS
3	4.02	4.01	1.89					72.0	4.78	PASS
4	3.99	4.00	1.92					69.0	4.58	PASS
5	4.01	4.01	1.90					65.0	4.52	PASS
6	4.02	4.01	1.95					78.0	4.49	PASS
7	4.02	4.02	1.95					73.0	4.61	PASS
8	4.01	4.00	1.92					66.0	4.57	PASS
9	3.98	3.99	1.91					62.0	4.49	PASS
10	4.01	4.01	1.93					59.0	4.65	PASS
$\bar{X}$	4.01	4.01	1.92					69.80	4.624	
R	0.04	0.03	0.06					19.00	0.430	

© All test Data is referenced to 25°C ambient

## 产品注意事项

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10~80%RH以内，超过保存期限可能会使产品端子电极发生氧化。
- ◎ 请勿在极端环境下使用和保存（高盐，强酸，强碱，强辐射等）。
- ◎ 产品焊接前，请进行预热；预热温度与焊接温度之间温差建议控制在150℃以内。
- ◎ 产品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产品失效。
- ◎ 产品焊接到线路板后，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，这可能会导致电感发生破裂，脱落，以致失效。
- ◎ 产品请勿接触清洗剂，酒精等液体，这会侵蚀产品本体，从而导致产品失效。
- ◎ 产品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。
- ◎ 过高的静电会对产品产生永久性损害，请注意静电防护。
- ◎ 产品通电过程请勿触摸产品任何部位，防止触电。
- ◎ 本产品作为磁性产品，设计时请务必考虑周边元器件与本产品可能产生的相互影响。
- ◎ 本产品适用于一般电子设备，如：AV设备，通信设备，家电产品，娱乐设备，计算机设备，个人设备，办公设备，计测设备，工业机器人等。且该一般电子设备需在常规的操作和使用方法环境下使用。对于需要高度安全性和可靠性的，或者因本产品失效造成设备故障，误操作，运转不良等危及到人的生命身体及财产安全，以及对社会产生较大不良影响的特殊用途，设计使用前务必同本公司沟通，设计使用者如在未取得我司书面同意状况下使用造成任何后果，我司不予承担。特殊用途包含但不限定如下清单：

- |                       |                  |
|-----------------------|------------------|
| 1 军用设备                | 8 关系到国防安全的设备     |
| 2 运输设备（汽车，轨道交通产品，船舶等） | 9 防灾赈灾设备         |
| 3 航空，航天设备             | 10 各种安规设备        |
| 4 发电控制设备              | 11 紧急救护设备        |
| 5 核动力相关设备             | 12 其他被认定为特殊用途的设备 |
| 6 爆炸引燃控制设备            |                  |
| 7 交通控制设备              |                  |