

绕线贴片功率电感—PS808040 系列

Wire Wound SMD Power Inductors—PS808040 Series

Operating temperature range: -25℃ to +120℃ (Including self-heating)

产品型号

PRODUCT IDENTIFICATION

PS

808040

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①	分类 Type
PS	Wire Wound SMD Power Inductor, Newly Magnetic-resin Shielded Structure

③	公称感量 Nominal Inductance
Example	Nominal Value
102	1.0μH
103	10.0μH

②	外形尺寸(L×W×H)(mm) External Dimensions(L×W×H) [mm]
808040	8.0X 8.0X4.0

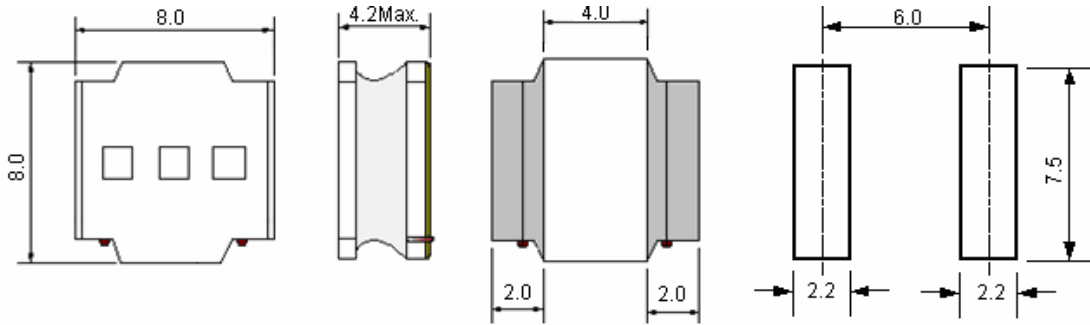
④	感量精度 Inductance Tolerance
N	±30%
M	±20%

外观尺寸

SHAPE AND DIMENSIONS

Unit: mm Tolerance: ±0.3

Recommended Land Pattern

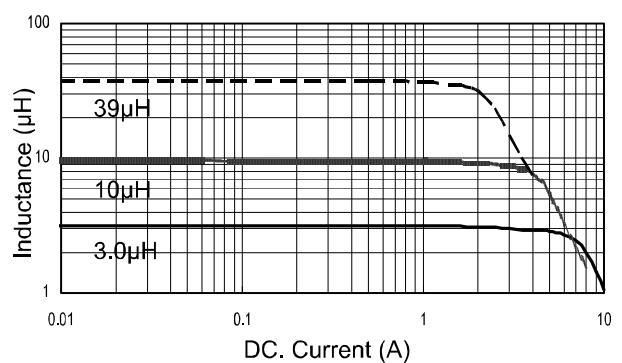
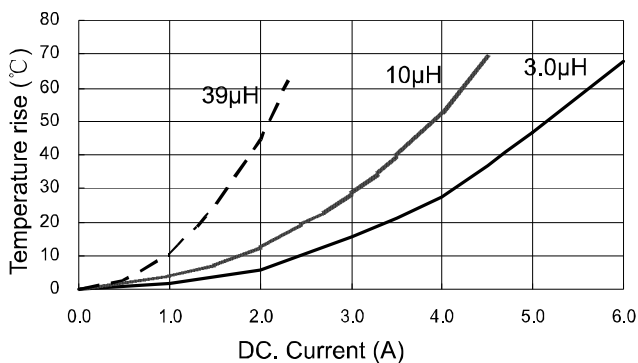


电气特性

TYPICAL ELECTRICAL CHARACTERISTICS

Temperature vs. DC Current Characteristics

Inductance vs. DC Current Characteristics





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High Reliability Fixed Inductors for Surface Mounting 高可靠性表面贴装固定电感器

MEASUREMENTS OF PS Series / PS系列测试方法

1. INDUCTANCE

The inductance is measured with a LCR meter or an impedance analyzer at 100kHz.

2. DC RESISTANCE

Measured with a digital multimeter.

3. RATED CURRENT (Maximum allowable current)

The maximum allowable current is that which inductance decrease current, or temperature rise current, whichever is smaller.

- Inductance decrease current: The inductance value decreases 30% by the excitation of DC current. (environment temperature of 125°C)
- Temperature rise current: The temperature rises 20 °C by excitation of DC current. (environment temperature of 20°C)

4. DIELECTRIC STRENGTH

For specimen coil, apply 100V DC for 5 seconds between the ferrite core and terminals. There should be no damage or abnormalities in the inductor.

5. SOLDERABILITY

After immersion of terminals in flux for 5 to 10 seconds, dip the terminals in the solder bath at +245±5°C for 2±0.5 seconds. Make certain that more than 3/4 of the surface of the terminals are coated with solder.

6. RESISTANCE TO SOLDERING HEAT

The change, if any, in inductance is measured after exposure to the reflow process under the following conditions 3 times and for 1 hour at room temperature.

Condition of reflow process

- Pre-heating: +150~180°C, 90±30 seconds
- Peak-temperature: +250±5°C (230°C, 30±10 seconds)

7. DRY HEAT TEST

The change, if any, in inductance is measured after exposure to +125±2°C in a test chamber for 1000±12 hours and for 1 to 2 hours at room temperature.

8. COLD TEST

The change, if any, in inductance is measured after exposure to -55±3°C in a test chamber for 1000 ±12 hours and for 1 to 2 hours at room temperature.

9. TEMPERATURE CYCLE TEST

Condition for one cycle:

- (a) -55±3°C.....30minutes.
- (b) Room temperature at +20°C.....2minutes.
- (c) +125±2°C.....32minutes.
- (d) Room temperature at +20°C.....2minutes.

1000cycles are applied in the test.

One hour after full cycling, the variation in the inductance is measured.

10. HUMIDITY TEST

The change, if any, in inductance is measured after exposure in a test chamber to humidity of 85 % R.H. at +85 ±2°C in a for 1000±12 hours and for 1hour exposure at room temperature.

11. VIBRATION TEST

The change, if any, in inductance is measured after the following condition:

A specimen coil is mounted on test board to which vibration is applied as follows — overall amplitude at 1.5mm, frequency range, 10 to 55Hz, and swept in the order, 10~55~10Hz per 1minute for 2 hours in each directions for total of 6 hours

12. SHOCK TEST

- Free Fall Drop Test

A specimen coil is mounted on test board and dropped 3 times in the perpendicular six directions with shock applied for 0.06 seconds at 1962m/s².

The change in inductance, if any, is measured after the test.

1. 电感值

用LCR仪表或阻抗分析仪在100kHz情况下测量电感值。

2. 直流电阻

用数码万用表测量。

3. 额定电流 (最大允许电流)

最大允许电流是电感值减小电流, 或温度升高电流, 两者中比较小的一个。

- 电感值减小电流: 直流电流励磁使电感值降低30%。(参考环境温度125°C)
- 温度升高电流: 直流电流励磁使温度升高20°C。(参考环境温度20°C)

4. 耐高压

对于试样线圈, 在铁氧体屏蔽和电极之间使用100V直流电5秒钟。在电感器上应该没有损坏和异常出现。

5. 可焊性

在把终端浸泡进焊剂5到10秒之后, 把终端插进+245±5°C的焊料缸2±0.5秒。

6. 耐焊热

把终端放置在如下焊接流程中三次, 或者在室温下持续1小时之后, 测试电感值的变化:

焊接流程条件:

- 预焊接: +150~180°C, 90±30秒
- 峰值温度: +250±5°C (230°C, 30±10秒)

7. 耐热测试

在一个+125±2°C温度的测试室中放置500±12小时, 以及在室温下1到2小时, 测试电感值的变化。

8. 耐寒测试

在一个-55±3°C温度的测试室中放置1000±12小时, 以及在室温下1到2小时, 测试电感值的变化。

9. 温度循环

循环一周的条件:

- | | |
|----------------|------|
| (a) -55±3°C | 30分钟 |
| (b) 室温下在+20°C时 | 2分钟 |
| (c) +125±2°C | 32分钟 |
| (d) 室温下在+20°C时 | 2分钟 |

在本项测试中使用1000个温度周期。

在完整的循环后一个小时, 测试电感值的变化。

10. 湿度测试

在一个+85±2°C温度、湿度为85%R.H.的测试室中放置1000±12小时, 以及在室温下1小时, 测试电感值的变化。

11. 振动测试

电感值的变化通过如下条件测试:

一个固定电感器贴装在一块测试板上, 适用于以下情况 - 整体振幅1.5毫米, 频率范围10~55赫兹, 有规则的电子扫频; 在3个方位的每个方向上每分钟10~55~10赫兹两小时, 整个6小时。

12. 震动测试

- 自由落体测试

将试样线圈贴装在一个测试板上, 在1米高度上从六个垂直方向, 在0.06秒内以1962m/s²的速度震动后自由坠落3次。

然后测试电感值的变化。



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规格特性

SPECIFICATIONS

PS808040 Series

Part Number	Inductance @100KHz, 1V	DC Resistance ($\pm 30\%$)	Min. Self-resonant Frequency	Max. Saturation Current *3	Max. Heat Rating Current *4
Units	μH	Ω	MHz	A	A
Symbol	L	DCR	SRF	Isat	Irms
PS8080 40- 821 N	0.82 $\pm 30\%$	0.008	94	13.80	6.30
PS8080 40- 102 N	1.0 $\pm 30\%$	0.008	89	9.85	6.30
PS8080 40- 152 N	1.5 $\pm 30\%$	0.010	67	8.15	5.65
PS8080 40- 202 N	2.0 $\pm 30\%$	0.012	43	9.25	5.15
PS8080 40- 222 N	2.2 $\pm 30\%$	0.012	41	7.10	5.15
PS8080 40- 302 N	3.0 $\pm 30\%$	0.014	32	6.10	4.70
PS8080 40- 332 N	3.3 $\pm 30\%$	0.017	27	6.50	4.40
PS8080 40- 392 N	3.9 $\pm 30\%$	0.017	26	5.75	4.35
PS8080 40- 472 N	4.7 $\pm 30\%$	0.019	24	5.90	4.10
PS8080 40- 512 N	5.1 $\pm 30\%$	0.019	22	4.70	4.05
PS8080 40- 562 N	5.6 $\pm 30\%$	0.021	24	6.00	3.85
PS8080 40- 622 N	6.2 $\pm 30\%$	0.021	20	4.45	3.85
PS8080 40- 682 M	6.8 $\pm 20\%$	0.024	20	4.55	3.60
PS8080 40- 822 M	8.2 $\pm 20\%$	0.026	17	4.20	3.45
PS8080 40- 103 M	10 $\pm 20\%$	0.029	15	3.60	3.30
PS8080 40- 153 M	15 $\pm 20\%$	0.047	12	2.95	2.60
PS8080 40- 183 M	18 $\pm 20\%$	0.053	11	2.70	2.40
PS8080 40- 223 M	22 $\pm 20\%$	0.069	9.5	2.40	2.10
PS8080 40- 273 M	27 $\pm 20\%$	0.078	9.2	2.15	2.00
PS8080 40- 333 M	33 $\pm 20\%$	0.097	7.8	2.05	1.80
PS8080 40- 363 M	36 $\pm 20\%$	0.102	7.8	2.00	1.75
PS8080 40- 393 M	39 $\pm 20\%$	0.107	7.8	1.95	1.70
PS8080 40- 433 M	43 $\pm 20\%$	0.113	7.8	1.90	1.65
PS8080 40- 473 M	47 $\pm 20\%$	0.136	6.4	1.75	1.55
PS8080 40- 513 M	51 $\pm 20\%$	0.142	6.4	1.70	1.50
PS8080 40- 563 M	56 $\pm 20\%$	0.148	6.4	1.55	1.45
PS8080 40- 623 M	62 $\pm 20\%$	0.182	6.4	1.50	1.30
PS8080 40- 683 M	68 $\pm 20\%$	0.196	4.9	1.45	1.25
PS8080 40- 753 M	75 $\pm 20\%$	0.211	4.9	1.35	1.20
PS8080 40- 823 M	82 $\pm 20\%$	0.225	5.9	1.30	1.15
PS8080 40- 913 M	91 $\pm 20\%$	0.272	4.9	1.20	1.05
PS8080 40- 104 M	100 $\pm 20\%$	0.290	4.2	1.15	1.00
PS8080 40- 124 M	120 $\pm 20\%$	0.334	3.5	1.05	0.95
PS8080 40- 224 M	220 $\pm 20\%$	0.599	3.5	0.85	0.80
PS8080 40- 334 M	330 $\pm 20\%$	0.889	2.8	0.68	0.64

※1. All test data is referenced to 20°C ambient;

※2. Rated current: Isat or Irms, whichever is smaller;

※*3. Isat: DC current at which the inductance drops approximate 30% from its value without current;

※*4. Irms: DC current that causes the temperature rise ($\Delta T = 40^\circ\text{C}$) from 20°C ambient.

REEL PACKAGING / 卷盘包装

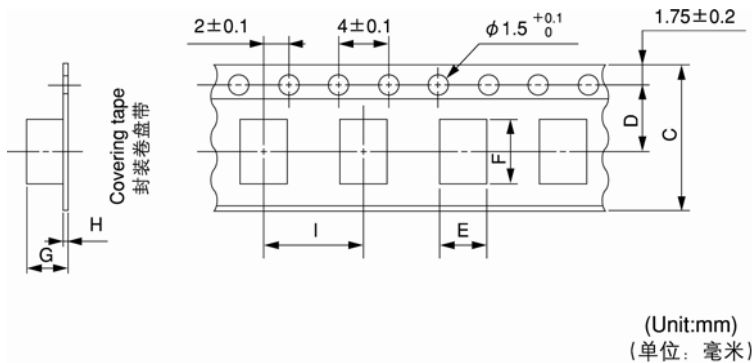
Taping for automatic insertion of SMT coils.

Surface mount devices/adjustable & fixed

This ever expanding assortment of product and unsurpassed quality control, not only give you a component that functionally performs, but just as importantly, allows the use of a variety of placement and soldering equipment necessary for the FLEXIBLE MANUFACTURING PLANT required in today's competitive world.

Various packaging schemes are available. In addition to bulk, tape and reel and magazine, methods are offered for high volume insertion equipment. The following chart lists the packaging details for FRE's SMD coils:

Tape and reel dimensions



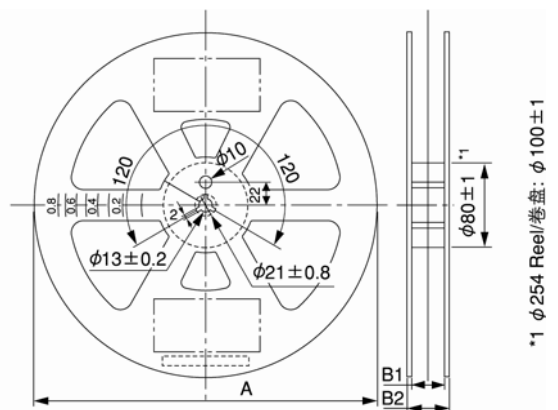
自动插入编带的表面贴装线圈

表面贴装设备/可调整型和固定型

它可以扩展到产品分类和非常突出的质量控制。不只是给你一个构成方面的优良的性能表现，而且最重要的，允许在当今这个竞争世界中要求的灵活制造厂使用多样化的放置和焊接设备。

可以使用多样的包装方案。提供批量散装和卷盘包装供大量插入设备使用。以下图表为富尔的SMD线圈罗列包装细节：

编带和卷盘尺寸



Notes:

- (1) There are at least 10 blank spaces (80mm each) at both ends of the tape which do not include the coils.
- (2) The protective tape should not cover the holes nor be shifted to the sides. Further, the tape should not be removed during transportation.
- (3) The coils are positioned with the bonding surface facing bottom of the pocket.

注意：

- (1) 在没有包括线圈的编带的每个末端至少有10个空白空间（每个80毫米）。
- (2) 保护带不能覆盖洞口或者移动到侧面。而且，在运输过程中，带子不能移动。
- (3) 线圈设置在焊接表面对袋子底部。

■ Surface mounting type, reel/tape list 表面贴装型，卷盘 / 编带列表

Type	Reel Size (mm)			Tape Size (mm)							Q'ty 1 Reel
	A	B1	B2	C	D	E	F	G	H	I	
PS808040	φ330	17.5 ± 0.5	21.5 ± 1	16.0 ± 0.3	7.5 ± 0.1	8.5 ± 0.1	8.5 ± 0.1	4.7 ± 0.1	0.4 ± 0.05	12.0 ± 0.1	1000